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A STUDY ABOUT ECONOMIC AND NON-ECONOMIC FACTORS INFLUENCING SELF-EMPLOYED TAXPAYERS' TAX COMPLIANCE BEHAVIOURS IN KUALA LUMPUR, MALAYSIA.

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Abstract

The aim of this paper is to study tax compliance behavior of self-employed taxpayers in Kuala Lumpur, Malaysia and how economic factors of inflation and tax rates as well as non-economic factors of tax knowledge and tax deterrence could influence compliance behavior. Basically, those previous studies have merely focus on small and medium enterprises and less of them conduct the relevant research on self-employed population in Malaysia. Simple random sampling technique is adopted and there were 150 of self-employed taxpayers had randomly selected from Kuala Lumpur to participate in this study.

Key words: *Tax compliance, inflation, tax rates, tax knowledge, tax deference, Sole-proprietors*

Introduction

In Malaysia, different kinds of taxes such as Personal and Corporate Income Tax, Real Property Gain Tax, Goods and Services Tax (GST) and so on are implemented in the country. Therefore, a fair and effective tax system is developed to collect tax revenues from citizens. Upon collection of tax revenue, government carries responsibilities of distributing the revenue through public welfare, investment and other approaches that aimed to develop the country. In fact, tax collection assists to finance public expenditure of a country. Although paying tax is the legal responsibilities of every citizen, the government still couldn't ensure all citizens will have good sense on their tax duty obligation. In other words, tax noncompliance and tax evasion still can happen. Although the total tax revenue collected by Malaysian government had increased throughout three years where increased from RM155,952 million (2013) to RM171,770 million (2014) to RM183,378 million (2015), the percentage of Gross Domestic Product (GDP) had dramatically declined throughout three years where declined from 21.6% in 2013 to 20.9% in 2014 to 20.0% in 2015. Gross Domestic Product (GDP) rate is a monetary value serves as an indicator for measure the overall economic health of a country. Thus the percentage of GDP of Malaysia indicates that Malaysia's economic health is decreasing from year to year.

Literature Review

Definition and Extent of Tax Compliance

Tax compliance is referring to the degree that taxpayer complies or fail to comply with the tax regulations in their country. Definition of tax compliance is not limited to the actual amount of tax payable that the taxpayer required to pay to the tax authority, it also covering initial procedure of filling of tax return, reporting all taxable income as well as tax liabilities (Bello, 2014). Level of voluntary tax compliance of taxpayers is associated with the tax deterrent measure and tax awareness of taxpayer.

Non-Economic Factors

Tax Knowledge

The findings of Nzioki, and Peter (2014) indicate that tax knowledge and education has significant positive effect on tax compliance in Real Estate Sector. An increase of tax knowledge level can lead to the increase of tax compliance level. Mukasa (2011) agree that tax knowledge has a significant positive relationship with tax compliance behavior. The survey among small and medium registered taxpayers operating in Kampala central division found that low tax knowledge is one of the significant factors which contributed to less compliance. This is because lack of knowledge of tax law coupled with inadequacy of taxation books in layman terms to guide them which will contribute to unintentional tax non-compliance.

Tax Deterrence

The findings of Wilks and Pacheco (2014) indicated that intentions of taxpayer to comply tax were higher and intentions to evade tax were lower when deterrence power was high. The respondents of their research more likely and willing to comply with tax law if authorities were fair and having higher ability to detect and penalize tax evader. Effect of authority's power to detect and punish tax evader was significant on enforced compliance but not on voluntary compliance. In the study of Sapiei, Kasipillai, and Eze (2014) found that there is a significant negative relationship between tax deterrence sanctions and tax non-compliance behavior. In this study, tax deterrence sanctions such as probability of being audited, severity of penalties are determinants of non-compliance behavior such as under-reporting of income and overall non-compliance.

Economic Factor

Tax Rate

The study of Sour (2011) proved tax rates influenced level of tax noncompliance positively. It mentioned high tax rate significantly caused greater tax noncompliance especially when the taxpayers had aware the tax rates they were paying was actually higher than the average tax rate that others paid. Taxpayers might perceive the tax system is unfair to the extent they assume they shouldn't comply with it. Due to negative perception of tax structure that applied high tax rates, taxpayers manipulated reported income by conducting "creative accounting" to reduce certain percentage in tax. Edelbacher, Kratcosk and Dobovsek (2015) justified the relationship between tax rate and non-compliance is significantly positive. As expected, one would engage in higher tax noncompliance at higher tax rates than lower tax rates. Rosmaria Jaffar@ Harun et al. (2014) mentioned although corporations are upset regarding the high income tax rates, the authors indicated it still did not encourage corporations to against the tax law.

Inflation

According to Maria Jesus and Judith (2013), the study described real value of nominal disposable income will be impaired as inflation cost in inflation period. Because of the inflation cost, it increased average cost of livings to the extent it caused taxpayers to adopt the decision to evade tax. The study stated inflation influenced purchase power of individuals and thus induced tax noncompliance positively. According to Ngotho and Kerongo (2014), taxpayers' monies were restricted by inflation and had caused impact of taxpayers and corporations had less money to pay tax. Due to this phenomenon, it was reasonably to assume tax noncompliance rose accordingly when inflation increased. On the other hand, if inflation condition has slowed down, the level of tax noncompliance will declined.

Based on the preceding review of research that mentioned above, we draw out the following hypotheses:

H_O1: There is no significant relationship between Deterrent Tax Measures and Tax Compliance behavior of Self-Employed Taxpayer in Kuala Lumpur, Malaysia.

H_O2: There is no significant relationship between Tax Knowledge and Tax Compliance behavior of self-employed taxpayers in Kuala Lumpur, Malaysia.

H_03: There is no significant relationship between tax rate and tax compliance behavior of self-employed taxpayers in Kuala Lumpur, Malaysia.

H_04: There is no significant relationship between inflation and tax compliance behavior of self-employed taxpayers in Kuala Lumpur, Malaysia.

Research Objective and Hypotheses Development

Hypotheses statements had developed into two ways: Null hypothesis (Ho) and Alternative Hypothesis (H_1).

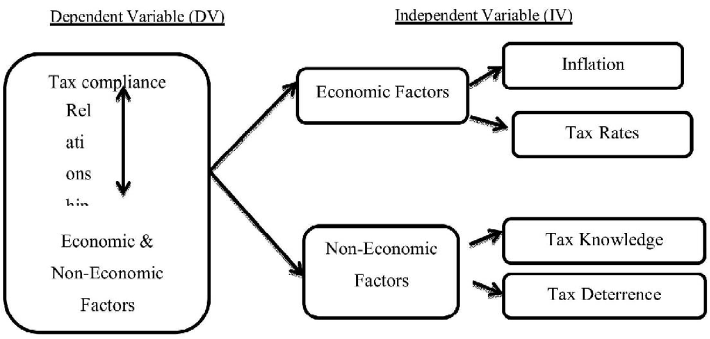
Research Objective 1: to examine the relationship between tax deterrent and tax compliance behavior among self-employed taxpayers in Kuala Lumpur, Malaysia.

Research Objective 2: to examine the relationship between tax knowledge and tax compliance among self-employed taxpayers in Kuala Lumpur, Malaysia.

Research Objective 3: to examine the relationship between tax rate and tax compliance among self-employed taxpayers in Kuala Lumpur, Malaysia.

Research Objective 4: to examine the relationship between inflation and tax compliance among self-employed taxpayers in Kuala Lumpur, Malaysia.

3.1 Theoretical framework for development of hypothesis and research objective (Self-made, 2016)



Research Methodology

Research sampling design, Data Collection,

With adoption of ***simple random sampling*** techniques, Wilayah Persekutuan Kuala Lumpur is selected as geographical area to conduct the research. 150 self-employed taxpayers in Kuala Lumpur are selected as the sample size. Researcher conducted ***primary research*** through distribute questionnaires electronic form, *Google Forms* where the researcher will send online questionnaire link through e-mail or social networking websites. ***Secondary research*** is conducted to collect information from journal, article that has been published or organization records, survey and annual reports and used in literature review in this paper.

Data Analysis Technique

Internal consistency reliability analysis is carried out by running Cronbach's alpha test before the questionnaires items to be employed as test for the research in order to test validity, consistency and reliability of the questionnaire items that are used to define scale (Tavakol, & Dennick, 2011).

$$\alpha = \frac{n}{n-1}\left(1-\frac{\Sigma Vi}{Vtest}\right)$$

- n = number of questions
- Vi = variance of scores on each question
- Vtest = total variance of overall scores (not %' s) on the entire test

Source: Allen (n.d.)

Multiple linear regression model: *Significant P-value and â coefficients* for each independent variable generated from model in order to test each hypothesis under this study. Significant level is tested at *95% of confidence level*. The formula below illustrates the regression model which is used in this study:

$$CB = \alpha + \beta_1 tk + \beta_2 ptd + \beta_3 TR + \beta_4 IF + \varepsilon$$

Where:

CB	= Tax compliance behaviour
α	= constant
$\beta_1, \beta_2\ \beta_3$ and β_4	= Coefficient indicating rate of change of tax compliances as tax knowledge, tax compliance costs and tax deterrent measures.
tk	= Tax knowledge
ptd	= Tax deterrent measures
TR	= Level of tax rates
IF	= influence of inflation on paying taxes
E	= Error term

Pearson's Correlation is used to measure the strength or extend of association between linear related variables which were collected from same respondents. According to statisticssolutions.com (2016), when r = 0.0, there is no relationship between x and y, when r is negative, there is a negative relationship between x and y; when r is positive, there is a positive relationship between x and y.

In Section A of the questionnaire, respondents were asked to clarify their basic information like gender, income level, highest level of education and age. From the 150 set of responded questionnaires, results are presented as below:

Table 1: Breakdown of Respondents According To Gender, Income Level, Highest Level of Education & Age

CRITERIA	n	PERCENTAGE
GENDER		
Male	74	56%
Female	59	44%
INCOME LEVEL		
Up to RM24,000	24	18%
RM24,001 – RM48,000	35	26%
RM48,001 – RM72,000	29	22%
RM72,001 – RM120,000	24	18%
Above RM120,001	21	16%
HIGHEST LEVEL OF EDUCATION		
No Formal Education	3	2%
Primary Education	4	3%
Secondary Education	41	31%
Diploma / Vocational course	33	25%
Tertiary Education	52	39%
AGE		
18 years - 25 years	38	29%
26 years - 35 years	56	42%
36 years - 45 years	18	14%
46 years - 55 years	17	13%
Above 55 years	4	3%
Total	133	100%

Hypothesis Testing

Table 2: List of null hypothesis in this study

	Hypotheses	Significant Value (P)	Result
$H_0$1	There is no significant relationship between Deterrent Tax Measures and Tax Compliance behavior of Self-Employed Taxpayer.	$p<0.05$	Reject $H_0$1
$H_0$2	There is no significant relationship between Tax Knowledge and Tax Compliance behavior of Self-employed taxpayers.	$p>0.05$	Failed to reject $H_0$2
$H_0$3	There is no significant relationship between tax rate and tax compliance behavior of self-employed taxpayers in Kuala Lumpur, Malaysia.	$p<0.05$	Reject $H_0$3
$H_0$4	There is no significant relationship between inflation and tax compliance behavior of self-employed taxpayers in Kuala Lumpur, Malaysia.	$p>0.05$	Failed to reject $H_0$4

Discussion of Findings

Tax Deterrence

The result of this study is in agreement with the findings of **Sapiei, Kasipillai and Eze (2014)** who found that there is a significant negative relationship between tax deterrence sanctions and tax non-compliance behavior of corporate taxpayers in Malaysia. The findings is also *supported* by **Loo, Mckerchar and Hansford (2009),** who assert that increase of perceived detection has *significant influence* to taxpayer's decision to comply with the tax law, due to their fear of being audited or penalized. This is again supported by **Ali, Fjeldstad, and Sjursen (2013)** who found that economic deterrence has significant relationship with compliance attitude of individuals in South Africa and Kenya. **Wilks and Pacheco (2014)** found evidence for capability of authority to detect and punish tax evader is significantly and positively correlated with enforced compliance. However, this is opposed by the findings of **Anyaduba, Eragbhe and Kennedy (2012)** as they discovered that deterrent tax measures in Nigeria is *insignificant* in helping the country to promote tax compliance.

Tax Knowledge

Nzioki and Peter (2014), Mukasa (2011) and **Mukhlis, Utomo and Soesetio (2015)**, in their review of tax compliance research found that there is a significant and positive relationship between tax knowledge and tax compliance. However, **Kasipillai, Aripin, and Amran (2013)** opposed the argument on positive correlation between tax knowledge and tax compliance behavior. They claim that there is a *negative relationship* between two variables as they found that tax compliance to be higher for taxpayers who were less well educated and older. This is because higher level of tax knowledge is associated with well-know about the loophole in tax regulation and system know the legal way to reduce or even avoid tax.

Tax Rates

Slemrod (2007) and **Palil (2010)** conducted a research about "The Economics of Tax Evasion" and the research finding stated the significant relationship between non-compliance behavior and tax rate was still uncertain. The research conducted by **Mas'ud, Alhaji Aliyu and Gambo (2014)** shows that there is significant negative correlation between tax rate and tax compliance among population in Africa. Next, **Sour (2011)** and **Edelbacher, Kratcosk and Dobosyek (2015)** found an supported the finding of this research in which indicates there is a significantly positive relationship between tax rate and tax non-compliance behavior.

Inflation

This study is supported by the research of **Lucotte (2010)** indicated that there is an insignificant and negative relationship between economic factors and tax non-compliance behavior. The researcher justified inflation does not matter in affecting tax non-compliance decision in Malaysia context. In period of hyperinflation, increasing of inflationary financing by government tends to create higher noncompliance behaviors. In this case, noncompliance was a main by-product of inflation, not the main factor that induces noncompliance. **However, the findings of this research are opposed by Maria Jesus and Judith (2013)** and **Ngotho and Kerongo (2014**), in their review of tax compliance research found that there is a significant and positive relationship between inflation and tax non-compliance behavior

Limitations and Recommendations

Our findings are limited by the geographical limitation, time and financial constraints and small sample size. We also limited by the poor cooperativeness of respondents and major respondents doubt the reliability of confidential statement. Our findings also suggest Malaysian government to further improve and reform current taxation system and tax administration. Additionally, strict law enforcement as another in order to gain public confidence towards tax system, government should also ensure the transparency and equitable of tax administration through strictly enforcement of tax laws.

Conclusion

The major finding in this research indicated that economic and non-economic factors have a significant and positive relationship self-employed taxpayers' tax compliance behaviour in Kuala Lumpur, Malaysia. The result shown that the economic factors (inflation and tax rates) and non-economic factors (tax knowledge and tax deterrence) predictors have a significantly positive influence on self-employed tax payers' tax compliance behaviour.

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MINERAL SECTOR IN INDIA – AN OVERVIEW

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ABSTRACT

Mining and minerals play a vital role in the national economy, national security and in the life of individual. Minerals the basis for materials and the population governs from consumption of materials at a place. Most products we use in our day-to-day lives are manufactured from minerals obtained from mining operations. India is richly endowed with minerals. Our country possesses more than 100 minerals ***barites*** *74,000,000 tons, tons* ***asbestos*** *27000 deposits. Out of 100 minerals, there are 30 minerals which have economic significance. Some of the examples are coal, iron ore, manganese, bauxite, mica etc. But the reserves of petroleum and some nonferous metallic minerals especially copper, lead, zinc, tin, graphite are inadequate. Non-ferous minerals are those which do not contain iron. Country fulfills internal demands for these minerals by importing them from other countries. In this study a modest attempt is made an overview of mineral sector in India.*

Key Words: National Economy, Telecommunications, Electronics Gadgets, Mineral Products.

Introduction

Minerals are valuable natural resources that are finite and non-renewable. The history of mineral extraction in India dates back to the days of the Harappa civilization. The wide availability of minerals in the form of abundant rich reserves and the eco-geological conditions make it very conducive for the growth and development of the mining sector in India. As a major resource for development the extraction and management of minerals has to be integrated into the overall strategy of the country's economic development. The exploitation of minerals has to be guided by long-term national goals and perspectives. Thus, minerals play a key role in the evolution of human society and its overall economic development. Mining sector, being one of the core sector of economy, provides basic raw materials to many important industries like power generation (thermal), iron and steel, cement, petroleum and natural gas, petro-chemicals, fertilizers, precious & semi-precious

Mineral Based Industries In India

India, today, is a major minerals producer ranking among the world's leading producers of chromite, coal (bituminous), iron ore, manganese, bauxite and zinc. There are as many as 84 minerals produced (in 2015-2016) in the country which included 4 energy (fuel) minerals, 10 metallic and 44 non-metallic (industrial) minerals, 3 atomic minerals and 23 minor (building and other) materials (GOI, 2016). In meeting the demand for primary mineral raw material for its domestic mineral-based industries, India is by and large self-sufficient in bauxite, chromite, iron and manganese ores, coal (with the exception of very low coking coal required in steel plants), lignite, ilmenite and rutile among metallic minerals and almost all industrial minerals with very few exceptions[2]. Mineral Production is presented in Table 1.

Table 1 Mineral Production during the year (2011-12 to 2015-16) (In Rs. Crores)

Mineral	2011-12	2012-13	2013-14	2014-15	2015-16
All Minerals (excluding atomic minerals)	210334.55	234612.66	227176.05	267637.01	268955.02 (100)
Fuel Minerals	143498.21	156834.04	155646.06	171014.04	182920.12 (68.02)
Metallic Minerals	41984.50	43381.67	37212.03	36773.09	31066.03 (11.55)
Non-Metallic Minerals , Minor Minerals	24881.84	34396.95	34317.05	59850.11	54969.31 (20.43)

Note: Figures in brackets are percentages

Source: Annual Report 2015-2016, Ministry of Mines, Government of India, 2016

From the table 1 mineral production (excluding atomic minerals) during the year 2015-16 estimated at Rs. 268955.02 crore, was an increase of 1.57 per cent over that of the previous year 2014-15. In the total value of mineral production, the share of the fuel (energy) minerals was 68.02 per cent in the year 2015-16. The rest accrued from the metallic minerals 11.55 per cent in the year 2015-16, Non-Metallic Minerals, Minor Minerals 20.43 per cent in the year 2015-16.

It is also seen that in the group of metallic minerals, most of the contribution to production is by bulk or surface minerals like iron ore, manganese ore, chromite and bauxite. The contribution of basic (base) minerals like lead, zinc, copper and nickel and of noble or precious minerals like gold and diamond is quite less. This is a reflection of the situation in India where most minerals found near the surface and easily extractable (bulk minerals) have been explored and are being exploited. Exploration is yet to take place for base and noble minerals in more difficult terrain, needing sophisticated technology and expertise. The potential of these minerals has not been realized and therefore, exploration and exploitation of these minerals should receive greater attention in the future[3].

Exports and Imports

India continued to be wholly or largely self-sufficient in minerals which constitute primary mineral raw materials to industries, such as, thermal power generation, iron & steel, ferro-alloys, aluminium, cement, various types of refractories, etc. India is, by and large, self-sufficient in coal (with the exception of very low ash coking coal required by the steel plants) and lignite among mineral fuels; bauxite, chromite, iron and manganese ores, etc. among metallic minerals; and almost all the industrial minerals with the exception of chrysotile asbestos, borax, fluorite, kyanite, potash, rock phosphate and elemental sulphur. Despite high degree of self-sufficiency, some quantities of various minerals/ores are imported due to economic consideration or requirement of specific grade to meet the demand for either blending with locally available mineral raw materials or manufacturing special qualities of mineral based products. India continued to depend on imports of raw uncut stones for their value-added re-exports. Exports is presented in table 2.

Table 2 Exports (In Rs. Crore)

Items	Exports				
	2011-12	2012-13	2013-14	2014-15	2015-16
Ores and Minerals	1,32,457	1,52,698	1,60,101	1,94,783	1,78,077
Metals and Alloys	1,22,914	1,24,789	1,40,614	1,53,156	1,67,120

Source: Annual Report 2015-2016, Ministry of Mines, Government of India, 2016

From the table 2 India has exported ore and minerals during the year 2015-16 for Rs. 1, 78,077 crores Ores and Metals and Alloys during year 2015-16 for Rs.1, 67,120 Crores, ores and minerals Rs. 16,706 crores was on decrease of the previous 2014-15. Metals and alloys Rs. 13,964 crores was an increase in the previous year 2014-15 respectively. Imports are presented in table 3.

Table 3 Imports (In Rs. Crore)

Items	Imports				
	2011-12	2012-13	2013-14	2014-15	2015-16
Ores and Minerals	8,12,975	9,78,214	11,00,800	12,15,827	10,71,689
Metals and Alloys	2,36,245	3,99,512	4,46,566	3,21,356	4,01,259

Source: Annual Report 2015-2016, Ministry of Mines, Government of India, 2016

From the table 3 India imports ores & minerals during the year 2015-16 for Rs. 10,71,689 crores and metal & alloys during 2015-16 for Rs. 4,01,259 Crores. Ores and Minerals Rs. 1, 44,138 crores was decrease in the previous 2014-15 and Metals and Alloys Rs. 79,903 Crores decrease in the previous 2014-15 respectively.

Mineral Prices in India

The world mineral markets are generally volatile and mineral prices have shown great volatility since the Second World War in response to changes in the market conditions. However, till 1991 market liberalization, the minerals market in India had limited exposure to the world market as most mineral production was utilized in the domestic market which was protected and mineral prices were determined by the government. Even then in respect of the prices of crude oil and the minerals in respect of which India participated in the external trade, the changing mineral prices had their impact on the Indian business and economy. It is, therefore, worthwhile to discuss the broad trends in the world mineral prices in a historical perspective, in order to have a proper understanding of the emerging developments in the country's mineral sector. From the end of the Second World War till about 1974 there was a high demand for minerals due to strong world economic growth. During 1950-73, crude oil prices were effectively controlled by the so-called "Seven Sisters" and remained practically constant in real sense. During the same period, metal prices were subject to considerable fluctuations around an upward trend. Positive and increasing long-run growth rates were viewed as a durable feature of the mineral markets.

Structure of Mineral Industry in India

Indian mineral industry is characterized by a large number of small operational mines. Reporting mine is defined as ,A mine reporting production or reporting 'nil' production during a year but engaged in developmental work, such as, overburden removal, underground driving, winning, sinking work, exploration by pitting, trenching or drilling as evident from the mineral conservation and development rules (MCDR) returns. The Number of Operating Mines is presented in Table 4

Table 4 Number of Operating Mines in 2012-13 to 2015-16

Item	2011-12	2012-13	2013-14	2014-15	2015-16
All Minerals (excluding atomic Minerals, Petroleum, natural gas and minor minerals)	2976	3969	3978	3722	3318
Coal (Including Lignite)	522	575	575	575	575
Metallic Minerals	569	699	708	663	595
Non-Metallic Minerals	1919	2515	2695	2848	2148
Total	5986	7705	7956	7808	6636

Source: Annual Report, 2015-2016, Ministry of Mines.

Indian mining industry is characterized by a large number of small operational mines. Reporting mine is defined as ,A mine reporting production or reporting 'nil' production during a year but engaged in developmental work, such as, overburden removal, underground driving, winning, sinking work, exploration by pitting, trenching or drilling as evident from the MCDR returns . The number of mines which reported mineral production (excluding minor minerals, petroleum (crude), natural gas and atomic minerals) in India was 3318 in 2015-16 as against 3722 in the previous year. Out of 3318 reporting mines, 498 were located in Rajasthan followed by Andhra Pradesh

(444), Gujarat (362), Madhya Pradesh (326), Tamil Nadu (272), Jharkhand (250), Chhattisgarh (201), Karnataka (178), Odisha (173), Maharashtra (150), Telangana (145) and West Bengal (120). These 12 States together accounted for 94% of total number of mines in the country in 2015-16. Among them, 575 mines belonged to coal & lignite, 595 to metallic minerals and 2,148 to non-metallic minerals.

Mineral Policy in India

Prior to 1993, the mineral sector was guided by the Industrial Policy Resolution of 1953. In pursuance of the reforms initiated by the Government of India in fiscal, industrial and trade regimes, the first National Mineral Policy was enunciated in March, 1993 which ushered in liberalization in the mining sector. The National Mineral Policy recognized the need for encouraging private investment including Foreign Direct Investment (FDI), and for attracting state-of-art technology in the mineral sector. The policy stressed that the Central Government, in consultation with the State Governments, shall continue to formulate legal measures for the regulation of mines and the development of mineral resources to ensure basic uniformity in mineral administration so that the development of mineral resources keeps pace, and is in consonance with the national policy goals.

Mining is a three-stage operation, involving regional exploration, detailed exploration, and actual mining. Regional exploration is mainly a survey activity to identify areas bearing mineral deposits. Detailed exploration is a little more invasive and can involve close spaced drilling (depending on the mineral) and substantial testing to establish commercially exploitable ore bodies. Mining projects, therefore, have a long gestation period requiring large investments in exploration and other development activities before commercial production can begin, and are thus considered as a high risk venture for the reason that a prospector's investment may or may not result in finds of commercially exploitable deposits. In India, investment has been lacking in such high-risk ventures and the exploration done by Geological Survey of India (GSI) continues to be the main basis for investment in mining.

In the mid-term appraisal of the Tenth Five-year Plan, it was observed that the main factors responsible for lack of adequate investments into the mineral sector were procedural delays in processing of applications for mineral concessions and absence of adequate infrastructure in the mining areas. As recommended in the mid-term appraisal of Xth five year plan, the Planning Commission constituted a High Level Committee (HLC) under the Chairmanship of Shri Anwarul Hoda, Member Planning Commission. Further, based on the recommendations of the High Level Committee set up in the Planning Commission, Government of India, in consultation with State Governments, the National Mineral Policy (NMP) was notified on the 13th March, 2008.

The restrictive approach of IPR was reflected in the Mines and Minerals (Regulation and Development) (MMDR) Act 1957, meant for the regulation and development of minerals in public interest, as well as in the Mineral Concession Rules (MCR) 1960 and the Mineral Conservation and Development Rules (MCDR) 1988 framed under it. Further, the MMDR Act 1957 was amended in order to enhance government control over mining including the power to reserve areas for the public sector enterprises. In 1988, the MCDR was also revised in order to enable the Central Government's technical agency IBM (Indian Bureau of Mines) to monitor and regulate mining activity. The severe regulatory regime of IPR and the MMDR Act 1957 and its Rules continued till the early 1990s. As late as August 1990, the National Mineral Policy, announced by the Government of India conferred on the State the exclusive or predominant responsibility for the development of mining and processing of specified minerals of basic and strategic importance. The public sector companies dominated the mining sector during the period. After sometime, there was an overlap of the government's powers to regulate the mining activity and its assumed responsibility to develop mines through government undertakings. It was basically the consequence of a public policy, existing in many developing countries in the 1960s and 1970s, that was concerned with retaining sovereignty over natural resources and therefore developing the mineral sector primarily through the public sector. In the limited area where private investment was allowed, the insistence was on retaining majority local ownership, with minimum (not more than 40%) of foreign participation[5].

Future Prospects in Mineral Sector

The economic sector policies have brought about pronounced changes in the industries policy, foreign trade, domestic production and international polices. The policy are aiming at increased production of minerals, improving energy efficiency reduction in cost and attracting domestic as well as foreign investment. Application of science and technology has resulted in exploration of new source, production as well as value addition. Research conservation through recovery of mineral by products and mineral tailings to increase the amount of product generation and reduce the amount of waste as well as to better understand the parameters that affect selective concentration and separation of fine mineral particles have been targeted. Future prospects include application of emerging technologies such as use of high temperature super conductors in underground communications that will make underground wireless networking a reality.

Conclusion

The mineral sector's contribution to India's GDP is around 2.39 per cent in the present year 2016 its and importance arises from the fact that it supplies basic and strategic raw materials for the country's industrial and economic development. India has extensive mineral resources, produces as many as 84 minerals and is among the world's leading producers of a number of minerals. However, whereas its reserves of bulk or surface minerals (like iron ore, manganese and bauxite) have been explored and are being exploited, exploration and exploitation of base and noble minerals (like lead, zinc, copper, nickel, gold and silver) must receive greater attention in the future. Due to the sharp rise in prices and demand of a number of mineral commodities, the production of many minerals has shown steady increase, both in quantity and value since 2015-16.The Indian mineral industry has a complex structure comprising large and small mines, public and private sector enterprises as well as an informal sector that covers most minor minerals being extracted in the states. There are a large number of individuals (proprietors), partnership firms and private limited companies among mining concessionaries in the private sector, which is, however dominated by a few large public limited companies. Many mines (in case of bulk minerals like limestone, bauxite and iron ore) operate as captive to the relevant mineral-processing industries. A large number of very small mining operations (including those for minor minerals) are dotting the country's mining landscape with serious adverse consequences for the environment. The public sector continues to play a dominant role in various mineral sub-sectors (such as coal, lignite, petroleum, iron and steel, bauxite and aluminum production) accounting for nearly 74 per cent of the total value of mineral production in 2015-16.

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A STUDY ON OVERALL PERFORMANCE OF CO- OPERATIVE BANKS IN TRIVANDRUM DISTRICT

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ABSTRACT

Co-operative bank is a component of the Indian banking organizations, originated in India with the enactment of the co-operative for the formation of co-operative credit societies act of 1904 which provided for the formation of co-operative credit societies. Under the act of 1904, a number of co-operative credit societies were started. Owing to the increasing demand of co-operative credit, a new act was passed in 1912, which provided for the establishment of co-operative central bank by a union of primary credit societies and individuals.

Key words: *Co-operative bank, credit societies, Indian banking, apex bank, thrift , savings*

Introduction

A co-operative bank has been defined as an agency which is a position to deal with the small man on this ocean terms accepting the security without drawing on the protection of the rich. This bank promotes economic activity and provides banking facility and service to the rural peoples. Co-operative banking is the means to promote thrift and savings and services and profit is not the chief motto. In 1914, the Meclagan committee was appointed to examine the co-operative movement and make recommendations regarding the improvement of the bank. It recommended the establishment of a state co-operative apex bank. On this recommendation central co-operative bank was established in Bombay. Other provinces also took action on similar lines.

Functions of Co-operative banks

Basically Co-operative banks are different from a productive society, because it does not under take on its own, but assists the member in improving their production. The Co-operative bank has, thus the following functions to perform.

(a) It encourages thrift and savings among the members so as to make them sufficient.

(b) Provides short and medium term loans to the farmers.

(c) Attracting deposits from non-agriculturalists,

(d) Using excess funds of some societies temporality to make up for shortage in others,

(e) To Supervise and guide the affiliated societies.

Types of deposits

The Co-operative bank has continued to

make efforts towards augmenting their deposits. They are.

Methodology

This present study to analyse the overall performance of Co- operative banks in Trivandrum district. This paper is mainly based on secondary data collected from various reports that are published by Co-operative banks, journals, periodicals, related books and websites. The study covers the period of ten years from 2005-06 to 2014-15. The use of statistical tool helps to analysis the overall performance of Co- operative banks in Trivandrum district under study in an accurate manner. Statistical tools like CAGR (Compound Annual Growth Rate), simple percentage analysis etc., are used for satisfying the above objectives.

Scope of the study

Indian financial system consists of (i) financial intermediaries (ii) Financial markets and (iii) Financial assets / Instruments. Financial intermediaries include banks, NBFCs, Mutual funds and insurance organization. Banks consist of commercial banks, regional rural banks and co-operative banks. Here the researcher focused more on the district co-operative banks from co-operative sector. Co-operative institutions are working as service oriented institutions. They give more help to the general public especially to the local public. Because local public consider co-operative banks as neighbor concern, because they can approach these banks easily for any financial help they needed. They can get loan and assistance for starting new ventures and especially for social benefits.

Objectives of the present Study

The specific objectives of the study are:

1. To trace the history and growth of co-operative bank.
2. To analyze the deposits mobilization, pattern of deposits and their growth.
3. To study the lending performance of the bank.
4. To analyse the profitability performance of the bank and
5. To offer suitable suggestions for improving the performance of the bank on the basis of the findings of the study.

Taluks	Total No. of Co-operative Bank
Nedumangadu	25
Neyyattinkara	43
Thiruvananthapuram	27
Chirayinkil	22

Table 1 Total number of Co-operative banks in Trivandrum District

Source: District Co-Operative Bank

The data has been collected on secondary basis. Ten years data of co-operative bank had been collected in Trivandrum district. This data help us to analyze the growth rate of certain particulars and an over view about the Co-operative banks

Years	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
No. of members	1422	1576	1576	1576	1597	1597	1622	1642	1669	1741

Table 2 Total number of members in district co-operative banks for ten years

Source: District Co-Operative Bank

The total members of district co-operative banks show an increasing trend in the overall years. More members are added to the co-operative bank every year.

$b = n\Sigma t \log ye-(\Sigma T) \ \ S\log ye$

$n\Sigma t^2 - (\Sigma t^2)$

$= 10 \times 176.7676 - (55)\ 32.0403$

$3850-3025$

$= 5.4595$

$= 825$

$C.G.R = [\text{anti} \log (\log b) - 1] \times 100$

$= -74.25$

The Compound Annual Growth Rate for

total number of members in district co-operative banks for ten years for -74.25 per

Years	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Total deposits	110865	113381	13544	155831	207144	235768	268717	297601	348835	429729

cent respectively.

Table 3 Total Deposits of Co-operative bank for ten years

Source : District Co-Operative Bank

While comparing the amount of total deposits in the district co-operative banks, during 2005-2006 total deposit is Rs.110865 lakhs and 429729 lakhs during 2014-2015. From the table it is clear that a total amount of deposit is increasing continuously.

b = nΣt log ye-(ΣT) Slog ye

$n\Sigma t^2$ - (Σt^2)

= 10 x 298.147– (55) 53.1922

10 x385-(55^2)

= 2981.47 – 2925.571

3850-3025

= 55.899

825

= 0.067756363

C.G.R = [anti log (log b) – 1] x 100

= (1.07010456 -1) x 100

= 7.010456

The Compound Annual Growth Rate for

Years	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Total loan	101663	115840	122629	125078	141883	184797	206811	230259	258706	269469

total deposits in district co-operative banks for ten years for 7.010456 per cent respectively.

Table 4 Total Loans Issued by the Co-Operative Bank in Trivandrum District

Source: District Co-operative Bank

While comparing the total amount of loan provided by the District co-operative bank, during 2005-2006 total amount is Rs.101663 lakhs and 269469 lakhs during 2014-2015. Even though there is an increasing trend a slight difference only can be seen.

b = nΣt log ye-(ΣT) Slog ye

$n\Sigma t^2$ - (Σt^2)

= 10 x 291.274 – (55) 52.196

10 x385-(55^2)

= 2912.74 –2870.78

3850 – 3025

= 41.96

825

=0.050860606

C.G.R = [anti log (log b) – 1] x 100

= (1.052176216 -1) x 100

=5.2176216

Si. No.	Period	Individual	Societies
1	15 days to 45 days	6.25	6.50
2	46 days to 90 days	7.00	7.25
3	91 days to 179 days	7.75	8.00
4	180 days to 364 days	8.25	8.50
5	1 year and above (below 2 year)	8.75	9.25
6	2 year & above	8.50	8.75

The Compound Annual Growth Rate for total loan issued by the district co-operative banks for ten years for 5.2176216 per cent respectively.

Table 5 Interest rates on fixed deposits (in percent)

Source: Annual Report

Years	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Total Borrowings	13642	25176	22412	14330	19194	14277	20158	21514	15353	28017

This table shows that the interest rate on fixed deposits. Fixed deposit provides customers with a higher rate of interest that a regular savings account, until the given maturity date.

Table 6 Total Borrowings of the Co-operative Bank of ten years

Source: District Co-operative Bank

An increasing and decreasing trend can be seen in the case of borrowings during the years. A vast difference can be seen in the last two years.

b = $n\Sigma t$ log ye-(ΣT) Slog ye

$n\Sigma t^2$ - (Σt^2)

= 10 x 235.8979 – (55) 53.1922

10 x385-(55^2)

= 2358.979 – 2925.571

3850-3025

= -566.592

825

= - 0.686778181

C.G.R = [anti log (log b) – 1] x 100

Sl.No	Name of Loans	Amount
1.	Educational Loan	Up to 5 lakhs
2.	Aswasa Loan	Up to 1 lakhs
3.	Asraya Loan	Up to 5 lakhs
4.	Gold Loan	Up to25 lakhs
5.	Agricultural Gold Loan	Up to 1 lakhs
6.	Overdraft against gold	Up to25 lakhs
7.	Vehicle loan	Up to80 lakhs
8.	Consumer Loan	Up to 50000
9.	Consumption loan	Up to3lakhs
10.	Housing loan-(construction of new house))	Up to25 lakhs
11.	Housing loan-(house maintenance)	Up to 5 lakhs
12.	Magaliasutra loan	Up to 25000
13.	Mortage loan	Up to 40 lakhs
14.	Pensioner loan	Up to 1 lakhs
15.	Land development loan	Up to 10 lakhs
16.	Employees loan	Up to 5 lakhs
17.	Business Constructors cash credit	Up to 40 lakhs

= (0.503194662 -1) x 100

= - 49.6805338

Years	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Total Profits	62	113	142	162	66	274	304	309	338	1022

The Compound Annual Growth Rate for total borrowings of the district co-operative banks for ten years for - 49.6805338 per cent respectively.

Table 7 Types of Loans

Table 8 Net Profit of Co-operative bank in Trivandrum district

Source: District Co-operative Bank

It is clear that there is a decreasing trend in the total profit during 2009-2010 and an increasing trend in 2014 -15. The overall co-operative bank earn as much as profit during the years.

b = $n\Sigma t$ log ye-(ΣT) Slog ye

$n\Sigma t^2$ - (Σt^2)

= 10 x135.0519 – (55) x 22.9703

10 x 385-(55^2)

= 1350.519 – 1263.3665

3850-3025

= 87.1525

825

= 0.105639393

C.G.R = [anti log (log b) – 1] x 100

= (1.111421018 -1) x 100

= 11.1421018

Particular	Members	Deposits	Borrowings	Loans	Net profit
Compound Growth rate	-74.25	7.0106	-49.680	5.217	11.14

The Compound Annual Growth Rate for net profit of the district co-operative banks for ten years for 11.1421018 per cent respectively.

Table 9 Compound Growth Rate of total members, total deposits, total borrowings, loans and net profits of Co-operative bank in Trivandrum district from 2005-2006 to 2014 – 2015

It could be observed from the above table shows that the growth rates of total members of the co-operative banks are -74 .25 per cent and borrowings of the co-operative bank is -49.680 per cent. On the other hand an increasing trend of growth rate can be seen in deposits, loans and profits such as 7.01 per cent, 5.217 per cent and 11.14 per cent respectively.

Findings

The goal of Co-operative bank is to provide strong and social safety for the vulnerable group by providing better services, while other bank have high rate of interest loan, which is affordable for the normal people. The present study an overall performance of co- operative banks in Trivandrum district during 2005-2006 to 2014-2015, the number of members increased from 1422 to 1741, total deposits of the co-operative banks increased from 110865 to 429739 lakhs, loan issued of the co-operative banks increased from 101663 to 269469 lakhs, total borrowing of the co-operative banks increased from 13642 to 28017 lakhs and net profit of the co-operative banks increased from 62 to 1022 lakhs due to reorganization and amalgamation of societies after 2005 – 2006.

Suggestions

- The bank should adopt the modern methods of banking like internet banking, credit card, Automatic Teller Machine.
- The bank should plan to introduce new scheme for attracting new customers and satisfying the present on.
- The Co-operative bank should cover more areas to enrich the habit of thrift.
- The bank should improve the customer service to a greater extent.
- More awareness programs should be planned among the backward communities to spread the Co-operative banking scheme among them.
- Ensure strict and social audit to prevent corruption in enforcing the functions of the bank.
- RBI must give special preference to the Co-operative banks in the provision of credit facilities.
- The bank should formulate the appropriate recovery programme for reducing the overdues from the borrowers.

Conclusion

Even though a less growth rate seen in members and borrowing particulars, a considerable growth rate can be seen in other particulars such as deposits and loans. This leads to a steady growth rate of co-operative bank in Trivandrum district. The co-operatives are functioning for the economic welfare and well-being of the people in the state. Co-operative banks have an important role in the socio economic development of the society.

The various types of co-operatives functioning in the state are assisting the people practicing different types of economic activities. Co-operative movement has become an inseparable one with the people in the state and instrumental in several achievements. Co-operative bans in India have played a unique role in financing farmers and alleviating poverty.

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A STUDY ON PROBLEMS FACED BY MILK PRODUCERES OF NEIKKARAPATTI VILLAGE IN SALEM DISTRICT

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ABSTRACT

Animal husbandry in India is an integral and interwoven part of traditional agriculture and plays an important role in the rural economy. Milk producers in India are characterized by low yielding non-descript cows and buffaloes. Millions of small producers with little or no land holdings, use of crop residues and natural herbage with or without costly concentrates as cattle feed. The present study has been taken to find out the "The Problem faced by the milk producers in Neikkarapatti village of salem". Convenience sampling techniques was used. The population being legal and the project where initial it was divided to choose these particulars techniques. 50 responders is their was directly into viewed. The Government must initiate steps to manufacture various end products of milk like peadas, pannier, packed curd, quality butter milk which may become sometimes as alternative to other soft drinks in the market in hot countries like ours.

Keywords: Animal husbandry, cows, buffaloes, milk production, livestock sector, Operation Flood

Introduction

Animal husbandry in India is an integral and interwoven part of traditional agriculture and plays an important role in the rural economy. It is closely interlinked with the socioeconomic matrix of rural society. The development of livestock sector has been receiving significant priority in India in the last two to three decades. The mulching cow and dairy farming act as an agency in providing nutritive food materials, bullocks also used for draught power in agriculture and for transportation of agricultural commodity in areas where the mechanical transports are not operational. Milk contributes more to the national economy than any other farm commodity –more than 10.5 billion dollars in 1994-95 (Dairy India 1997). The Dairy development programme commonly known as "Operation Flood" ("OF") was launched in 1970 to develop a self-sustaining national dairy industry on co-operative basis. Dairy farming one of the most important economic activities in the rural areas in India.

Dairy Industry in India

India is one of the largest milk and milk products producing countries in the world. The country's milk production increased from around 20 million tonnes in 1960s to 121.50 million tonnes in 2011. The per capita availability (281g/day in 2010-11) is almost equal to the requirement of 280g/ day. The State was placed between eighth to ninth position in the country in overall milk production in the last 10 years.

Milk production in India		
Year	Production (Million Tonnes)	Per Capita Availibilty (gms/day)
2007-08	107.9	260
2008-09	112.2	266
2009-10	116.4	273
2010-11	121.8	281
2011-12	127.9	290
2012-13	132.4	N/A

Source: Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture, Goi

Statement of The Problem

Milk producers in India is characterized by low yielding non-descript cows and buffaloes. Millions of small producers with little or no land holdings, use of crop residues and natural herbage with or without costly concentrates as cattle feed. The average milk productivity of a cow in India is very low. Increase in animal productivity is to be achieved through upgrading of breeds and better feeding and grazing practices. While efforts have been steadily made to increase the milk productivity and the efficiency of the dairy processing industry. Increase in milk production is expected to be primary through the increase in milk productivity rather than the number animals. Today, almost all the people are consuming milk and milk products.The present study has been taken to find out the "The Problem faced by the milk producers in Neikkarapatti village of salem".

Research Questions

1. What are the characteristics of milk producers in the study area?
2. What is the cost and profitability of milk production in the study area?
3. What are the channels of marketing adopted by the milk producers in the study area?
4. What are the problems faced by the milk producers in study area?

Objectives of the Study

To study the characteristics of the milk producers in the study area.

To analyse the problems faced by the milk producers in the study area.

To find out the capital requirement of the milk producers in the study area.

To know the availability of loan facilities for the milk producers.

To identify the level of satisfaction about milk producers in the study area.

Hypotheses of the Study

- There is no significant relationship between age of the respondent and level of satisfactions about milk distribution services.
- There is no significant relationship between gender of the respondent and level of satisfactions about milk distribution services.
- There is no significant relationship between occupation of the respondent and level of satisfactions about milk distribution services.
- There is no significant relationship between educational qualification of the respondent and mode of getting loan.
- There is no significant relationship between annual income and subsidy for cow feedings.

Research Metholodogy

Population of the study:

The study constitutes 50 respondents of preference of search engines among the college students in Salem city.

Sampling Techniques:

Convenience sampling techniques was used. The population being legal and the project where initial it was divided to choose these particulars techniques. 50 responders is their was directly into viewed.

Data Collection:

Most of the information is through primary data of the study.

Data Analysis:

Interpretation of the data and analysis was conducted means Percentage, Chi-Square test, F-Test, and Correlation.

Questionnaire Design:

Questionnaire is used to interview respondent while family the questionnaire care was taken to ensure that as possible. It was clear and unambiguous. The attitude perceptions of the respondents were collected with reference to the valuables information available in the internet.

Data Collection Methods

1. Primary Data

Primary data are those which are collected for the first time and they original in character these are collected by the researcher himself to study a particular problems.

2. Secondary Data

The secondary data are those which are already collected by someone for some purpose and are available for the present study. For instance, the data collecting during census operations are primary data to the department of census and the same data, if used by a research worker for some studies, become secondary data.

Sampling Desing

The sample of 50 questionnaires were collected by following convenient sampling method the entire analysis is clearly in a started by means of pie diagram charts and graphs in the appropriate places.

Statistical Tools Used for The Study

The data collected were tabulated and analyzed by applying statistical tool are

1. Simple percentage methods. 2. Chi-square test methods. 3. 'F' Test methods.4. Correlation

Review of Literature

Sarker et al (2008)[1] studied and analyzed the cost, return and relative profitability ofCooperative and non-cooperative milk producers' societies of West Bengal by ratio analysis and calculated Gross profit, Net profit, Overall profitability, EBIT, etc. The study has revealed that cooperative farms have much higher profitability than non cooperative farms.

Patil (1991)[2] explored Karnataka State Cooperative Milk Producer's Federation Ltd and its impact on Dairy Development by using different ratios such as, solvency, liquidity, profitability, turnover and efficiency, etc. The study revealed that there was a decreasing trend in the liquidity ratio due to accumulation of fixed assets.

Profile of The Study Area

Salem is located at 11.669437°N 78.140865°E. The average elevation is 278 m (912 ft). The city is surrounded by hills on all sides, namely, Nagaramalai in the north, Jarugumalai in the south, and Kanjamalai in the west, Godumalai to the east and the Shevaroy Hills to the north east. The Kariyaperumal Hill is situated within the city to the southwest. Thirumanimuthar River flows through the city, dividing it into two parts. The fort area is the oldest part of the town. Salem local planning area extends up to 100 km2 (39 sq mi) within the city. Salem Steel Plant, a special steel unit of Steel Authority of India Ltd have their plant located in Salem which produces Cold rolled stainless steel and Hot rolled stainless steel/carbon steel. Expansion and modernization of Salem Steel Plant is presently on. The plan envisages installation of Steel Melting and Continuous Casting facilities. Southern Iron & Steel Company Ltd (JSW Steel) has their first integrated steel plant located Salem for the production of TMT corrosion resistant bars / alloy steels.

Data Analysis And Interpretation About The Problem Of Milk Producers

Table No.1

S.No.	Age [years]	No. of Respondents	Percentage
1	Below 20	0	0
2	20-30	6	12
3	30-40	14	28
4	Above 40	30	60
	TOTAL	50	100
S.No.	**Occupation**	**No. of Respondents**	**Percentage**
1	Agriculture	28	56
2	Business	0	0
3	Private employed	21	42
4	Govt	1	2
	TOTAL	50	100
S.No.	**Occupation**	**No. of Respondents**	**Percentage**
1	Agriculture	28	56
2	Business	0	0
3	Private employed	21	42
4	Govt	1	2
	TOTAL	50	100
S.No.	**Experience**	**No. of Respondents**	**Percentage**
1	Below 3	9	18
2	3 to 5	16	32
3	5 to 7	11	22
4	Above 7	14	28
	TOTAL	50	100

Source: Primary Data

Table No. 1 shows that the great majority of the respondents (60%) belong to the age group of above 40 years followed by 28 percentage of the respondents are belonging to the age group between 30 -40 years next 12 percent of the respondents are belonging to the age group between 20 – 30 years finally 0 percent of the respondents are belonging to the age group below 20 years.

Regarding occupational status of the respondents, the majority of the respondents (56%) are agriculture, forty two percent of the respondents are private job holders, two percent of the respondents are Govt. job, Zero percent of the respondents are business.

32 percent of the respondents are having experience between 3-5 years in milk production followed by 28 percent of the respondents are having experience above 7 years, whereas 22 percent of the respondents are having experience between 5-7 years in milk production finally 18 percent of the respondents are having experience below 3 years in the study area.

Level of Satisfaction About Milk Producers Services

Table No.2

S.No.	Opinion	No. of Respondents	Percentage
1	Highly satisfied	18	36
2	Satisfied	28	56
3	No opinion	0	0
4	Dissatisfied	4	8
5	Highly dissatisfied	0	0
	TOTAL	50	100

Source: Primary Data

The above survey reveals that fifty six percent of the respondents are satisfied with milk produced services, thirty six percent of the respondents are highly satisfied with milk produced services, eight percent of the respondents are dissatisfied for the milk production services, zero percent of the respondents have to the no opinion and also highly disagree with milk production services in the study area.

Findings of the Study

There is a significant relationship between age of the respondent and level of satisfactions about milk distribution services. There is a no significant relationship between gender of the respondent and level of satisfactions about milk distribution services. There is a significant relationship between occupation of the respondent and level of satisfactions about milk distribution services. There is a significant relationship between educational qualification of the respondent and mode of getting loan. There is a significant relationship between annual income and subsidy for cow feedings. There is a significant relationship between experience in milk distribution and level of satisfaction about milk distribution services.

There is a significant relationship between annual income and level of satisfaction about milk distribution services. There is a significant relationship between marital status and level of satisfaction about milk distribution services. There is a no significant relationship between number of cow owned and requirement of investment of cows. There is a no significant relationship between educational qualification and type of milk distribution.

Suggestions for the Study

In spite of some developments in milk marketing, milk marketing in India remains grossly primitive compared to its western counterparts. It begins with the largely unregulated sector, which handles the majority of the milk production, providing ample opportunity for malpractice. Producers bargaining power is also limited because of perish ability and bulkiness of milk. Better operational efficiencies are needed to improve yield, reduce waste, minimize fat and proteins losses during processing, control production cost, save energy, and extend shelf-life. Restructuring the Government's legal and regulatory frame work, thus liberating the co-operative movement, will enable milk producers to extensively adopt the milk producers problem.

Conclusion

In Tamilnadu, dairy farmers were faced with rise in cost of production as fodder (Paddy and strew) the price has gone up by cent percent. There has been constant demand by the producers to provide incentives systems. If the price of milk is not raised, there would be undue decrease in production of milk is the coming years. Most of the government projects for the welfare of rural people ward turn if proper system is not formed to address this issue. Milk production issues need to be resolved in serious manner over a period of time so as to meet the rising demand. The problems of the milk marketing and livelihood in Neikkarapatti village are serious and remedial measure should be taken to overcome these problems.

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MARKETING HARDSHIPS FACED BY COIR MANUFACTURES IN KERALA: A STUDY WITH REFERENCE TO ALAPPUZHA DISTRICT

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ABSTRACT

Coir industry is approved as an important traditional as well as agro-based cottage industry. Green coconut husk is the basic raw material used in the industry. It simply transform coconut husk, a waste, into wealth. It carries greatest social and economical significance in state like Kerala where one third of the villages are coir villages. It is also found to be a rapid moving industry in neighboring states like Tamil Nadu, Andhra Pradesh, Karnataka, West Bengal and Orissa where coconut cultivation is large. Coir industry provides employment and income to the thousands of people belonging to socially and economically weaker section of the rural population. The greater significant of coir industry is that it based on local raw materials, skills and technology, coir products have wide range of domestic and export market also. The abundant supply of the basic raw material (husk) in the local/ domestic market is the contributory factor for the significant growth of coir industry in Kerala. Among the states in India, Kerala is the largest producer of coconut. Which ensures the steady in supply of husk. The industry in Alappuzha District, Kerala, also facing the mentioned the serious- problems seen at the macro-level but at varying degrees. Hence, this study is an attempt to study major marketing problems faced by coir manufactures in Alappuzha.

Keywords: *Coir, Fibre, husk, ship cables, marketing infrastructure,*

Introduction

The coir industry has very long history in India. In eleventh century the Arab writers mentioned about the wide use of coir as the ship cables. After the establishment of first coir factory in 1859 at Alleppey District viz Darragh Smail and Company by Mr. James Darrah, an American of Irish origin with the support of the foreign trader called Hentry Smail, India witnessed an astonishing growth in the area of coir. Since that historical moment eminent corporate entities had come forwarded and established number of coir factories in Alappuzha, Kollam, Kochi, Kozikode and other parts of the Kerala. Coir industry is approved as an important traditional as well as agro-based cottage industry of Kerala. Eco-friendly and natural image of coir, coir products have great extent of universal acceptance, strong marketing argument and export orientation. The golden textured Indian coir fibre, which has earned the unofficial brand name Golden Fibre, captured the

European and world markets. Today, India is the leading coir manufacturer in the world. Annual Report of Coir Board of India reveals that Since the "Alleppey Coir' has been awarded the prestigious Geographical Indication tag, Kerala coir products have an impressive growth in both domestic and foreign market. At present, coir industry has a phenomenal share of 89 per cent of the global market for value-added coir products. World production of coir fibre is estimated at 3,85,000 tonnes whereas the combined world production of other similar hard fibres such as sisal, henequen and abaca is two to three times that of coir fibre.

Review of Literature

Madhubrata Rayasingh and Sudhir Kumar Mishra [2010] covered certain relevant areas behind the setting up of coir industry like location factors, the various processes in the manufacture of coir and coir Products and marketing etc. The study insisted that due to the ecologically safe and sensitive nature of coir, it can spin impressively much foreign money. The aim of study was to evaluate whether the eco-friendly nature of coir products can influence the sustainable growth of the coir industry.

Ajith Kurnar [2001] in his another articles, explain the reasons for decreased demand of coir yarn in U.SA, which was the major market for coir yarn in the globe. The reduction in the area under hop cultivation, as a consequence of the use of high yielding hybrid varieties is one of the reasons for the reduced of take of coir yarn. Another reason is lack of competition in Indian coir industry, and its continued use the traditional method of production which could not withstand the competition from Sri Lanka in the U.S.A. market and he broke the Indian monopoly in the matter of supply of coir yarn for Hop cultivation.

Mohanasundaram [2015] in his article attempt to throw light on certain specific areas of the working of the coir units located in Thanjavur District of Tamil Nadu. The study highlights the problems confronting the industry like inadequate finance to meet the increasing cost of production, non-availability of raw material such as coconut husk in the years with scanty rainfalls, obsolete production technology, difficulties in the adoption of modern technology, labour scarcity during the harvesting periods of agricultural crops, absence of an effective marketing system, lack of marketing infrastructure, concentration of markets and demand in select regions, irrational selection and mismanagement of human resources in all its functional areas, environmental problems and unhealthy competition between mechanised units and non-mechanised units and lastly the not-so encouraging government support.

Gouri Amma (2005) in her article on Modernization of Coir Industry stated that in the last financial year the industry earned more than Rs.450 crore as foreign exchange and created more employment in the rural areas. The industry had its root in the rural area and since mostly women workers were involved at different stages of production, this industry had an added relevance in the national income. He concluded that coir workers, small and large manufacturers, industrialists and exporters should work together and render their whole hearted support to the government for strengthening the industry.

Ramamurthy [2002], in his research theses gave a clear cut picture of the production and marketing prospects of the coir industry in Tamilnadu. The study revealed that being strong export-oriented from the beginning, it has been fetching enormous foreign exchange by offering more than 14 value added products for export. It undertook a detailed analysis of the cost and return of the production in the industry. The main objective of the study was to analyse the resource use efficiency of the units in the production of coir fibre for the small and the medium coir and to identify the existing marketing channels and cost of the channels.

Christy Fernandez [2003] in his seminar presentation give a wide picture about the export and domestic market scenario of Indian coir products. According to the presenter not more than 10% of the global output of \husk is utilized for coir fibre extraction. He viewed that there has been only marginal improvement in the production and structural pattern of coir products with the result that the new consumers particularly of the younger generation are not attracted to the too familiar products.

Kalamani [2006] in his seminar paper attempted to critically analyses the issues that are an offshoot of the open market regime pursued in the industry. It illustrated that intense competition between exporters for developed country suppliers along with imperfections in the factor markets has resulted in the downward pressure on producer prices. It concluded that increased competition has given rise to efforts to increase productivity and decrease costs, which have had negative impacts on employment and wages in imperfect market structures

K.Baskaran Unnithan[1970]1 in his book explains the status of Indian coir industry on the light of import and export of coir products. The aim of the study was to analyses the various marketing strategies prevailing in the Indian coir industry. His work stressed the requirement of the adoption of varies marketing mechanisms. The study also emphasized the need of exploiting innovative trading technologies. The report covered the governmental measures for the untapped growth of Indian coir industry.

Objective of The Study

This study was carried out with the following objective:

- To study the major marketing problems faced by coir manufactures in Alappuzha District

Research Methodology

Primary as well as secondary data used for the study. Primary data collected from the owners of Coir units in Alappuzha District through sample survey method. Well-structured and pre-tested interview schedule was used for collecting the data. The details of sample design and data analysis are described below.

Sampling Design

Both registered coir units and unregistered coir units are functioning in Alappuzha district. For the purpose of this study, only registered Coir units were taken. It accounted that there are 70653 registered coir units functioning in Alappuzha district. Among these 200 units were selected for the study.

Analysis of Data

For analysing the problems faced by coir industry in marketing, primary data were collected from the owners of coir units by using interview schedule. Primary data collected from them were analysed by applying Garrett's Ranking Technique.

Marketing Hardships of Coir Manufactures: An Analysis

The general problem like shortage of finance in any area of small scale industries coir industry in Alappuzha also suffers in marketing area. In spite of this an attempt has been made in the study to identify some peculiar and specific hardship faced by coir manufactures in Alappuzha District in connection with the marketing of coir products. The identified hardships are ranked by using the Garrett's Ranking Technique and the details are shown in Table 1.

Hardships	Mean Score	Rank
Lack of storage facilities	63.32	I
High price for raw materials	58.36	II
Inadequate market information	57.21	III
Lack of governmental support	54.71	IV
Product substitution	45.51	V
Heavy commission	35.42	VI

Table 1 : Marketing Hardships Faced by

The Coir Manufactures in Alappuzha: Garrett's Ranking Analysis

Source: Primary data

It could be observed from Table 1 that the Lack of storage facilities, High price for raw materials, Inadequate market information, Lack of governmental support, Product substitution and Heavy commission are the major hardships faced by coir manufacturers in the study area. It found to be the first and foremost problem is Lack of storage facilities with a mean score of 63.32. Another problem relating to raw materials. Owing to the shortage of fibre in the study area, it mainly purchased from varies districts in Tamil Nadu like Thanjavur and Koyampattur. As fibre procure from these distant places they have to incur heavy transport expenses. There for coir manufactures in the Alppuzha forces to fix a high price. The high price some time leads decrease in demand for the coir and coir products. There for High price for raw materials is the next important marketing hardship faced by the coir manufactures with a mean score of 58.36.

Inadequate market information was ranked third with a mean score of 57.21. The activities of government agencies to look after the marketing functions of coir and coir products in the study area found to be less effective. Lack of governmental support was placed in fourth with a mean score of 54.71.

Product substitution is the another market hardship encountered by the coir manufactures in the study area with a mean score of 45.51. The penetration of plastic made coir products creates challenging environment in the market. The high commission paid is also another major hardship as more intermediaries were involved in marketing of coir fibre which stood in sixth place with a mean score of 35.42

Finding of The Study

In this study, marketing hardship faced by coir manufactures are examined in detail. For identifying the major marketing hardships in coir units, Garrett's Ranking Technique was used. The findings of the study are:

Marketing hardships faced by coir manufactures were analysed and six major hardships like Lack of storage facilities, High price for raw materials, Inadequate market information, Lack of governmental support, Product substitution and Heavy commission

From the findings, it is concluded that the most significant marketing hardship faced by the coir manufactures in Alappuzha is Lack of storage facilities.

Suggestion of The Study

On the basis of the finding of the study the following viable suggestion is offered for the improvement of the marketability of the manufactures

In this study, it is found that Lack of storage facilities is the major marketing problem faced by coir manufactures in the Alappuzha. In addition the availability of the domestic fibre, exorbitant quantity of fibre brought from other coir producing states in India. Hence it is suggested that the State Government and Coir Board may consider this and establish well equipped warehousing centers in varies regions of the study area. It is also suggested that the Government may extend support to the existing entrepreneurs and new entrepreneurs to build up private warehousing centers in the area.

Conclusion

The coir industry was chosen for study because of its social and economic relevance as far as the economy of Kerala state is concerned. The industry provides employment for the vast numbers of disempowered social sections, mostly of the lower castes and outcastes, an overwhelming majority of them are women. The greater significant of coir industry is that coir products have wide range of domestic and export market also. Eco-friendly and natural image of coir, coir products have great extent of universal acceptance, strong marketing argument and export orientation. In order to meet the growing demand of coir products in domestic as well as in foreign market, at present coir industry produces and distributes varies types of value added products under the category of Geo-Textails, Horticultural and Industrial

In the present scenario of the coir industry, the researcher gently attempt to throw light on certain distinguishable problems prevailing in the area of marketing of coir in Alappuzha District of Kerala. The industry has every scope to make an indelible mark in the industrial map of Kerala and could finally contribute to the economic development of the country.

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DEBTOR MANAGEMENT – AN EMPIRICAL STUDY

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ABSTRACT

Debtor management is central to the effective cash flow of the business. Without an effective debtor control system, the organisation leaves finances vulnerable. Debtor Management is to occupy an important position in the structure of current assets of a firm. It helps to realize sales, which lead to larger profits. This study examined empirically on debtor management at Auroma Leather Craft Pvt. Ltd., Puducherry. The main aim of this research is to understand the current position of debtor management and to find out various techniques of debtor management applied in an organization. The research is based on through secondary data. This research has used the techniques to evaluate the Debtor Management of their Financial position and to calculate the tools used Ratio Analysis and Working Capital. These objectives are achieved by using ratio analysis and working capital, then arriving at conclusions, which are important to understand the efficiency / inefficiency of debtor management.

Keywords: *business, debtor management, financial position, current assets.*

Introduction

Accounts receivables are amounts owed to the business enterprise, usually by its customers. Generally, when a concern does not receive cash payment in respect of ordinary sale of its products or services immediately in order to allow them a reasonable period of time to pay for the goods they have received. The firm is said to have granted trade credit. Trade credit, thus gives rise to certain receivables or book debts expected to be collected by the firm in the near future. In other words, the sale of goods on credit converts finished goods of a selling firm into receivables or book debts, on their maturity these receivables are realized and cash is generated. According to Prasanna Chandra, "The balance in the receivable accounts would be; average daily credit sales x average collection period." Receivables are a type of investment made by a firm. Like other investments, receivables to feature a drawback, which are required to be maintained for long that it's known as credit sanction. Credit sanction means tying up of funds with no purpose to solve yet costing certain amount to the firm. Such costs associated with maintaining receivables are - Administrative Cost, Collection Cost, Capital Cost, Delinquency Cost and Default Cost. Receivables are one of the three primary components of working capital, the other being inventory and cash. Receivables occupy a second important place after inventories and thereby constitute a substantial portion of current assets in several firms. The capital invested in receivables is almost of the same amount as that invested in cash and inventories. Receivables thus, from about one third of current assets in India. Trade credit is an important marketing tool. It acts like a bridge for mobilization of goods from production to distribution stages in the field of marketing. Receivables provides protection to sales from competitions. It acts no less than a magnet in attracting potential customers to buy the product at terms and conditions favourable to them as well as to the firm. Receivables management demands due consideration not financial executive not only because cost and risk are associated with this investment, but also for the reason that each rupee can contribute to the firm's net worth. The size of receivables is determined by a number of factors for receivables being a major component of current assets. The study was conducted at Auroma Leather Craft Pvt. Ltd. that used the techniques to evaluate the Debtor Management of their Financial position to calculate the tools used Ratio Analysis and Working Capital. How for mapping useful for both the Ratio Analysis and Working Capital analyzed in this research.

Review of Literature

Kakuru Julius goes further to define credit policy as a set of polices of action designed to manage costs associated with credit, while maximizing the benefits from it. A firm may follow a limited or a stringent credit policy. Kakuru Julius identifies 2 types of credit policies; Lenient and Stringent Credit Policies. Pandey identifies 5C's of credit as a measurement in setting standards. The 5 C's includes; character, capacity, condition, capital, and collateral. Kakuru, also considers that factors like profit margin, cash flows, the acid test ratio of business, and the duration one has been in the business should be looked while analyzing capacity.Kakuru, gives a step by step procedure that is essential in collecting dues from slow paying customers and these include; reminders, final write-off, insuring debtors, and factoring of debtors.

Kakuru Julius, contends that, the only a way a firm can control its sales is through altering its credit policy. He says that credit policy is based on three controllable variables which are credit standards credit terms, and collection procedure. Van Horne emphasizes that, credit analysis considers the character of the company, its management and the financial strength of the firm in order to avoid imbalances. To him, credit analysis can be done by using techniques like credit scoring where characteristic of an applicant is quantitatively rated and credit decisions made on the basis of the total score. Characteristics like the marital status, level of education, occupational stability can be rated. According to Kakuru Julius credit limit is the maximum of credit the firm can extend to customers at any point of time. He suggests that the analyst should carefully sensitize the amount of contemplated sales and the customer's financial strength, and that if a problem arises, it may make it inevitable to review the credit limit.

Statement of The Problem

Every organisation is more typically concentrate with handling of debtor and cash management. The results of improper maintaining of cash flow are to meet with loss. All types of organisation are highly focused with cash management and debtor management. Hence this research has to fulfil the organisation that if any ineffective debtor management.

Objectives of The Study

- To understand the current position of debtor management.
- To find out various techniques of debtor management applied in the organisation.
- To identify the various factors influencing of effective debtor management.
- To give viable suggestions to improve the debtor management.

Need for The Study

Debtor management is central to the effective cash flow of the business. Without an effective debtor control system, the organisation leaves finances vulnerable. Small-to-medium enterprises are often guilty of failing to establish an appropriate debtor management system. Even if a company simply started with tallying debtor days, it's an important first step in the right direction and a key performance indicator that, ideally, businesses should monitor monthly. Debtor Management is to occupy an important position in the structure of current assets of a firm. It helps to realize sales, which lead to larger profits. To give relevant suggestions in order to improve the cash management and reduce a debtor level periodically.

Research Methodology

Research is defined as a careful, critical inquiry or examination in seeking facts or principles; diligent investigation in order to ascertain something. Research is essentially a systematic inquiry seeking facts through objective, verifiable method in order to discover the relation among them and to deduce from board principles or laws. It is really a method of critical thinking. The type of research adopted here is Descriptive research. The data used for this study to analyze the debtor management of Auroma Leather Craft Pvt. Ltd. Secondary data are the data which are already in existence and for this study, they are referred from the Journals, Company's website and Annual Report. The tools used for analysis of the debtor management of Auroma Leather Craft Pvt. Ltd. and selected competitor are Ratio Analysis, Working capital.

Tools Analysis and Interpretation

Leverage Ratio

Debt – Equity Ratio

Year	Total Liabilities	Shareholders' Equity	Ratio
2010-11	725.32	495.37	1.46
2011-12	1054.6	1049.84	1
2012-13	1570.3	3351.09	0.46
2013-14	191.65	151.58	1.26

Table 7.1 Debt-Equity Ratio

This ratio enables to ascertain the proportion of shareholders funds in a business. A low debt-equity ratio implies a greater claim of the owners than creditors. In the year of 2010-2011; it shows a ratio as 9:7 i.e., 1.46%, and the year of 2013-2014 it shows 1.26% of debt – equity ratio. From the point of view of creditors, it shows a satisfactory capital structure and hence the financial position is highly solvent.

Debt Service Coverage Ratio

Year	Operating Income	Total Debt Service Costs	Ratio
2010-11	765122	2816	271%
2011-12	472427	4652	1015%
2012-13	25139527	7225	3479%
2013-14	30751143	11472	2680%

Table 7.2 Debt Service Coverage Ratio

This ratio shows how many times the interest charges are covered by EBIT out of which they will be paid. The coverage ratio may be interpreted with reference to its degree. Higher ratio better is the position of long- term creditors. It also highlights the ability of the firm to raise in the year of 2012-2013 the 3497% additional fund in future.

Gross Profit Ratio

Year	Gross Profit	Net Sales	Ratio
2010-11	159.97	57.73	27.70%
2011-12	476.52	469.32	10.10%
2012-13	2523.92	2509.13	10.00%
2013-14	3091.31	3067.46	10.00%

Table 7.3 Gross Profit Ratio

Gross profit ratio shows the gap between revenue and trading cost. High gross margin ratio is considered better for the organisation. In the year 2010- 2011, it indicates a ratio of 27% which was considered good. And in the following years the gross margin profit shows a declining trend, hence the financial manager must deduct the causes of a falling gross margin and indicate and action to improve this situation.

Account Receivable Turnover

Year	Net Credit Sales	Average Accounts Receivable	Ratio
2010-11	142.73	57.73	30.47
2011-12	469.32	71.98	65.19
2012-13	2523.94	148.13	110
2013-14	3091.48	240.2	128

Table 7.4 Account Receivable Turnover

Receivables turnover ratio measures company's efficiency in collecting its sales on credit and collection policies. This ratio takes into consideration only the credit sales in the year of 2010- 2011 was 30.47. If the cash sales are included, the ratio will be affected and may lose its significance. It is best to use average accounts receivable to avoid seasonality effects. If the company uses discounts, those discounts must be taken into consideration when calculate net accounts receivable is good in the year of 2013-2014 the ratio is 128.

Average Collection Period

Year	Number of Working Days	Debtors Turnover Ratio	Ratio
2010-11	365	13.64	26.75
2011-12	365	13.15	27.75
2012-13	365	21.37	17.08
2013-14	365	22.89	15.94

Table 7.5 Average Collection Period

Receivables turnover ratio, average collection period is of significant importance when used in conjunction with liquidity ratios. A short collection period means prompt collection and better management of receivables in the year of 2011- 2012 of 27.75. A longer collection period may negatively effect the short-term debt paying ability of the business in the eyes of analysts. Whether a collection period is good or bad depends on the credit terms allowed by the company.

Inventory Turnover Ratio

Year	Cost of Goods Sold	Average Inventory	Ratio
2010-11	187.51	44.57	4.21
2011-12	280.52	330.46	0.84
2012-13	376.77	1829.65	0.20
2013-14	479.71	1558.33	0.30

Table 7.6 Inventory Turnover Ratio

Inventory Turnover Ratio measures company's efficiency in turning its inventory into sales. Its purpose is to measure the liquidity of the inventory. High inventory turnover ratio implies either strong sale in the Year of 2012-2013. A high inventory turnover ratio can indicate better liquidity, but it can also indicate a shortage or inadequate inventory levels, which may lead to a loss in business. High inventory levels are usual unhealthy because they represent an investment with a rate of return of zero. It also opens the company up to trouble if the prices begin to fall.

Woking Capital Turnover Ratio

Year	Revenue	Average Working Capital	Ratio
2010-11	187.51	101.39	1.84
2011-12	280.52	1013.91	0.27
2012-13	376.77	2911.8	0.01
2013-14	479.71	2724.87	0.01

Table 7.7 Woking Capital Turnover Ratio

Generally, a high working capital turnover ratio is better. A low ratio indicates inefficient utilization of working capital in the year of 2012-13 the level is 0.01 the same ratio in the year of 2013 -2014. The ratio should be carefully interpreted because a very high ratio may also be a sign of insufficient working capital.

Working Capital

Current Assets	2011	2012	2013	2014
Stocks	9732658	56360544	2095447	3095750729
Debtors	1374071	51608668	124095466	1763000
Bank	1378764	153995	205099920	20000000
Current Liabilities	**2011**	**2012**	**2013**	**2014**
Loan	3428647	202255490	57124529	153091735
Creditors	7253236	105455697	191651234	157030250
Working Capital (A-B)	1803610	-99587980	82515070	2807391744

Table 7.8 Analysis of Woking Capital

This balance sheet of the earlier period is not available, the amount current assets and current liabilities for the budget period should be ascertained on the basis of the given and deduct the current liabilities from current assets in order to get the estimated requirement of working capital. The effect on working capital from the year of 2011 to 2014 is same proportion.

Findings from The Study

From the study it was inferred that the debtor management calculated of research organisation, including Debt Equity Ratio, Debt Service Coverage Ratio, Gross Profit Ratio, Account Receivable Turnover, Average Collection Period, Inventory Turnover Ratio, Working Capital Turnover Ratio, Working Capital, for the last five years showed a decreasing trend in the long run of the company. Calculating the debtor management of the company using ratio analysis and working capital, has inferred that the debtor management of Auroma Leather Craft has been moderate in the last five years. From the study it was inferred that the overall debtor management of the company was satisfactory. The Overall debtor management was calculated using Ratio Analysis and its selected competitor. The overall debtor management of selected competitor was moderate when compared with Auroma Leather Craft Pvt Ltd.

Suggestions for The Study

The company should use the same proportion of current ratio and liquid ratio to avoid the idle use of assets. The company should utilize the cash balance and other funds in an optimum manner by the way of proper planning and using various control techniques. The company needs to improve on the sales revenue for the betterment of the working capital. The company should use equity capital for his long term obligations and it should, use debt capital for short term obligation.

Conclusion

Debtor's management is the process of decisions relating to the investment in the business**.** From the study is shows indicator of a positive relationship between debtor management of research organisation, which implies that more effective debtor management is required for the betterment of the organization performance. In organizations, although there are other ways of driving the business to success like competitive aggressiveness, visionary, leadership, trained staff and customer focus, debtor management provides a reflective of the past and a drive to achieve better performance for effective measurement. There is an indication of a positive relationship of between debtor and organizational performance in Auroma Leather Craft which implies that the more effective debtor management, the better organizational performance.

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A STUDY ON EMOTIONAL INTELLIGENCE AMONG COLLEGE FACULTIES OF BOTH GENDERS WITH SPECIAL REFERENCE TO COIMBATORE DISTRICT

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ABSTRACT

Education plays a vital role for the enhancement of an individual in order to face situation both in family and work in a balanced manner. For the successful teaching not only subject knowledge is essential, an effective skill is also very important. It is nothing but a combination of thinking and feeling. The study focuses on the level of Emotional Intelligence among college faculties working in the colleges affiliated to Bharathiar University in Coimbatore District. Descriptive research design was adopted in the study.

Keyword: *Emotional Intelligence, enhancement, social environment, behavioral dispositions*

Introduction

Emotional Intelligence plays a vital role in all situations which includes both in family and work place. In teaching, subject knowledge alone is not enough; every individual should possess effective skills. It is a combination of thinking and feeling. Goleman declared those skills as emotional intelligence (Goleman, 1995). Emotional intelligence is the ability to recognize one's own and other people's emotions, to discriminate between different feelings and label them appropriately, and to use emotional information to guide thinking and behavior (Coleman, Andrew 2008). There are three models of Emotional Intelligence. The ability model focuses on the individual's ability to process emotional information and use it to navigate the social environment (Salovey, Peter; Mayer, John; Caruso, David 2004). The trait model as developed by Konstantin Vasily Petrides, "encompasses behavioral dispositions and self perceived abilities and is measured through self report" (Petrides, Konstantin; Furnham, Adrian 2001). The final model, the mixed model is a combination of both ability and trait of emotional intelligence. It defines emotional intelligence as an array of skills and characteristics that drive leadership performance, as proposed by Daniel Goleman 1998. This study is based on the idea to know the level of the emotional intelligence among college faculties.

Review of literature

Kauts, A & Saroj, R (2012) studied on 600 secondary school to identify the relationship among emotional intelligence , teacher effectiveness and occupational stress .The result indicated that teachers with high emotional intelligence were having less occupational stress and more teachers effectiveness, whereas teachers with low emotional intelligence were having more occupational stress and less teacher effectiveness. Thus, emotional intelligence was found to be helpful in reducing occupational stress of teachers and enhancing their effectiveness in teaching.

Mousavi, H.S., Yarmohammadi, S., Nosrat, B.A., Tarasi, Z (2012) studied the relationship between emotional intelligence and its five components and job satisfaction of 215 physical education teachers. The result showed that there is a significant positive relationship between emotional intelligence and job satisfaction, between the components of social skills, empathy and motivation and job satisfaction. The study concluded that the job satisfaction of teachers can be increased by training and improving their emotional intelligence along with providing facilities and satisfying their needs.

Akomolafe (2011) made an attempt to study the interactive and relative effect of Emotional Intelligence and locus of control on burnout among the secondary school teachers and has suggested that secondary school teachers should be managed by capable and qualified counselors for the desired results to be achieved.

Krishnamurthy and Varalakshmi (2011) conducted a study to know the emotional intelligence of employees working in educational institution. A sample size of 200 teaching and non teaching staff was taken for study on the basis of demographic factors .Questionnaires were designed in five segments consists of personal information, adaptability, assertiveness, emotional management, self esteem and relationship of respondents. The result revealed that the improvement in emotional intelligence would increase the motivation and effectiveness of the employee.

Edannur,S (2010) assessed the emotional intelligence level of teacher's educators of barak valley region in the Indian state of Assam (India). The result showed that the group under study possessed average emotional intelligence. The gender and locality of the teacher educators did not make any differential influence on their emotional intelligence.

Amirtha and Kadhiravan (2006) found that gender, age and qualification influenced the emotional intelligence of school teachers.

Annaraja and Jose (2005) found that rural and urban B.Ed trainees did not differ in their self awareness, self control, social skills and emotional intelligence.

Suresh, T.and Rajalaxmi (2005) studied that there is no gender difference in emotional intelligence of teachers working in rural area and urban areas. Teachers from government schools are found to be better in their intelligence than teachers from aided and private schools.

Objective

To examine the level of emotional intelligence among faculties working in college

Methodology

The study is descriptive in nature. Male and female working as a faculty in colleges affiliated to Bharathiar University was selected for the study. 50 respondents were selected randomly from the colleges. The tools used for data collection was based on review of literature. Simple frequency, mean, standard deviation was done in the study.

Analysis and Interpretation

Level of Emotional Intelligence among Male and female faculties

Faculties	Low	Moderate	High	Mean	SD
Male	20.0	56.0	24.0	2.04	.676
Female	28.0	56.0	16.0	1.88	.666

As observed from the above table more than half of the male and female faculties' levels of emotional intelligence are at moderate level. Nearly one-third of the male faculties are comparatively high in level of emotional intelligence than female faculties.

Overall analysis

Level of Emotional Intelligence

Faculties	Percent	Mean	SD
Low	24.0	1.96	.669
Moderate	56.0		
High	20.0		

The overall analysis of the above table shows that more than half of the respondents' levels of emotional intelligence are at moderate level. Nearly one third of the respondents' levels of emotional intelligence are at low level.

Conclusion

Emotional intelligence plays a vital role in every situation of our life. There is a need to develop and maintain emotional competencies in teachers, which in turn helps them to develop the same quality among their students. It is concluded that the level of emotional intelligence of both male and female faculties working in colleges affiliated to Bharathiar University are at moderate level.

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EMPOWERING WOMEN – FOSTERING WOMEN E- PRENEURSHIP

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Abstract

Self Help Group (SHG) is developed in our country for reducing poverty and enhances self-employment especially for women. Today's women are more empowered and independent. History is a witness that women have always being subjected to animosities, like staying at home and looking after household, this has helped them to evolve as great managers. As we know entrepreneurship is all about effective management. In India, women comprise about 30% of corporate senior management positions, which is notably higher than the global average. As stated by Forbes India issue dated on 10th Dec 2015, the overall median proportion of female executives in successful companies is 7.1% compared to 3.1% at unsuccessful companies.

Keywords: *Entrepreneurship, Fostering, Empowerment, Women E-Preneurship, Household.*

Introduction

The world economy is still struggling to recover from the economic shocks of the past; momentum is growing for a new industrial revolution which brings sustainability. Today's urgent need of industrial development is to harness the economic potential of women which is – half of the world's population. It has been estimated that by 2020, 870 million women who have been living or contributing at a subsistence level will enter the economic mainstream for the first time as producers, consumers, employees and entrepreneurs.

With profound effects on global development, the economic impact is expected to stagger. It becomes vivid that women are prevailing powerful drivers to the development. Nowadays men and women become more equal, thereby economies grow faster, even then fewer people remain poverty, and the overall well-being also increases.

Research has shown that women are more likely to invest a large proportion of their household income in the education and well-being of their children than men. Women when empowered to make an income, accumulate assets and increase their economic security, they will improve industrial capacity and spur economic growth by creating new jobs, and also expands the pool of human resources and talents available in a country.

Women tend to have a smaller ecological footprint than men. Women take sustainable decisions for their households and businesses based on the patterns of production and consumption. Hence this leads to increased role in economic decision-making and positive effects on sustainable development. It is clear that women entrepreneurs are the new engines for inclusive and sustainable industrial growth, and will be the rising stars of economies in developing countries.

The World Economic forum states that women entrepreneurs as “The way forward”.

Despite of these women entrepreneurs are still struggling to take right place in economic life. Even though more and more women are starting businesses, they still manage fewer businesses that are in less profitable sectors that grow more slowly and are ultimately more likely to fail.

Barriers to success

Gender Inequality:

Gender gaps impose real costs on society. When women do not participate equally in entrepreneurship, economies lose the benefits that would otherwise be provided by new products and services, additional revenues and new jobs; economies also lose out due to the long-term negative effects on workforce skills and education occurring when half of the potential pool of labour is not developed. The clear consequences of women’s economic marginalization further emphasize the pressing need of gender equality and the economic empowerment of women.

Lack of government Support:

Women and men face challenges in setting up their own businesses, but barriers for women are often greater and harder to overcome. They are often confronted with a lack of government support in terms of policy, laws, and services.

Lack of skill training and technological assistance:

Women in most of the rural area receive limited education, skills training, career guidance and the lack of technological know-how to access the modern, affordable technology further stops women from reaching their full potential. Enhancement of skills and education would help in bringing out the potentialities.

Cultural beliefs:

Cultural values also hold women back, where women entrepreneurship were influenced by traditional and internal factors than by legal or regularity barriers when starting the business.

Women need to transform from the ancient ethos like framing the vision ,goals and action plans for the business ideas .They should also shoulder the responsibilities and take ownerships.

Family setup:

Perceptions of family responsibility pose a challenge, with patriarchal attitudes restricting women’s responsibilities to domestic and family work, and thus preventing them from acting independently. Family environment affects women from entering into business. Their responsibility is in various facets daughter, mother ,wife and so on.

Creative industries empowering women

Sectors with a high potential for wealth creation, food security or export promotion can

offer particular opportunities for women. For example, creative industries include a broad spectrum of subsectors – art, crafts, design, textiles, leather, furniture, (Slow) food, and even community-based tourism related services – that allow for innovative and expanded opportunities for income generation.

Self-help group projects in India have proven that creative industries can be a means for women to harness cultural knowledge and assets to generate wealth and income. Despite the economic successes of the past decade, many women in the rural areas of the country still rely on small-scale traditional handicrafts to make a living. Limited resources, poor infrastructure and a lack of training prevent them from developing these businesses.

Women empowerment skills enhancement through encouraging e-preneurship

Women empowerment in India:

Empowerment is a multi-faceted, multi-dimensional and multi-layered concept. Women's empowerment is a process in which women gain greater share of control over resources – material, human and intellectual like knowledge, information, ideas and financial resources like money – access to money and control over decision – making in the home, community, society and nation, and to gain 'power'. According to the Country Report of Government of India, "Empowerment means moving from a position of enforced powerlessness to one of power". The economic empowerment based approach to improving women's control over economic resources and strengthening the economic security of women.

Women entrepreneurship in India:

The educated women do not want to limit their lives in the four walls of the house. They demand equal respect from their partners. However, Indian women have to go long way to achieve equal rights and position because traditions are deep rooted in Indian society. India being a male-dominated society, very few women is in the large entrepreneurial field. They constitute only 10% of the total. Government has taken many steps and various program of training to develop and help women entrepreneurs and their entrepreneurial ability .Various incentives have been started to develop entrepreneurial profitability. Women in India constitute 48% of the total population. But their participation in economic activities is only 38%. The development of women as entrepreneurs will generate multifaceted socio-economic and be a boon and benefit to the country.

Encouraging Women entrepreneurs Eradication of traditional belief:

In the present scenario there are various measures taken by government and institutions for providing equal status to women in society but it has not being achieved wholly because of the practice of traditional mentality in our society. Due to which today also women are not allowed to step outside their houses and their role is limited to their family. For encouraging women entrepreneur there is a need to change the traditional mentality of society. This change has taken place in many areas but needs a lot of improvement ,if they breakout of the shell wonders are on their paths. Family support is the most important factor in order to encourage women entrepreneur. Women have to handle both her family and her work. And if family supports in performing her dual role smoothly she can handle her work more effectively and a sense of confidence built in her.

Fostering an entrepreneurial culture for women

Foster awareness and a positive image of entrepreneurship among women:

Efforts should be made to foster a greater awareness of the benefits of entrepreneurship among women. Governments should promote an entrepreneurial and risk-taking spirit, and eliminate the stigmas attached to failure. To motivate strong, positive female role models should be showcased to build self-confidence and encourage women to consider becoming entrepreneurs.

Improve the conditions for women's entrepreneurship:

Institutions should work to improve the status of women in business and remove gender-related obstacles to entrepreneurship. They should work to improve their access to support services and seek measures which can lighten the double burden of professional and household responsibilities for women, in order to allow them to undertake entrepreneurial activities under conditions more similar to those confronting men.

Encourage entrepreneurship through the educational system:

The educational system should be mobilized as a vehicle to introduce boys and girls to entrepreneurial challenges and offer them equal opportunities to learn and cultivate their skills from an early age. Teach entrepreneurship to women: Management and technical training for women entrepreneurs should be easily accessible, inexpensive and available on flexible terms, maximizing the opportunities offered by e-learning and new technologies for skill building. Public/private partnerships such as government/universities/ firms/NGOs etc., in this regard should be encouraged.

Foster marketing confidence among women:

A major area of difficulty for women entrepreneurs is marketing. The long term strategy should in any case be to inculcate marketing skills in women entrepreneurs to enable them to produce for the market.

Foster entrepreneurial networks:

There should be improvement in the conditions and infrastructure for well-functioning business networks aimed at both men and women, including through cooperation with regional and international organizations.

Role of SHG's in fostering Entrepreneurship among Women

Organizing the poor into groups however is not an easy task. The Non-Governmental organizations play a crucial role to identify the self-interested persons, to form them into self-help groups and guide the members in farming the rules and regulations with regard to thrift and credit procedures and repayment ethics. India has a long tradition of people coming together voluntarily for performing various socio-cultural, religious and economic activities collectively. It is a voluntary association of women formed to attain certain collective goals.

The self Help Group is a viable alternative to achieve the objectives of rural development and to get community participation in rural development programmes. Generally it has members not exceeding 20 and one member act as leader called *Animator*. It enhances status of women as participants, decision makers and beneficiaries in the democratic, economic, social and cultural spheres of life.

The role of micro-credit is to improve the socio economic status of women in households and communities. The micro entrepreneurship is strengthening the women sustainable development and removes the gender in-equalities. SHGs saving are extended as micro credit to its members to promote the micro and small scale enterprises to alleviate poverty and to provide sustainable economic development of the community. Rural women play direct and indirect role both in farm operations and domestic chores.

Now a day's rural women are achieving sustainable development by associating with the technical Know-how and are able to cope up with the changing scenario of economy. By acquiring new skills they are able to setting their own enterprises for their sustainable development and also they are able to develop other women of their villages. Majority SHG women of rural areas and urban areas are managing micro enterprises with livestock and domesticated activities because they can be managed with micro finances. Very few are associated with agriculture and its allied activities. It is evident that micro entrepreneurs will have continuous income and can contribute to their sustainable development.

Conclusion

Entrepreneurship among women, undoubtedly foster empowerment of women and thereby improves prosperity of the nation in general and of the family in particular. At present women have broken the monopoly of men and proved that they are not inferior to men. The SHGs and micro enterprises had major impact on social and economic life of rural women. At present, women are aware of opportunities available to them, but there is scope for improvement in it. The economic status of women has become an indicator of society's stage of development of entrepreneurship among women. Women entrepreneurship must be molded properly with entrepreneurial traits and skills to meet the changes in trends, challenges among global markets and also be competent enough to sustain and strive for excellence in the entrepreneurial arena.

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MICRO FINANCE INSTITUTION MODEL – A TOOL FOR FINANCIAL INCLUSION IN INDIA

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ABSTRACT

In this study gives a clear picture about the progress of microfinance institution model towards financial inclusion in India and also study the evolution of microfinance institution (MFI) sector in India. It found that microfinance institution model plays a vital role for achieving of greater financial inclusion in India. Hence it is necessary to improve the financial inclusion in the rural areas by concentrating on the microfinance models and adopting advanced technological developments, global practices to deliver the financial services at un-served and underserved areas of the country. This helps to achieve the universal financial inclusion in India.

Keywords: *Banks, Financial Inclusion, MFIs, NABARD, RBI, SHGs*

Introduction

Microfinance in India has come a long way. It started as an alternative source of finance to the un-served masses comprising the bottom of the socio-economic pyramid and gradually turned out to be a tool for uplifting their social standard and working their way out of poverty. The sector has helped millions of small households in the most remote areas to give life to their dreams by providing them the means to fulfill them.

Micro ûnance has covered a long journey from micro savings to micro credit and then to micro enterprises and now entered the field of micro insurance, micro remittance, micro pension and micro livelihood. This gradual and evolutionary growth process has given a great boost to the rural poor in India to reach reasonable economic, social and cultural empowerment, leading to better life of participating households. Financial institutions in the country have been playing a leading role in the microûnance programme for nearly two decades now.

Models of Micro Finance

Microfinance services are provided mainly by two models involving credit linkage with Banks.

SHG Bank Linkage Programme (SBLP) Model

A Self Help Group (SHG) is a small group of 10 to 20 persons of rural poor who come together to mutually contribute to common fund for meeting their emergency needs. SHG - Bank Linkage Programme was introduced by NABARD in 1992. This Model involves the SHGs financed directly by the banking agencies viz., Commercial Banks (Public Sector and Private Sector), Regional Rural Banks (RRBs) and Cooperative Banks.

MFI Bank Linkage Model

Under this model, Micro Finance Institutions (MFIs) avail bulk loans from Banks for on-lending to SHGs and other small borrowers covered under microfinance sector.

The above two major models of microfinance, here we have to discuss only Microfinance Institution (MFI) Model towards financial inclusion in India.

Literature Review

Dharen Kumar Pandey and Mukesh Kumar, in his article (2011) entitled "Microfinance as a Tool for Financial Inclusion", focused that achievement of the microfinance services towards financial inclusion and also identified that retail banking services in the microfinance sector result in fulfillment of the financial inclusion in India. It can be said that microfinance sector has playing a supporting role in the achievement of financial inclusion objective of the union government.

Christabell. P. J. and Vimal Raj. A, in his article (2012) entitled "Financial Inclusion in Rural India: The Role of Microfinance as a Tool" recommended that Microfinance Institutions (MFIs) play a significant role in facilitating inclusion, as they are uniquely positioned in reaching out to the rural poor. Many of them operate in a limited geographical area, have a greater understanding of the issues specific to the rural poor. Even though, in India, the microfinance model extends credit and savings to the poor, the challenges faced by the industry has to be rectified in due course for the effective working of the model.

Parkodi and D. Aravazhi, in his article (2013) entitled "Role of Microfinance and Self Help Groups in Financial Inclusion", states that with the increasing demand for rural finance, and the inadequacies of formal sources, the MFIs have immense opportunities in the new avatar of micro credit in India. Financial Inclusion will be real and successful only when the small and marginal farmers and landless laborers have unhindered access to the financial services like Savings, Credit, Micro Insurance and Remittance facilities.

Statement of the Problem

Over the years, Government and the Reserve Bank of Indian (RBI) have made several concentrated efforts to promote financial inclusion. These efforts and initiatives helped to bring in a large section of the unbanked population under the formal financial credit system. However, a significant portion of India's population still remains devoid of access to basic formal credit facilities mainly due to lack of last mile connectivity. For this purpose the microfinance sector covers the last mile connectively to deliver financial services to the un-served and underserved areas. So, the present study is undertaken to analyze the progress of Microfinance Institution (MFI) model in India and also study the evolution of Microfinance Institution (MFI) sector in India.

Objectives of the Study

The following are the objectives of the present study.

- To study the evolution of Microfinance Institution (MFI) sector in India.
- To review the snapshot of performance highlights of Microfinance Institution (MFI) Model during 2014-15 to 2015-16.

Ø To examine the progress of Microfinance Institution (MFI) Model during 2015-16.

Research Methodology

The present study depends on secondary data. Data published by various institutions such as Government of India (GOI), National Bank for Agriculture and Rural Development (NABARD), Sa-Dhan, etc. are used for the purpose of the present paper.

Evolution of Microfinance Institution (MFI) Sector in India

The following table presents evolution of Microfinance Institution (MFI) Sector in India.

Table No.1 Evolution of Microfinance Institution (MFI) Sector in India

Year	Description
1974	Sewa Bank First form of Microfinance
1984	NABARD Trust for SHGs
2002	SHG Loans on par with Secured Loans
2004	MFI lending treated as PSL
2006	Krishna Crisis in Andhra Pradesh
2007	Entry of PE Players
2009	**Microfinance Institution Network (MFIN) Launched**
2010	SKS IPO, Andhra Crisis & Ordinance
2012	**Malegam Committee & RBI Guidelines**
2014	RBI gave Universal Banking License to Bandhan Microfinance
2015	**MUDRA Bank Launched; 8 MFIs granted Small Finance Banks (SFB) Licenses by RBI**

Source: Evolving Landscape of Microfinance Institutions in India (July-2016)

Performance Highlights: A Snapshot of Microfinance Institution (MFI) Model

The following table presents a snapshot of Microfinance Institution Model during 2014-15 to 2015-16.

Table No.2 A Snapshot of Microfinance Institution (MFI) Model

Indicators : MFI Model	2016	2015	Increase/Decrease
No.of MFI	166	156	Increase
Clients Outreach	399 Lakhs	371 Lakhs	Increase
Women Clients	97%	97%	No Change
Rural Clients	38%	33%	Increase
Gross Loan Portfolio	Rs.63853 Cr.	Rs.48882 Cr.	Increase
Managed Portfolio	Rs.16914 Cr.	Rs.9854 Cr.	Increase
Income Generation Loan	94%	80%	Increase
Avg. Loan per Borrower	Rs.11425-00	Rs.13162-00	Decrease
NPA	0.15%	0.21%	Decrease

Source: www.sa-dhan.net

Microfinance Institution (MFI) Model

Top 10 MFIs in India by Geographical Spread

The following table presents Top 10 MFIs operating in Number of Indian States/UTs.

Table No.3 Top 10 MFIs Operating in Number of Indian States/Union Territories during 2015-16

S.No	Name of MFI	No. of States/UTs
1	Ujjivan Financial Services Private Limited	24
2	Janalakshmi Financial Services Private Limited	18
3	Share Microfin Limited	18
4	SKS Microfinance Limited	17
5	Satin Creditcare Network Limited	16
6	Bhartiya Samruddhi Finance Limited (Basix)	15
7	Asmitha Microfin Limited	13
8	Spandana Sphoorty Financial Limited	12
9	NABARD Financial Services Limited	11
10	North East Region Finservices Limited, Annapurna, ESAF, Utkarsh and Equitas	10

Source: www.sa-dhan.net

The above table states that Ujjivan Financial Services has the largest geographical spread with the operations across compared to 18 states for Janalakshmi and Share Microfin and 17 states for SKS for Microfinance.

Top 10 MFIs in terms of Branch Network

The following table presents Top 10 MFIs in terms of Branch Network.

Table No.4 Top 10 MFIs in terms of Branch Network during 2015-16

Source: www.sa-dhan.net

S.No	Name of MFI	No. of Branches
1	SKS Microfinance Limited	1191
2	Share Microfin Limited	697
3	Spandana Sphoorty Financial Limited	523
4	Cashpor Micro Credit	494
5	Ujjivan Financial Services Private Limited	469
6	Satin Creditcare Network Limited	431
7	Equitas Microfianance Limited	397
8	Asmitha Microfin Limited	380
9	Janalakshmi Financial Services Private Limited	341
10	Utkarsh Microfinance Limited	341

The above table states that SKS Microfinance is the MFI with largest number of branches at 1191 compared to Share Microfin and Spandana Microfinance followed by other microfinance companies.

Top 10 MFIs with Loan Portfolio Outstanding

The following table presents List of Top 10 MFIs with Loan Portfolio as on 31st March, 2016.

Table No.5List of Top 10 MFIs with Loan Portfolio as on 31st March, 2016

Source: www.sa-dhan.net

S.No	Name of MFI	Gross Loan Portfolio(in Crore)
1	Janalakshmi Financial Services Private Limited	10983
2	SKS Microfinance Limited	7682
3	Ujjivan Financial Services Private Limited	5389
4	Shree Kshetra Dharmasthla Rural Development Project (SKDRDP)	4994
5	Equitas Microfinance India Private Limited	3283
6	Satin Creditcare Network Limited	3271
7	Grameen Koota Financial Services Private Limited	2539
8	Spandana Sphoorty Financial Limited	2282
9	EASF Microfinance & Investments Private Limites	1925
10	Share Microfin Limited	1540

The above table states that Janalakshmi Microfinace is the leader in Gross Loan Portfolio followed by SKS Microfinance and Ujjivan Microfinance which is an urban focused is placed third with Rs. 5389 Crore Outstanding. Top ten contribute to Rs. 43888 Crore of loan portfolio which is 69 per cent of the Sector's Total.

Loan Amount Disbursed in Area Wise

The following table presents Loan Amount Disbursed in the area wise during 2014-15 to 2015-16.

Table No.6 Amount Disbursed during the year 2015 and 2016

Area	Loan Disbursed in 2016 (Rs. in Crore)	Loan Disbursed in 2015 (Rs. in Crore)	Amount of Disbursement increase in 2016 over 2015	Growth (%)
Rural	20893	18291	2602	14
Urban	51452	40621	10831	27
Total	**72345**	**58912**	**13433**	**23**

Source: www.sa-dhan.net

The above table states that in 2016, total loan amount disbursed increased by Rs.13433 Cr. over 2015. There is a growth of 23 per cent where amount increased in rural areas by 14 per cent and in urban areas by 27 per cent. Hence it is necessary to concentrate and improve loan disbursed in the rural areas. Which can helps to achieve greater financial inclusion in India.

Top 10 MFIs Disbursing Loans

The following table presents List of Top 10 MFIs Disbursing Loans during 2015-16

Table No.7 List of Top 10 MFIs Disbursing Loans during 2015-16

S.No	Name of MFI	Loan Disbursed (in Crore)
1	SKS Microfinance Limited	12082
2	Janalakshmi Financial Services Private Limited	11537
3	Ujjivan Financial Services Private Limited	6619
4	Satin Creditcare Network Limited	6606
5	Shree Kshetra Dharmasthla Rural Development Project (SKDRDP)	4889
6	Grameen Koota Financial Services Private Limited	3349
7	Equitas Microfinance India Private Limited	3171
8	Grama Vidiyal Microfinance Limited	2402
9	EASF Microfinance & Investments Private Limites	2388
10	Utkarsh Microfinance Limited	1713

Source: www.sa-dhan.net

The above table states that SKS Microfinance disbursed the largest loan amount of Rs.12082 Crore followed by Janalakshmi Microfinace at Rs. 11537 Crore. Ujjivan is in the third place at Rs.6619 Crore disbursed followed closely by Satin Creditcare Microfinance at Rs.6606 Crore.

Findings

From the above analysis the following findings are made.

Among the evolution of Microfinance Institution (MFI) Sector in India, the major steps are Malegam Committee & RBI guidelines and RBI gave universal banking license to Bandhan Microfinance and also 8 MFIs granted license to start Small Finance Banks (SFB). The Ujjivan Financial Services has the largest geographical spread with the operations across compared to 18 states for Janalakshmi and Share Microfin and 17 states for SKS for Microfinance. The SKS Microfinance is the MFI with largest number of branches at 1191 compared to Share Microfin (697) and Spandana (523) Microfinance followed by other microfinance companies.

The Janalakshmi Microfinace (10983 Cr.) is the leader in Gross Loan Portfolio followed by SKS Microfinance (7682 Cr.) and Ujjivan Microfinance which is an urban focused is placed third with Rs. 5389 Crore Outstanding. Top ten contribute to Rs. 43888 Crore of loan portfolio which is 69 per cent of the Sector's Total. The SKS Microfinance disbursed the largest loan amount of Rs.12082 Crore followed by Janalakshmi Microfinace at Rs. 11537 Crore. Ujjivan is in the third place at Rs.6619 Crore disbursed followed closely by Satin Creditcare Microfinance at Rs.6606 Crore. The Loan Disbursed in the area wise, there is a growth of 23 per cent in total and where amount increased in rural areas by 14 per cent and in urban areas by 27 per cent over 2015.

Suggestions

The Government of India, RBI and Banks can frame effective measures to strengthen the microfinance sector and achieve greater financial inclusion in India. The microfinance institutions also create awareness about products and services offered by them to the borrower/clients before giving loans. This can help improve the financial literacy and it leads to improve the financial inclusion in India.

In the rural areas Business Correspondents (BC) plays a major role in achieving financial inclusion. So they are feel free to clarify doubts arises from the rural people it is most important. As per Census 2011 rural population in India is 68.84 per cent. So the banks should concentrate and extending financial services to the rural people to achieve greater financial inclusion.

Conclusion

The Microfinance has to persist with its focus on the three critical dimensions. One is the need for the articulating the fact that microfinance is a strategic part of the financial inclusion agenda of the government and that of a central bank. The second is the critically of re-demonstrating our collective intension to help the poor and the unbanked populace by way having right mission, social performing measures and client protection process. The third area is in projecting the fact that microfinance institutions are sustainable financial institutions and they continue to be the investible destination for the bankers and the investors which can be lead to extending of credit to the rural people there by improve their standard of living. The Government of India and Reserve Bank of India have created conducive policy and regulatory frame work for Microfinance Institutions (MFIs) to operate in the country. Hence it is necessary to improve the financial inclusion by strengthening of microfinance sector and adopting new models for delivering and extending of financial services to the rural areas particularly low income and marginalized groups.

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ECONOMIC COST OF VIOLENCE AGAINST WOMEN

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ABSTRACT

Its purpose is to provide an overview of the work that has been undertaken world-wide on the economic costs of this gender – based violence. The focus of the analysis is to examine estimates of the costs of violence, to compare methodologies used, and to understand the scope of what has been accomplished to date. The paper analyzes existing studies, shows their geographic coverage, indicates the types of costs addressed, and discusses the strengths and weaknesses of the methodologies used. To simplify understanding of these different costs, the types of costs can be combined into four categories: direct and tangible, indirect and tangible, direct and intangible, indirect and intangible.

Key words: economic costs , gender – based violence, Direct tangible cost, Indirect tangible cost

Introduction

Costs of violence against women are widespread throughout society. Every recognizable effect of violence has a cost whether it is direct or indirect. Direct costs come from the use of goods and services for which a monetary exchange is mode. Direct cost exist for capital, labour and material inputs. Indirect costs stem from effects of violence against. Women that have an imputed monetary value even though they do not involve an actual monetary exchange. Such as lost income or reduced profits. Effect of violence against women also include intangible costs such as premature death, and pain and suffering for which there is no imputed monetary value in the economy. Costs can also be borne in the short-run or the long-run.

Direct tangible cost are actual expenses paid, representing real money spent. Examples are taxi fare to a hospital and salaries for staff in a shelter. These costs can be estimated through measuring the gods and services consumed and multiplying by their unit cost.

Indirect tangible cost have monetary value in the economy, but are measured as a loss of potential. Examples are lower earning and profits resulting from reduced productivity. These indirect cost are also measurable, although they involve estimating opportunity costs rather than actual expenditures. Lost personal income, for example, can be estimating by measuring lost time at work and multiplying by an appropriate wage rate.

Direct intangible cost result directly from the violent act but have no monetary value. Examples are pain and suffering, and the emotional loss of a loved one through a violent death. These costs may be approximated by quality or value of life measures, although there is some debate as to whether or not it is appropriate to include these costs when measuring the economic costs of violence against women. This debate is explored in part 3.

Indirect intangible cost result indirectly from the violent, and have no monetary value. Examples are the negative psychological effect on children who witness violence which cannot be estimated numerically.

While all tangible costs should be measurable, many are not due to a lack of data. All published estimates of the costs of violence against women include examples of direct tangible costs, and most include some indirect tangible costs, such as lost earnings from time away from paid work. Attempts to measure the direct intangible costs are less frequent and no studies attempt to put a dollar value on the indirect tangibles.

The above types of costs can be borne by individuals, including victims, perpetrators, or other individuals affected by violence; businesses; governments at all levels; and by society in general. With regard to societal costs there are two forms that costs can take: the first reflects aggregate economic changes while the second demonstrates social consequences. The economic from indicates that some costs of violence impact not only individuals or businesses bu t also the larger economy, violence against women prevents an economy from attaining its full economic potential. Aggregate demand is skewed towards goods and services related to the effects of violence thereby diverting resources from their optimal use. This results in lower economic growth and a reduced standard of living. Meanwhile, aggregate supply in also reduced through lower productivity, reduced output and export, and reduced savings and investments. Additionally, the reduction in output is even larger because of the economic multiplier whereby a dollar lost represents more than just a dollar. Rather it represents the lost tax revenue and the benefits thereof, as well as the lost savings and spending that is passed on to others to save and spend many times over. Violence, therefore, has a significant negative influence on GNP and national economic wellbeing. In general, billions of dollars of resources are spent annually in treating violence against women that could be used to further develop a non-violent economy.

Economic studies of violence against women here yet to measure these economic multiplier effects in any comprehensive way. The first partial estimates come from greaves et al (1995) who measured the one-year loss of tax revenue due to death, lost time at work and incarceration in Canada at approximately SCDN 106 million, and Henderson (2000) who measured the tax share paid by businesses for public services provided by the Australian government at SAUST 400 million per year.

The second from of societal costs recognizes that some of the effects of violence have larger ranging social costs that cannot be measured. These include the fear all women may face as a result of knowing that other women suffer from domestic violence. The undermining pf societal values and the guilt non-violent men feel for the actions of the perpetrators.

Studies of the pre violence of violence against women world-wide indicate that violence is an issue that premasters every corner of society. Is widespread and costly. A common way to organize the economic costs of violence is to place them in categories based on the consequences of violence and the services utilized as a result of violence. Cost can be found in seven major categories; justice, health, social services, education, business Costs, personal or household costs and intangibles. Table 1 provides a listing of cost found within each of categories. Separating the costs in to manageable categories facilitates an understanding of the extent of the costs and consequences of violent acts. For researchers working to measure economic cost, the categories also point the way to finding different.

Health

Health is another area that is expensive for the state, and also for individuals depending on the extent to which health care is publicly or privately funded. Health costs result from both direct and indirect health concerns caused by violence. They can also be both short and long-tern. Direct health costs in the community include short run and long run health care in doctor's offices, clinics of all types and hospitals. As in the case of justice costs, health costs include capital, labour and material inputs. Capital costs are such things as land, buildings, infrastructure, laboratory equipment, machinery, and vehicles, labour costs cover services provided by physicians, nurses, other professionals such as dentists and pharmacists, technicians and support staff. Material inputs can include such things as hospital food, drugs, technical materials such as x-ray films and developing fluids, gasoline and electricity. Direct health costs are also paid by the victim through out-of-pocket costs for such things as health care services, medications, prosthetics, elective surgeries, and alternative health services. Indirect health costs are mostly borne by the individuals. They include such things as reduced longevity. The effects of poor health on lifestyle choices, and reduced mobility affecting the ability to participate in public life. There are also included in the personal cost category. Health costs can be multiplied throughout society. Such as the spread of HIV/AIDS among women who are compelled by the threat of violence to have sex with infected partners or to participate in prostitution.

Social Services

Social costs stem from the provision of public services to both victims and perpetrators of violence against women. They can be privately or publicly funded. Social services include social welfare agencies helping abused women. Abusive men and their children. Any time an individual accesses any public services as a result of violence against women, a cost is incurred. The services may be provided through a church, community center, social worker, religious leader, or private agency, the list of services accessed by victims of violence is vast. Each agrncy incurs the direct costs of capital. Labour and material inputs.

Education

Education costs can include the added demand for special education services related to behavioral problems and learning disabilities in children who witness abuse at home, as well as school programs with the aim of reducing violence against girls. Training programs for women to re-enter the workforce after leaving abusive partners are also included. An indirect cost is the reduced earning capacity of women and girls who have reduced educational attainment as a consequence of violence.

Business and Employment

When violence happens at home, the women's paid work environment is affected as well. These effects have a series impact on the business sector. Business costs include her lost time at work and reduced attention. The time her co-workers spend covering for her, the time she may spend in the restroom or on the phone with friends or family, actual time she may need to take off work, administrative time spent processing her time off, administration costs for the search and training of a replacement employee if she leaves the job, administration costs for programs or polices designed to help support her, lost profits from her decrease in output, and the increase in overtime payments to other workers who cover for her, some of these costs are accounted for in the women's personal loss of income, and most not be counted again. However there are additional costs to the business sector beyond the lost the firm can also include the administrative costs of processing harassment suits or union grievance producers for violence occurring in the workplace.

Household and personal cost

Many personal and household costs results from violence against women. Victims spend a great deal in direct out-of-pocket costs for such things as transportation, childcare alternative therapies, replacing, destroyed, belongings, relocation and medications. These expenditures greatly affect household consumption, skewing it away from the goods and service that would be chosen in the absence of violence.

Additionally, individuals and their households pay indirectly through attaining lower income, reduced income stems from time off work, lower productivity while at work, quitting or lost promotions, and generally having a more marginal labour force attachment. Another indirect costs borne by victims and their families is the loss of unpaid household production. When a women is injured or emotionally upset, she performs less of her household responsibilities.

Finally, the household faces costs if the victim leaves the abusive household and loses the economies of scale derived from sharing one domicile. That is more, work is required to produce the same level of output in two households than in one. For example, one person can cook a meal for two are more people with only a marginal increase in time and material compared to two people cooking two males the additional resources used to produce the same level of output are a longer tern costs of the violence that caused the separation.

Conclusion

Many consequences of violence are not tangible. Intangibles are very difficult to cost, and many studies do not attempt to do so. Nevertheless they represent very important and significant costs. A few examples include the fear that women harbor as a result, of abuse, pain and suffering or the loss of life, and second generation effects of violence. It is impossible to measure the costs associated with fear and, while attempts have been made at developing measures of pain and suffering or the loss of life, they are imprecise at best. Finally, second generation effects are well documented but also no easy to measure. The costs of violence against women are born by individuals, families, communities, and societies as a whole. Individuals pay out of packet expenses, and their families, experiences a change in their consumption choices as a result. Individuals and their families also bear the burden of reduced income, reduced savings, and loss of household output. Communities cover the costs of private services provided by the local agencies such as churches or volunteer workers in crisis centers. Municipal, state or provincial, and national governments bear the costs of public services offered within their jurisdictions. As well as supporting private initiatives through granting programs. The exact services provided by each level of government depend on the country. Its history and its political, culture, overall, the entire economy and the whole national society are affected by the monetary losses resulting from violence against women.

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APPRAISAL OF EMPLOYEES PERFORMANCE IN TITAN INDUSTRIES LIMITED IN HOSUR

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Abstract

Performance appraisal system is a mechanism or a tool introduced in organization for variety of purpose. One of the major goals of performance appraisal system is to help development people by way of creating greater awareness of what they perform and how they perform. Even through the performance appraisal system can serve many objectives in this small piece of research, it is aimed at seeing how a performance appraisal system is implemented in Titan Industries Limited and to understand the perception of employees towards performance appraisal system implemented in the study unit.

Key words: *Performance appraisal, superior-subordinate, employee commitment*

Introduction

Performance appraisal system is a mechanism or a tool introduced in organization for variety of purpose. One of the major goals of performance appraisal system is to help development people by way of creating greater awareness of what they perform and how they perform. It is a key in the hands of people to reflect upon their own competencies and issue related to bring people together within hierarchical structure, where superior-subordinate interactive relationship are transcended into teamwork with dual focus on goal attainment and greater employee commitment. This process enables building a resource organization enable of solving its problem and attaining targeted business goals. Using performance appraisal system in an organization therefore, means thinking about people, leader ship and structure and then obtaining a right blend among these elements for some intended result.

Review of Literature

Chandra Sekaran (2009) felt that in the current circumstance the pressure on companies to adjust to the new environment and adopt cost saving initiatives will only benefit global sourcing. In difficult economic times, clients are more likely to increase their offshore spending in order to get more with the same or fewer budget dollars.

Padmanaban , V., (2009) study revealed that the employees and management should developed and positive approach and favorable attitude to the participative management. Conducting training and orientation programs for the employees concerned would help to create a conducive environment for successful application of workers participation in management scheme.

Itishree Mohanty., (2009) has presented in his study that we are living in a global village where the survival of the fittest has been replaced by the survival of the fastest in this competitive world.

Purna Chandra Rao, P., (2009) in his study he has concluded that the employees can expect a high standard of performance from the workers, only if they are properly trained, housed, clothed and looked after well in all respect. The cost of welfare expenditure is to be treated a sound investment.

Gupta reported (2008) that a business is affected by health, happiness and carrier prospects of the employees. So whatever is put on paper must be properly substantiated. The input have to be fair and objective and not based on someone's personal feeling and perception 360- degree appraisals have become on of the process is that it provides employees the opportunity to receive honest feedback from all sources with an organization.

Govindasamy , M .,(2008) in his research on "Employer-Employee Relationship in the Dharmapuri District Co-Operative Sugar Mill Limited" has stressed the following fact: the efficient functioning of an organization depends very such the existence of proper relationship between employer and employee."

Shashank shah and et.al., (2006) has pointed out that the wealth of any organization lies in the hands and minds of its employees. Employees Assistance Programs are designed to look after the well-being of the 'human assets' of an organization, and are powerful tools to galvanize these 'assets'.

Ramani, V.V (2006) has stated that based on the needs of employees. The rewards can be divided into intrinsic and extrinsic rewards. Intrinsic reward that is associated with the job itself, extrinsic rewards those rewards that have value measurable in monetary terms.

Anaindya and K. Shree (2002) had highlighted that in order to make training to be effective, training to be linked with the organization strategic agenda. A good training design ensures that participants get excited after the workshop and given opportunities for implementation of what they have learnt subsequently.

Statement of the Problem

Employee Performance Appraisals are important tools for small and growing businesses. The appraisals can be crucial in developing employees, reinforcing good performance, and pointing out areas of improvement. Appraisals provide an opportunity to formally communicate expectations for future performance. They also create a record of steps taken to remedy bad or inadequate performance. A company's success often depends on its employee's performance. Performance appraisals on employees need to be conducted regularly in order to improve quality of work. Inappropriately performed appraisal can lead to employee dissatisfaction and decline in work performance. As most of the new generation companies follow rewards based on performance, appraisal acts as the valid ground for fair and equitable compensation. Many a times the company has to make tough and critical decisions like cost cutting or change in technology. The Industries Limited, perception of employees regarding performance appraisal system being followed by the Titan Industries Limited.

Scope of the Study

Performance appraisal (or) merit rating is one of the most universal practices of management in an organization; only by this the management can make the employee achieve the desired organization goals. The main aim of this performance appraisal of employee is to provide them need aids to improve their performance by means of adequate appraisal. Employees are motivated to achieve target. As the performance appraisal is the backbone for the organizational development, the appraisal system has to be implemented project.

Objectives of the Study

1. The evaluation the effectiveness of performance appraisal system implemented in TITAN industries limited.
2. To study the employees' perception towards the performance appraisal system in Titan Industries Limited.
3. To find out the compensation package transfer and promotion policies for the middle and higher level executives.
4. To assess the extent to which the performance appraisal is human resource development oriented.

Hypotheses of the Study

The study has been done on the basis of the following hypothesis.

1. There is no association between age and Level of motivation.
2. There is no association between sex and Level of motivation.
3. There is no association between age and Level of satisfaction on over all services.
4. There is no association between Designation and Level of motivation.
5. There is no association between Income and Level of stratification on over all services.

Methodology of the Study

The study follows quantitative research method. Quantitative studies aims at portraying accurately the characteristics of a particular group or situation. Quantitative research is concerned with describing the characteristics of a particular individual or a group.

research study adopted Simple Random Sampling under the Probability sampling techniques. The study is based on both primary and secondary data. Primary data are collected by using an interview schedule and also through discussion with HR executives in Titan Industries Limited. The secondary data are collected from various journals, magazines, a articles, books and different websites related to study. A total of 450 employees were selected randomly as sample respondents. Using various statistical measures like percentage analysis, Chi-Square test, and T-test, Analysis of Variance (ANOVA – F Test)

Table - 1 Individual development

Factors	1	2	3	4	5	6	7	8	Total
Performance	10	14	11	20	29	17	25	24	100
	6.7 %	9.3 %	7.3 %	13.3%	19.3%	11.3%	16.7%	16.0%	100%
Review	11	10	9	19	20	30	29	22	150
	7.3 %	6.7 %	6.0 %	12.7%	13.3%	20.0%	19.3%	14.7%	100%
Role Analysis	16	18	26	8	14	26	18	23	149
	10.7%	12.1%	17.4%	5.4 %	9.4 %	17.4%	15.4%	12.1%	100%
Rewards	36	20	17	21	15	17	14	9	149
	24.2%	13.4%	11.4%	14.1%	10.1%	11.4%	9.4%	6.0%	100%
Potential	22	23	16	18	17	19	10	25	150
	14.7%	15.3%	10.7%	12.0%	11.3%	12.7%	6.7%	16.7%	100%
Training	30	37	22	19	11	10	16	5	150
	20.0%	24.7%	14.7%	12.7%	7.3%	6.7%	10.0%	3.3%	100%
Job rotation	15	18	38	23	17	14	10	15	150
	10.0%	12.0%	25.3%	15.3%	11.3%	9.3%	6.7%	10.0%	100%
Job Enrichment	10	9	9	23	28	17	28%	26	100%
	6.7%	6.0%	6.0%	15.3%	18.7%	11.3%	18.7%	17.3%	100%

Sources: primary data

The above table 4.1 indicates that the individual development of the respondents in the titan industries limited. The above factors like performance review, role analysis, rewards, potential, training, job rotation and job enrichment are influencing among all the factors the respondents for individual development.

Table – 2 Delegation of Authority

Particulars	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Responsibilities Quite common	4	12	24	37	73	150
	2.7%	8.0%	16.0%	24.7%	48.7%	100%
Senior officer's Active	6	18	35	52	39	150
	4.0%	12.0%	23.3%	34.7%	26.0%	100%
The psychological	8	14	43	41	44	150
	5.3%	9.3%	28.7%	27.4%	29.2%	100%
Job rotation	8	22	33	49	38	150
	5.3%	14.7%	22.0%	32.7%	25.3%	100%

Source: Primary Data

The above table 4.2 shows that the delegation of authority in the titan industries (jewellery division (7.3%) of the respondents are strongly agreed with the responsibilities is quite common and (37%) are agree and (24%)of the respondents are undecided (12%) are disagree and (4%)of the respondents are strongly disagree.(39%)of the respondents are strongly agree with responsibilities with senior officer active and (52%) are agree and (35%) are under and (17%) of the respondents are disagree and (6% of the respondents are strongly disagree.(44%) of the respondents are strongly agree with the psychological factors and (41%) are agree with and (43%) are undecided and (14%) of the respondents are disagree and (8%) of the respondents are strongly disagree.(38%) of the job ration and (49%) are and (33%) are undecided and (22%) of the respondents are disagree(8%) of the respondents are strongly disagree.

Table – 3 Organizational Development

Particulars	1	2	3	4	5	Total
HR department	26	64	32	12	16	150
	17.3%	42.7%	21.3%	8.0%	10.7%	100%
Communication	65	40	24	12	9	150
	43.3%	26.7%	16.0%	8.0%	6.0%	100%
Team building	25	23	30	23	49	150
	16.7%	15.3%	20.0%	15.3%	32.7%	100%
Interpersonal	18	11	23	71	27	150
	12.0%	7.3%	15.3%	47.3%	18.0%	100%
Role clarity	15	13	40	35	47	15
	10.0%	8.7%	26.7%	23.3%	31.3%	100%

Source: primary data

The above table 4.3 indicates that the organizational development of the titan industries limited. The HR department, communication policy, team building exercises, role clarity and inter personal are ranking in the above table.

Table – 4 Organizational Climate

Particular	Strongly Disagree	Disagree	Undecided	Agree	Strongly agree	Total
Staff enjoy Their work	10	15	28	33	64	150
	6.7%	10.0%	18.7%	22.0%	42.7%	100.0%
They have to be treated	6	12	33	52	47	150
	4.0%	8.0%	22.0%	34.7%	31.3%	100.0%
An important Part	6	26	34	40	44	150
	4.0%	17.3%	22.7%	26.7%	29.3%	100.0%
Over all service	3	12	39	64	32	150
	2.0%	8.0%	26.0%	42.7%	21.3%	100.0%

Sources: Primary Data

The above table 4.4 indicates that the organizational climate of the titan industries limited. The above factors ranking the staff enjoy their work and how they treated. The role of employee and the overall service render to the employee in titan industries limited.

H_0 There is no association between age and level of motivation.

Table – 5 4.8 Age and Level of Motivation-Chi Square Test

Age	Value	Df	P Value	Remark
Pearson Chi-Square	4.537	6	.604	Not significant

Sources: Computed data

It is noted from the above table that the 'p; value is greater than 0.05 and hence the result is not significant at 5% level. Hence the hypothesis age of the respondents and the level of motivation are noted associated does hold well. From the analysis it is concluded that there is no close relationship between the age of the respondents and level of motivation.

H_0 There is no association between sex and level of motivation.

Table – 6 Gender Level of Motivation-Chi Square Test

Age	Value	Df	P value	Remark
Pearson chi-square	2.336	2	.311	Not significant

Sources: Computed Data

It is noted from the above table that the 'p; value is greater than 0.05 and hence the result is not significant at 5% level. Hence the hypothesis sex of the respondents and the level of motivation are not associated does hold well. From the analysis it is concluded that are is no close relationship between the sex of the respondents and level of motivation.

H_0 There is no association between Age and Level of satisfaction on over all services.

Table – 7 Age Level of Satisfaction on Over All Services Chi-Square Test

Age	Value	Df	P Value	Remark
Pearson chi-square	7.049	9	0.632	Not significant

Source: Computed data

It is noted from the above table that the 'p; value is greater than 0.05 and hence the result is not significant at 5% level. Hence the hypothesis age of the respondents and the level of satisfaction on over all services are not associated does hold well. From the analysis it is concluded that there is no close relationship between the age of the respondents and level of satisfaction on over all services.

Conclusion

This study highlights the implications and importance of performance appraisal in TITAN industry. A successful performance appraisal contributes to powerful industries relations. This helps an industry too grow successful in accomplishing its goals and further enter into society in an endeavour to uplift the community and humanity. Majority of the employees of TITAN industry are highly satisfied with various appraisal methods, such as functions of recruitment, placement, transfer, promotion and training. In titan industry along with training, certain other activities like man power planning and performance appraisal have been introduced. If the suggestions are implemented, the industry can strongly forge ahead.

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JOB PERFORMANCE OF WOMAN EMPLOYEES IN COMMERCIAL BANKS – A STUDY IN MADURAI DISTRICT

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ABSTRACT

The success of the self appraisal depends on the employees conviction that his admission of faults along with efforts made to rectify them would not be treated adversely against them while the appraiser makes an overall assessment of his performance. Basically, it is widely believed that work is the solution for all troubles and miseries that ever beset man. The job performance of the woman employees is analyzed on five dimensions namely personal traits, planning, organizing, communication and organizational climate. The internal consistency within each dimension relating to emotional intelligence has been tested with the help of Cronbach's Alpha Reliability test. Here an attempt is being made to analyze the job performance of woman employees.

Keywords: *self appraisal, personal traits, human relations, job performance.*

Introduction

Management is a science with a difference. Therefore, various theories and expert opinions on managerial concepts come from the studies based on human behavior at work. Modern organizations implementing hi-tech automated systems are dependent on human beings for achieving the desired targets. Even the best systems are ultimately implemented by human beings and the net output depends upon the way they are implemented. The success of the organization in the globally competitive environment depends on the performance of the employees. To manage the employees' performance in a meaningful manner, they should be given a chance to participate in the organizational decision making process. Giving of functional autonomy enhances their creativity, initiatives and nurtures foresighted behavior and planning habits.

Statement of The Problem

In the present era of cut-throat competition and computerization, organizations that are planning to operate will have to prepare their employees accordingly. In order to analyze the efficiency and productivity of their employees' performance, their performance is to be measured and appraised. The predominating factor for appraising the employees' performance is to assess the personality traits of workers and examining how the employees could be motivated to do better. The main aim of evaluating employees' performance is to enable them to achieve reasonable goals and thus ensure that the organization performs better.

A number of techniques and methods for evaluating employees' performance have been generated on the basis of requirements. While deciding the evaluating system the emphasis can be laid on to test the human relations, behavioral aspects, trust, responsibility and capability. The employees' performance can be assessed by self evaluation, comparing person to person, paired ranking, linear rating scale and forced choice description. When the job is performed as per standards self appraisal becomes easy as one can judge their own performance. It creates self confidence and generates lot of motivation. Here an attempt is being made to analyze the job performance of woman employees.

Methodology

The woman employees of commercial banks in Madurai District are taken for the study. Multistage sampling is adopted to get a sample of 290 woman employees. The branches are selected from all the blocks by taking fifty percent of the branches covering all public and private sector commercial banks in each block and fifty percent of the woman employees working in the selected branch in each block are taken for the study. Lottery method of random sampling was followed in selecting the bank branches and woman employees working in the selected bank branches.

The study involves both primary and secondary data. The primary data are collected with the help of the questionnaire. The secondary data were collected from the websites, reports of bank, books, journals and magazines. The collected primary data were analyzed through SPSS 17.

The job performance of the woman employees is examined dimension-wise. The total score of each dimension was obtained by summing up the total score of ten statements of 290 respondents pertaining to the dimension. The mean, standard deviation and coefficient of variation was calculated for each dimension. The relationship that exists within the dimension was evaluated by applying the correlation technique and presented in matrix form.

To test the relationship between the previous occupational experience and job performance of woman employees, null hypothesis was framed. To test the null hypothesis t-test were applied.

Objectives of The Study

The objectives for the present study were framed as follows:

- To know the job performance among the woman employees in the commercial banks in Madurai District.
- To know the job performance and its significance with the previous occupational experience of the woman employees.

Hypotheses of The Study

For the present study the null hypothesis was formulated as there is no significant difference between the previous occupational experience of the woman employees and their job performance.

Analysis On Job Performance

Cronbach's Alpha, a coefficient of reliability test is used to measure the internal consistency of the score of the respondents on job performance dimensions. On analyzing the alpha values of the dimensions, personal traits, organizing, communication and organizational climate have the values of more than 0.8. The dimension planning of the employees has an alpha value of 0.75. The value satisfies the reliability standards suggested by Nunnaly

(1978).Hence, it is concluded that the opinion of the respondents on the job performance dimensions could be relied upon.

The job performance was analyzed with five dimensions having ten statements each. The analysis was done on the basis of total score, mean score, standard deviation and coefficient of variation for each dimension. The analysis of the dimensions is presented in the Table 1.

Table 1 Analysis on Job Performance of Woman Employees

Sl.No	Dimensions	Total Score	Mean Score	Standard Deviation	Coefficient of variation (in per cent)
1.	Personal Traits	10920	3.76	0.643	17.073
2.	Planning	11014	3.79	0.525	13.823
3.	Organizing	11102	3.82	0.559	14.602
4.	Communication	11075	3.81	0.604	15.815
5.	Organizational Climate	10283	3.54	0.698	19.684

Source: Primary data.

From the Table 1 it is understood that, the dimension organizing has the first place with the total score of 11102, followed by the dimension communication with the total score of 11075. The dimension organizational climate has the least score among the five dimensions with the total score of 10283 and the degree of variation among the woman employees was also high with the highest coefficient of variation of 19.684 per cent. On analyzing the mean score of the dimensions of job performance, it is understood that all the mean score are above three. Lower variation was found among the respondents for the dimension planning as it has the lowest coefficient of variation of 13.823 per cent.

Relationship Among Dimensions of Job Performance

The relationship among the dimensions of job performance was studied through correlation. The inter link between the dimensions and with overall job performance with the correlation value and the p value is presented in the matrix form in the Table 2.

Table 2 Correlation Matrix for the Job Performance Dimensions

Dimensions of Job Performance	Personal Traits		Planning		Organizing		Communication		Organizational Climate		Over all	
	r	p	r	p	r	p	r	p	r	p	r	p
Personal Traits	1											
Planning	$\mathbf{0.703}^{**}$	0.000	1									
Organizing	$\mathbf{0.499}^{**}$	0.000	$\mathbf{0.916}^{**}$	0.000	1							
Communication	$\mathbf{0.598}^{**}$	0.000	$\mathbf{0.869}^{**}$	0.000	$\mathbf{0.902}^{**}$	0.000	1					
Organizational Climate	$\mathbf{0.386}^{**}$	0.000	$\mathbf{0.210}^{**}$	0.000	0.078	0.185	0.109	0.064	1			
Over all	$\mathbf{0.819}^{**}$	0.000	$\mathbf{0.921}^{**}$	0.000	$\mathbf{0.836}^{**}$	0.000	$\mathbf{0.863}^{**}$	0.000	$\mathbf{0.497}^{*}$	0.000	1	

Note: 1. ** Correlation is significant at 0.01 level, 2.* Correlation is significant at 0.05 level, 3. Statistically significant in bold, 4. r = correlation, 5. p = p value. (N = 290)

From the Table 2 it is understood that the dimensions personal traits, planning, organizing and communication are positively correlated with overall job performance at one per cent level of significance and the dimension organizational climate at five per cent level of significance. The dimension planning shows a significant correlation with the overall job performance with the highest correlation coefficient of 0.921 at one per cent level of significance.

On analyzing the relationship among the dimensions personal traits with planning, organizing, communication and organizational climate shows a significant correlation coefficient at one per cent level of significance. Likewise the dimension planning with other dimensions shows a significant correlation coefficient at one per cent level of significance. The dimension planning shows a high degree of positive correlation with the dimension organizing with a correlation coefficient of 0.916 at one per cent level of significance. The dimension organizational climate is have significant correlation with the dimensions personal traits and planning with a correlation coefficient of 0.386 and 0.210 respectively and significant at one per cent level of significance, which is also the least significant correlation coefficient.

Relationship Between Previous Occupational Experience and Job Performance Among The Woman Employees

An effort has been made to know the

relationship between the previous occupation and job performance by framing null hypothesis that, there is no significant difference between previous occupational experience of the woman employees and their job performance. To test the null hypothesis, t-test was administered. The mean, standard deviation and the results of t-test for each dimension and for overall job performance is depicted in the Table 3.

Table 3 Relationship between Previous Occupational experience of Woman Employees and their Job Performance

Sl.No.	Dimensions of Job Performance	Previous Occupation				t - value	p - value	Result
		Yes (N=54)		No (N=236)				
		Mean	SD	Mean	SD			
1.	Personal Traits	4.18	0.373	3.67	0.654	5.533	0.000	S**
2.	Planning	3.98	0.462	3.76	0.530	2.909	0.004	S**
3.	Organizing	3.90	0.540	3.81	0.563	1.063	0.289	NS
4.	Communication	3.93	0.599	3.79	0.603	1.492	0.137	NS
5.	Organizational Climate	3.88	0.550	3.47	0.706	4.021	0.000	S**
Overall Job Performance		3.97	0.409	3.70	0.467	3.989	0.000	S**

Note: 1. S – Significant, NS – Not significant.

2. ** denotes significant at 1 % level of significance.

It is understood from the Table 3 that, the woman employees who have previous occupational experience secured the highest mean score of 4.18 and 3.98 for the dimensions personal traits and planning respectively. The woman employees who do not have previous experience have the lowest mean score of 3.47 for the dimension organizational climate.

The result of t-test reveals that there is a significant difference among the woman employees, based on their previous occupational experience with the dimension personal traits, planning, organizational climate and with overall job performance, since its respective t-value are significant at one per cent level. Accordingly the null hypothesis is rejected at one per cent level of significance and it is concluded that the woman employees with and without previous occupational experience differ significantly on their job performance. Women with previous occupational experience are performing better than their counterpart without previous job experience.

Conclusion

The dimensions of job performance taken together, the organizing capacity of the woman employees are good as the dimension ranked first among the five with the total score of 11102. The communication skill is also good among the respondents as it ranked second with the score of 11075. The relationship between the dimensions of job performance was examined through correlation and it was noticed that there exist positive correlation between the dimensions of job performance. The dimension planning shows a highest degree of correlation coefficient of 0.921 with overall job performance at one per cent level of significance.

The result of t-test revealed that, there is a significant difference among the woman employees, based on their previous occupational experience with the dimension personal traits, planning, organizational climate and with overall job performance at one per cent level of significance. The woman employees with previous occupational experience are performing better than the woman employees without previous occupational experience.

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A PARADIGM SHIFT IN EMPLOYMENT OF WOMEN FARM LABOUR

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Abstract

Every city in our country owes its success to the contribution of its informal work force which keeps it bristling with activity. A considerable number of this informal work force is the migrant women workers who form a basis for a variety of activity, not only earning for themselves but also contributing to the economic well being of the society. Most of them are from the agricultural sector. Today, the reputation of agriculture as an occupation has taken a severe beating, what with the lower returns, high expenditures and above all insufficient funds in the hands of the farmers. These unfavorable conditions along with unsure monsoons drive the farming community to abandon agriculture in increasing numbers across the country and the villages surrounding Tiruchirapalli in TamilNadu is not an exception. It is this pressing conditions of penury which pushes them to go in search of some other employment in the urban cities. This paper revolves around such women migrant workers in Tiruchirapalli. It highlights the push and pull factors of migration of these workers and how far it is becoming more and more detrimental to the health of our agriculture.

Key words: *Women farm labour, migrant workers, rural - urban migration*

Introduction

India is one of the world's largest and oldest agriculture dependant society, which has remained predominantly rural despite decades of modernization. Actually, every aspect of our country's economy and polity is governed by the performance of our agricultural sector. India's population is expected to increase by 1.50 billion by 2025 and would require 325 million tons of food grains per year. Hence, the country has to increase its food production by 5 million tons per year as against the present rate of 3.1 million tons per year to meet the growing demand. With these challenges ahead, the stability and sustainability of Indian agriculture is of paramount importance than any other field of activity. But a reality check of our present agricultural scenario leaves much to be desired.

Indian agriculture is today in a very deplorable condition. It is bombarded on all sides, with serious problems like improper irrigation facilities, costly seeds and pesticides, low returns and profits and importantly, the increasing shortage of agriculture labour. Of all the problems confronting agriculture today, the most serious issue is the deserting of farm labourers, most especially, the women labourers who are the mainstay of this occupation right from ploughing to picking. Recent evidences suggest that with high insecurity in rural employment coupled with low wages to male members, family migration for employment is becoming increasingly common (Schenk-Sanbergen, 1995; Momsen, 1999; Pamela, 2001)

Agriculture is a highly labour dependant occupation and hence, it becomes quite difficult when there is a labour shortage. This is why our agricultural production has dipped too low than the estimated capacity, resulting in food shortages, price rise and inflation.

Hence, this micro level case study is a humble attempt to investigate the actual and nagging causes of the exodus of women farm labourers to the city of Tiruchirappally from its neighboring villages.

Objectives

1. To investigate the factors responsible for labour shortage in the farm sector around Tiruchirappalli.
2. To study the attendant circumstances for the migration of the sample workers to Tiruchirappalli.
3. To suggest necessary measures to stop the drain of women labourers from the farm sector.

Methodology

This work has been done with the aid of both the primary and secondary data. The source for the primary data is drawn from a sample survey of 50 women migrant workers in Tiruchirappalli city, selected at random, who were previously involved in the farm sector from the nearby villages of Tiruchirapalli. The data seeks to unfold all the important factors in their migration to the city. The secondary data is drawn from a wide variety of sources like research articles from journals, magazines, news reports and websites.

Review of Literature

Afshar (2003) found that for rural families primarily engaged in farming, male migration result in labour shortages and this lead to change in the traditional division of labour in the farm and it will increase women's farm workload. Migration, therefore, has an inverse relationship with agricultural productivity in the sense that as migration increases, agricultural productivity decreases.

According to Dugbazah (2008), Rural-urban migration has had profound influence on village communities, as more men than women left the rural areas, leaving imbalances in sex ratios, particularly among working age groups. She further stated that the consequence of rural urban migration on agriculture is important for the sustainability of agricultural livelihood in the villages. The extent of the impact, however, depends on various factors, including the seasonality of movement, length of time spent away, an ability to maintain labour inputs and to invest productively in agriculture, and the availability of social structures allowing women to strategize and pursue diverse livelihoods effectively.

Anamica (2010) stated that, most of the respondents (95.56%) have taken up nonagricultural work in the migrated destination.

Factors responsible for labour shortage in farm sector around Tiruchirappally:

As per the census of 2011, 263 million people were engaged in the agriculture sector and only half of them are still continuing as agricultural labourers, a trend observed for the first time in the past 40 years, registering a decadal decline of 3.6 percent in India's agricultural labour force. There are many scholarly papers which points it's fingers at the under-employment of agricultural workers. But actually, it is the under-pay which is the real issue, rather than under-employment. Although, MNREGA has raised the actual wages of agricultural and manual workers for works other than agriculture, it has not stopped the migration of field hands to the cities. Besides, migration and urbanization, MNREGA and other public works have also played an important role in the shifting of labour from agricultural to non-agricultural jobs. This is not because there is not enough work, but because the wages and incomes are low compared to the city. The proportion of rural males engaged in agriculture declined from nearly 66% in 2004-05 and 2007-08 to 63% in 2009-10 while the share of rural females declined from 83.3% to 79% in 2009-10. This can be attributed to the combined effect of migration from rural to urban location creating of casual employment in MNREGA schemes and other public work in the villages.

Reason for rural to urban migration:

A large number of micro studies carried out in different regions of India have concluded that the search of employment opportunity is the major reason behind migration from villages. Economic deprivation in the form of landlessness or skewed distribution of land, inadequate farm land, low fertilizer, livestock and other basic household assets necessitate the need for the rural people to migrate to the cities. The introduction of machines in the agricultural sector has also rendered a surplus of rural labour and a decrease in the land labour ratio, which has made it difficult for the rural workers to eke out a basic livelihood. Apart from push factors, available employment opportunities in the cities act as pull factors for this migration. Again, the difference in relative wages is one of the main factor influencing rural-urban migration. But the wage rates for females under MNREGA is higher than in other public works in the urban areas. Hence, the wage rates are found to be more attractive by rural females under MNREGA projects, whereas, males find wage rates in urban locations more lucrative. Therefore, the migration of rural workforce starts with the male members, followed by their female counterparts. The tertiary sector in big cities also attract migrants from backward region and these migrant workers are engaged in a variety of occupations like manufacturing, construction, in security agencies, coolies and domestic workers etc.

To know about the status of migrated women, a survey has been conducted with 50 random samples of migrated women workers to Tiruchirappalli. It is found out from the survey, that out of 50 women migrant workers, a majority of 39 women have undertaken domestic work, while the rest were found divided between construction work(7) and as shop assistants(4). Migration for domestic service is largely a female driven phenomenon, where migration is primarily due to employment availability for women.

Table 1 Reason for migration

Reason	Number of workers	Percentage
Poverty	50	100
Unemployment	47	94
Natural calamity	35	70
Family disturbance	25	50

Source : Primary Data

In India ,our agricultural practices are often dependent on monsoon conditions. The unpredictability of monsoon is an important push factor that turns a majority of farm workers to become migrants(100%) along with their entire family in search of livelihood. Another important reason for migration(94%) is the non viable condition of most of the village and cottage industries which has pushed its workers into unemployment. The occurrence of natural calamities like famines is an important factor for the families in the villages(70%) to turn to the cities. Another finding in the study is that 50% of women have migrated due to various kinds of pressures within their own family such as the sudden demise of the bread winner of the family, threats from money lenders, some superstitious beliefs etc. This kind of situation pushes the women folk in the migrant families to turn as women domestic workers, to supplement their family income.

Pull factors for migrant workers :

While a majority of the respondents (78%)who were employed as domestic workers happened to endorse the following pull factors, women who were involved in construction work(14%) and other occupation (8%) had some differences .the differences related to the hazardous form of work, easy nature of the work, getting paid in kind, patronage from the employer devolping rapport.

Table 2 Pull factors for migrant workers

Pull factors	Number of respondents	Percentage
More demand	49	98
Regular work	41	82
Glamorous city life	11	22
No need to commute	39	78
Good working atmosphere	35	70
Work not hazardous	37	74
Continuous availability of job	39	78
Payment not only in cash but also in kind	33	66
Easy approach for interest free loan from employers	30	60
No strain, work easy	36	72
Work known	39	78
Personal rapport with the employers	32	64
Patronizing attitude of the employers	27	54

Source : Primary Data

The pull factors as far as the domestic work is concerned , appears to be more appealing and stronger than the push factor like a small pin being drawn towards a giant magnet. A perennial demand for the domestic work ensuring the guarantee of employment, the uninterrupted working schedule without any loss of wages as found in other informal occupations, presenting a kind of worker friendly job without being hazardous or obnoxious ,and the familiar nature of the work inside the four walls of the household in itself are some of the popular factors which pull the workers to its fold.(78%) Since domestic work does not involve hard labour these migrant workers find it attractive(72%). Employers, besides ,paying for the workers in cash also pay them in kind. This is an important attraction of the domestic work.(66%). Unlike the difficult, hazardous , and grueling working conditions of other unorganized works like construction, road laying and beedi rolling etc, domestic workers enjoy a comparatively safe and protective environment of a household and that is also an important pull factor.(74%).Living in the close neighborhood of the work place(78%), availability of interest free loans in times of festivals, emergencies etc., also act as another pull factors(60%).The opportunity to build a rapport with the employer(64%), the kind and patronising nature of the employers(54%) overwhelm the workers to the point of making them feel one with their employers and so adds to their obligation to serve the household.

If the above factors were the attractions for domestic workers, the construction workers(14%) were drawn to the city due to the comparatively higher wages, the advantageous of a city living, and a kind of job security besides social security advantages.

Although the percentage of shop assistants in the sample survey is only (8%),they also were committed to their chores as it offered them a regular work with prescribed timings, a standard monthly income, interest free loans from the shop owners , holidays and allowances besides the advantage of a good rapport with the shop owners.

The overall inference from the above sample study indicates a better living conditions in terms of the individual capacity, their migration to the cities have wrecked havoc not only back home in their villages, but also have contributed to a battery of problems to the city life while their absence in their farms has a direct bearing on the decrease in food production.

In the Economist Intelligence Unit food security index, 2016, India ranks a lowly 75th out of 113 nations. As our country's population increases, and people become more prosperous,they tend to consume more and more food. If we hope to measure up to an impending food shortage of a colossal nature, we have got to attend to our farms in right earnest and tackle the problems head on. This requires an immediate halt on migration, if not the return of the farm workers who have already settled in the cities.

Suggestions

1. It is generally believed MNREGA is the cause for both the rural to urban migration resulting in farm labour shortage as well as the an increased cost of cultivation. But actually, the actual reason for labour shortage is the low employment growth rate,low wagerate, less number of person days employment etc. in the agricultural sector. So MNREGA and farm sector should try to solve the problem together curbing migration and consequently its ill effects as well as increasing the living standard of rural labourers.
2. Implementation of MNREGA with its full potential will help in pulling out a large number of migrated farm workers and landless labour who have been in distress condition for long.
3. Farm sector , instead of trying to bring down the wage rate of workers, should try to increase its productivity to bring down the cost of cultivation. The main reason for shift in employment is the decrease in the employment period in agriculture.
4. The MNREGA work should be kept in such a way that it does not clash with the peak period in agriculture, so that the workers are available for MNREGA in the off season and the employment days for the rural labourers will increase.

Conclusion

Agricultural work is a group work and is seasonal. It cannot be done by an individual as and when he decides, at whatever time he or she chooses. During critical operations more hands are needed and at other times they may not have much work. Often. the farmer needs to employ both his family labour as well as hired workers. But if the workers are not available at such critical times, the work simply cannot be done. Some of the urgent measures required to prevent the women farm workers from leaving the villages is to resettle them from the cities with improved working conditions , giving proper training for improving their skill, increasing the period of public works programmes, ,regulating their hours of work, providing farm loans at lower rates of interests, encouraging co-operative farming and improving their bargaining power in wage fixation. Providing job security and extending the much needed legal protection to them would certainly stop the exodus of the women farm workers and thereby avoid any further shortage of women labour.

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THEORTICAL REVIEW OF HUMAN RESOURCES MANAGEMENT POLICIES IN SALEM STEEL PLANT

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ABSTRACT

Human Resources Management (HRM) is the term used to describe formal systems devised for the management of people within an organization. Every organization has a set of ideal policies and practices which are applicable even to a average workman, sometimes number of conflicts are arises between the management and employees like productivity, groupism,economic loss, high rate of labour turn over and loss of reputation etc. Salem Steel Plant is a unit of Steel Authority of India Limited (SAIL), a Government of India Enterprise, with its Head Quarters located at New-Delhi. A Steel plant in Salem was a long cherished dream. Government of India decided in May 15, 1972 to set up an integrated special steel plant at Salem in the state of Tamil Nadu. The construction of the plant was inaugurated in June 13, 1972 by the state late Shri Mohan Kumaramangalam, the then minister for steel and mines. Salem steel plant is one of the remarakable organisation following human resources management policies. Let us discuss about the management policies of human resources in Salem steel plant they are recruitment and selection, training and development, pay, allowances, welfare facilities, promotion, performance appraisal, safety measures, grievance redressal, trade union & awards. Finally conclude that the organization continues the same stream human resources management in future it may be achieved many glorious things.

Key words: *formal, human resources, policies, future, glorious.*

Introduction

Human Resources Management (HRM) is the term used to describe formal systems devised for the management of people within an organization. These human resources responsibilities are generally divided into three major areas of management: staffing, employee compensation, and defining/ designing work. It is needless to say that man or human resources has occupied pivotal position in the organisation over rest of items like materials, machines, methods, money and motive power. The valuable asset i.e., human resources are utilized to the maximum extent possible to achieve individual and organisation goals. With a view to attain the said goal the organisation shall employ all the techniques which are necessary to develop the HRM the development of right people at a right time and at right place will help the organisation to enhance its productivity and profitability.

Profile of Salem Steel Plant

Salem Steel Plant is a unit of Steel Authority of India Limited (SAIL), a Government of India Enterprise, with its Head Quarters located at New-Delhi. A Steel plant in Salem was a long cherished dream. Government of India decided in May 15, 1972 to set up an integrated special steel plant at Salem in the state of Tamil Nadu. The construction of the plant was inaugurated in June 13, 1972 by the state late Shri Mohan Kumaramangalam, the then minister for steel and mines. Salem Steel Plant was commissioned on schedule date i.e. September 13, 1981.by shri AS. Gill, secretary. Department of steel and mines. Government of India and the production was commenced. The plant was formally inaugurated on March 13, 1982 by shri Narayana Datt Tiwari, the then Hon'ble minister for industry, steel and mines, Government of India. It produces hot rolled Stainless steel and carbon steel coils of various grades by processing slabs. Hot rolled Stainless steel coils are further processed to produce cold rolled stainless steel coils, Sheets and blanks of various grades. The Plant has around 1344 employees on its pay roll and most of them are with good educational and training background. Since inception, SSP has built up a reputation for its good product quality. SSP's product "Salem Stainless" is a household name in the country.

Human Resources Management in Salem Steel Plant

Every organization has a set of ideal policies and practices which are applicable even to a average workman, sometimes number of conflicts are arises between the management and employees like productivity, groupism, economic loss, high rate of labour turn over and loss of reputation etc. In this aspect we can say that the human resources management is the precious assets and only the active factors in the factor in the factors of production. Hence almost all industrialists even in developed countries are recognizing their human resources by and large extent. Salem steel plant is one of the remarakable organisation following human resources management policies. Let us discuss about the management policies of human resources.

Recruitment and Selection

The Salem Steel Plant recruits from internal and external sources. The recruitment within the organization is being made on the basis of employees, qualifications, skills and job requirements. The various external recruitment sources of Salem Steel Plant are advertisement, written test, interview and medical examination. The Salem Steel Plant various steps in the selection of employees they are as follows, scrutinizing the application form, conducting written test to assess the candidates ability in various fields/areas, conducting interview and medical examination.

Training and Development

Human resources development center caters all the training needs of all the departments of Salem Steel Plant. Training is imparted to the employees to upgrade the skill, refresh the standard, operating practices etc. Salem Steel Plant training department takes the faculty support of experts from the user departments. SSP have development a dedicated team for conducting training on various subjects.

Basic Pay

Salem Steel Plant employees get salary 7th day of every month. In case of Sunday or government holiday the salary will be 6th day of month. The basic pay will be differing according to the grade.

Promotion

Promotion is a positive motivation to the workers when the workers are promoted to next higher grade they will be motivated, the production also increases.

The following are the factors to consider for the promotion. It may vary according to the grade of promotion.

- Job performance
- Attendance and Punctuality.
- Discipline
- Safety and Housekeeping.
- Quality of Output.
- Quantity of Output.
- Job knowledge and Skill
- Dependability
- Co-operation
- Initiative and Resourcefulness.
- Ability to Supervise
- Ability to Analyze.

Performance Appraisal

Non executives are promoted according to their performance. The appraisal is made at the end of every calendar year. The head of the department is responsible for the assessing the performance of the employees. The performance review committee will allot points to the employees and this will be converted in to grades.

Allowances

- **Dearness Allowance**

As per the SSP directions D.A is fixed for a particular period. SSP calculating the DA from the current details.

- **House rent Allowance**

Salem Steel Plant increases the HRA for all cadre employees in the year 2010 march.

- **Scooter Allowance**

Scooter Allowance of Rs 575 to 1000 per month is paid to SSP employees for maintenance of scooters.

- **Moped Allowance**

Moped Allowance of Rs. 360 to 630 per month is paid to SSP employees.

- **Travelling Allowance**

Travelling allowance revised to the employees as Rs. 600 per month.

- **Washing Allowance**

Rs 50 to 100 per month are paid for all employees who have been awarded free supply of uniforms by the company. It is only for male employees. Washing allowance is Rs 60 to 150 per month are paid for hospital nurses.

- **Mining Allowance**

Mining allowance is paid for all employees are Rs 600 per month

Welfare Facilities

- **Medical facilities**

Salem Steel Plant has a separate hospital for the medical treatment of employees and their family members. The hospital is located inside the Mohan Nagar Township. Treatment for almost all types of diseases is given in the hospital

- **Residential Quarters**

A residential quarter is situated away 3km from main plant. The township is well designed with good sanitation facility. The quarter has 4 types such as A type, B type, C type and D type.

- **Cable Connection Facilities**

Salem steel plant provides the money for cable connection to all residential quarters.

- **Transport Facilities**

Employee’s residence was at different place of the Salem. In order to facilities them SSP has made an arrangement with Tamil Nadu state transport corporation –Salem to ply buses from old bus stand during the shift-time.

- **School facilities**

School is located in Mohan Nagar Township. The school name is” Sri Vidya Mandir Matriculation and Higher Secondary School”. The school came into existence during the year 1982.

- **Sports and Games Facilities**

Sports is important for all age group , because it is the only medicine for good health and to develop the medicine for good health and to develop the co-operation among employees.

- **Gym Facilities**

Gym is the functioning in SSP for the benefit of employees and their spouse. The monthly is just Rs.10.

- **Canteen**

SSP has 3 canteens at HRM, CRM, and Administration canteen. Administration canteen is located near administration department outside the plant area .HRM; CRM canteen is located near CRM.

- **Rest Room**

SSP provides rest room to the employees at the time of rest Interval.

Safety Measures

The term accident is used in the sense of injure to the worker occurring during in the course of his employment. In order to avoid or reduce the accident the SSP given safety equipments to their employees such as mask, earmuffs, belts, shields, shoe, helmets.

Grievances Redressal System

Grievance is a complaint stemming from a justice or injury, real or imaginary SSP has its own system of handling grievance.

Trade Unions

Trade unions are organized by workers to solve the labour problems. Various agencies in the field of labour have tried to take the labour have tried to tackle the labour problem. The state has used the methods labour legislation and labour administration. Various labour laws were passed to protect workers and to give them their right.

Award and Reward to Employees

Every year SSP gives this to the employees to motivate their work. Award and reward is given to employees who give fine suggestion which would benefit to the company.

Conclusion

All around of Salem steel plant limited, is a gem of rare brilliance in the grown of public sector organization in India. It is a great blessing to the nation. It has achieved the remarkable task in the field of industrial relations in a very big way. Finally conclude that the organization continues the same stream human resources management in future it may be achieved many glorious things.

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THE EFFECTIVENESS OF TRAINING AND DEVELOPMENT PROGRAMME FOR THE RETENTION OF EMPLOYEES IN SMALL AND MEDIUM ENTERPRISES WITH REFERENCE TO COIMBATORE

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ABSTRACT

Training is the most important factor in the business world because training increases the efficiency and the effectiveness of both employees and the organization. So to improve the organizational performance and the employee performance, training is given to the employee of the organization. The effectiveness of training programmes leads to overall development of employees. This paper reveals the impact of training and development and finds right methods of training programme that gives motivation to the employees. Primary data is collected with a structured questionnaire from thirty employees working in SMEs in Coimbatore. Majority of the respondents feels that training is important to improve productivity, self confidence and self development. It is concluded that Training and Development has positive impact on Organizational Performance

Keywords: *Training and Development, Small and Medium Enterprises, Effectiveness and Retention of employees.*

Introduction

Training has the distinct role in the achievement of an organizational goal by incorporating the interests of organization and the workforce (Stone R J. Human Resource Management, 2002). Now a days training is the most important factor in the business world because training increases the efficiency and the effectiveness of both employees and the organization. The employee performance depends on various factors. But the most important factor of employee performance is training. Training is important to enhance the capabilities of employees. The employees who have more on the job experience have better performance because there is an increase in the both skills & competencies because of more on the job experience (Fakhar Ul Afaq, Anwar Khan).Training also has impact on the return on investment (Richard Chang

Associates, INC.). The organizational performance depends on the employee performance because human resource capital of organization plays an important role in the growth and the organizational performance. So to improve the organizational performance and the employee performance, training is given to the employee of the organization. Thus the purpose of this study is to show the impact of training and the design of training on the employee performance.

Training & development increase the employee performance like the researcher said in his research that training & development is an important activity to increase the performance of health sector organization (Iftikhar Ahmad and Siraj-ud-din, 2009).Another researcher said that employee performance is the important factor and the building block which increases the performance of overall organization(Qaiser Abbas and Sara Yaqoob). Employee performance depends on many factors like job satisfaction, knowledge and management but there is relationship between training and performance (Chris Amisano, 2010).This shows that employee performance is important for the performance of the organization and the and the training & and development is beneficial for the employee to improve

Review of literature

Ullhas Pagey (1981) in his study explained that most of the organisations allocate very little amount in the budget for training. The reason is that the return on training investment is not very apparent.

B.R. Viramani (1984) in his article "Evaluating and Measuring Management Training & Development", has pointed out that the importance of evaluation has been increasingly felt in the field of management education and development. In spite of the felt need for it, there has been very little systematic evaluation of management training and development programmes.

Peter Bramley (1990) in his research opined that the evaluation exercise should be carried out covering the aspects of context, input, reaction and outcome of the training programme. The process of evaluation can be in three stages, pre-training stage, training stage and post-training stage.

Paul.R et al., (1993) in their empirical research work state that textbook treatments of training evaluation typically equate evaluation with the measurement of change and focus on formal experimental design as the mechanism for controlling threats to the inference that the training intervention produced whatever change was observed. outcomes.

Paul L. Garavaglla (1993) says that in order to demonstrate the value of training to an organisation, it's important that the HRD department plans, budgets and implements transfer measures. This study states the methods to ensure that trainees' supervisors provide data about trainees' strengths and weakness, no matter which method is used to measure training; it is better to measure the responses of a similar group that didn't receive the training.

Joseph et al., (1994) in his research tested whether performance feedback on past performance factors within trainees' control would result in heightened production efficacy, goal commitment, positive mood and learning compared to feedback on past performance factors outside trainees' control.

Adrian Thornhill (1994) in his study revealed the various difficulties of evaluating training and suggests what is required to make it more effective. He also discusses the reasons for the absence of, or ineffective practice of evaluation and he wants to identify the evaluation in the context of the nature and meaning of organisational culture from a practical point of view.

Geber Beverly (1995) in his article focused on the pressures on trainers to evaluate training courses in deeper levels: renewed interests of trainers on course evaluation; levels of training evaluation; reasons for neglecting deep evaluations; trainers' efforts to prove training efficiency and advantages of conducting deeper training evaluation.

Carolyn M. Axtell et al., (1996) identified that Managerial support is a key environmental variable affecting transfer and it is important to create a "transfer-friendly" climate. It was predicted that greatest sustained transfer will occur in those trainees who not only initially transfer high level of skills, but also have high levels of self efficacy and motivation to use the skills and work in an environment with greater managerial support and autonomy.

In a survey of 6000 randomly selected SMEs in Great Britain, Matley (2002) found significant differences in owner/manager attitudes and approaches towards training needs of family and non-family employees in their businesses. The needs of family members were seen in terms of firm-specific HRD issues such as succession planning whereas training for non-family employees was focused on individual career needs.

Objectives

1. To find out the effectiveness of training programmes in overall development of skill in employees.
2. To examine the impact of training and development programme in employees.
3. To find out right methods of training programme that gives motivation to the employees.

Research methodology

Descriptive research design is used in this study. Primary data is collected with a structured questionnaire from the selected employees of small and medium enterprises in Coimbatore.

Hypothesis framed and tested

1. The opinion on the training programme does not differ from individuals.
2. The opinion on the impact of training programme does not differ significantly.
3. The overall development of skill levels in employees does not depend on the training programme.

Analysis and discussions

The following table shows the demographic profile of the respondents.

S.No	Demographic Profile of the Respondents		Frequency	Percent
1	Gender	Male	23	76.7
		Female	7	23.3
2	Age	<25	8	26.7
		25-35	8	26.7
		35-45	14	46.7
3	Education	Illiterate	5	16.7
		School	4	13.3
		Diploma	11	36.7
		Graduate	8	26.7
		Post Graduate	2	6.7
4	Type of Industry	Manufacturing	11	36.7
		Service	12	40
		Others	7	23.3
5	Nature of work	Manufacturing	5	16.7
		Operator	11	36.7
		Supervisor	8	26.7
		Maintenance	4	13.3
		Others	2	6.7
6	Income	<5000	4	13.3
		5000 - 10000	2	6.7
		10000 - 15000	19	63.3
		15000 - 20000	4	13.3
		>20000	1	3.3
7	Experience	<5 Years	3	10
		6 - 10 Years	13	43.3
		11 - 15 Years	13	43.3
		16 - 20 Years	1	3.3
		Total	30	100

Source: Primary Data

From the above table it is clear that 77 % of the respondents are male and most of the respondents belong to the age group of 35 – 45 years, 37% of the respondents are found to be diploma holders, 37 % of the respondents nature of work is operators and supervisors, 63% of the respondents monthly income is found to be between Rs.15000 to Rs.20000 and their experience is found to be 5 – 15 years.

Testing of Hypothesis

- The opinion on the training programme does not differ from individuals.
- The hypothesis was tested using ANOVA with 5% level of significance, and since the p – value is less than 0.05, we accept the null hypothesis and infer that the

opinion on training programme does not differ from individuals.

- The opinion on the impact of training programme differs significantly with different age group and the age group of 25 – 35 years shows more difference in opinion on the impact of training programme.
- The overall development of skill levels in employees does not depend on the training programme.

Impact of Training Programme

The following table shows the weighted average calculation to identify the impact of training programme.

S.No	Impact	SA	A	N	DA	SDA	WA	RANK
1	Increased salary/wages	10	6	9	4	1	7.3	6
2	Increased job security	3	12	9	3	3	6.6	9
3	Improved work Condition/Environment	9	10	5	6	0	7.5	4
4	Increased job satisfaction	8	12	4	2	4	7.2	7
5	Acquisition of new skills	5	8	12	4	1	6.8	8
6	Updating technology	22	6	1	1	0	9.3	1
7	Improved job performance	6	15	7	1	1	7.6	3
8	Personal hurdle have broken through training	1	7	16	6	0	6.2	10
9	Increased confidence over present job	4	15	9	2	0	7.4	5
10	Bring confidence to get promotion	14	12	2	2	0	8.5	2

Source: Primary Data

From the above table it is clear that the training programme offered by the companies have updated the level of technological knowledge in the respondents followed by building confidence in the employees in performing the task and improving the job performance and work environment.

Hence it is inferred that the overall development of skill levels in employees depends on the training programme.

Findings

1. Majority of the respondents feels that training is important to improve productivity, self confidence and self development.
2. The companies have provided enough training for its employees.
3. The opinion of the respondents towards the duration of training programme is below average.
4. Majority of the respondents' opinion on the impact of training programme is that, the training programme has increased their salary, job security, work conditions and job satisfaction.
5. On the job method of training is mostly preferred by the respondents.

Conclusion

Training and Development has positive impact on Organizational Performance. Discussion of all the results proves the framed hypotheses; all these have positive impact on the Organizational Performance. On the Job Training is very effective, as it create a self confidence and self development in work environment. With new technology updating among employees they feel job security is organization. In on the Job Training, Training Design and Delivery style have significant effect on Organizational Performance and all these have positively impact the Organizational Performance. It means it increases the overall organizational performance.

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INSTITUTIONAL ASSISTANCE FOR WOMEN ENTREPRENEURSHIP IN TAMILNADU

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ABSTRACT

Promotion of women entrepreneurship in India is being undertaken by various national institutions. These institutions focus primarily on counseling, training, handholding, giving guidance on finance, organizing exhibitions, and peer group support and also offering services such as research, consultancy, information, and mentoring for promotion of entrepreneurial culture in the country. Because of this institutional support we are seeing greater interest in the entrepreneurial ambitions of women, and these key actors are collaborating to open doors, increase access, and both empower and enable women to succeed. The present paper is focused on various institutions to promote women entrepreneurship.

Keywords: *Entrepreneurship Development Programme, Micro, Small and Medium enterprises, Financial Assistance, District Industries Centre.*

Introduction

The entrepreneurship movement in India began in the 1960s with the establishment of the National Institute of Small Industry Extension Training (NISIET). It was the first institution to develop an Entrepreneurship Development Program (EDP) model in India. At present, the Ministry of Small Scale Industries (MoSSI) and the Ministry of Agro and Rural Industries (ARI) are the also promoting small-scale industries in India. Under these ministries, the Small Industries Development Organization (SIDO), the National Small Industries Corporation (NSIC), the Khadi and Village Industries Commission (KVIC), the Coir Board, and various national training institutions promote entrepreneurship. It devises and recommends policies to promote entrepreneurship and supports surveys and research activities. Grants are provided to reputable organizations engaged in entrepreneurship development for organizing workshops and seminars and conducting research on entrepreneurship development. Various schemes with special benefit are provided to women entrepreneurs to uplift their entrepreneurship.

Women Entrepreneurs

An entrepreneur is a director who combines various factors of production to produce a socially viable product. Women entrepreneurs are 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. In terms of Schumpeterian concept of innovative entrepreneurs, women who innovate, imitate or adopt a business activity are called women entrepreneurs.

Women Entrepreneurs may be defined as "a woman or group of women who initiate, organize and co-operate a business enterprise." Government of India has defined women entrepreneurs as "an enterprise owned and controlled by a woman having a minimum financial interest of 51% of the capital and giving at least 51% of the employment generated in the enterprise to women."

Review of Literature

Jayan (2013) had observed that today with the growth of Micro, Small and Medium Enterprises, many women have plunged into entrepreneurship and also running their enterprises successfully. It shows that the trend in growth of small scale industries during the last ten years and the level of investment, employment has increased.

Laxmi Parab and **Hyderabad (2014)** had examined that the women entrepreneurs are having awareness and they have availed the benefits of the government programmes and schemes. Institutions should also lay more emphasis in providing quality improvement through the adoption of latest technology and utilization of modern human resource management practices in imparting necessary training to sample women entrepreneurs.

Mahendran and **Rajan Babu (2015)** had pointed out the level of satisfaction of financial support and schemes among women entrepreneurs. The industrial policy of the state government should be strengthened to encourage the unemployed person to seek entrepreneurial career by providing financial and non – financial assistance.

Parimala Devi (2015) had specified that the strategies and policies which could create an enabling environment for women entrepreneurs in India. It is noted that various National banks, Non Government Organisations and Micro, Small and Medium Enterprises development organizations are conducting Entrepreneurship Development programmes who may not have adequate educational background and skills.

Ponsindhu and **Nirmala (2014)** had explained the available schemes and subsidy in Micro, Small and Medium Enterprises to existing and budding women entrepreneurs. The existing women entrepreneurs are availing the schemes like Micro and Small Enterprises Cluster Development Programme, Technology Up gradation and marketing development export promotion etc. with special subsidies and benefits.

Objectives

To know the institutional support that assists entrepreneurs in India.

To specify the important scheme that helps women entrepreneurs in Tamil Nadu.

Methodology

The secondary data were extensively used to establish the conceptual frame work of the study. The secondary data were collected from various published and unpublished sources such as annual reports of MSME and from relevant Journals and websites.

Ministry of Micro, Small and Medium Enterprises

Ministry of Micro, Small & Medium Enterprises is promoting the growth and development of the MSME Sector through providing support to existing enterprises and encouraging creation of new enterprises. Entrepreneurship development and training is the main element for development of micro and small enterprises, particularly, the first generation entrepreneurs. The main objectives are promoting entrepreneurship for creating self-employment through enterprise creation, facilitating creation of training infrastructure and supporting research on entrepreneurship related issues. Many institutions in state obtained benefits and provided it to their entrepreneurs through MoMSME.

Table – 1 Women Enterprises in India

Size of Sector	3rd Census		4th Census	
	No.	%	No.	%
Registered	137534	10	215000	13.72
Unregistered	926187	10.3	1806000	9.09
Total	1063721	20.3	2021000	22.81

Sources: Annual Report of MSME in various years.

Table-1 indicates that total number of women enterprises in India during the 3rd census and 4th census of MSME. It clearly shows that 137534 women enterprises registered during 3rd census and it was increased to 215000 women enterprises during the 4th census. Unregistered sector of women enterprises is increased from 926187 to 1806000 between the 3rd and 4th census. Presently number of women enterprises is increased. Women are exposing their potentials in entrepreneurial activities because beneficiary schemes and assistance provided by the institutions under the Ministry of MSME.

Entrepreneurship Development Institutions / Centers

National Institute of Small Industry Extension Training is the pioneer training institution in India to have developed an integrated model for entrepreneurship development. It has targeted specific training programs for educated unemployed youth, technical persons, rural youth, women, and artisans. It promotes the implementation of Entrepreneurship Awareness Camps in specialized institutions, Entrepreneurship Development Training Programs, Faculty Development Programs, the Open Learning Programme in Entrepreneurship, and Technology-based Entrepreneurship Development Programs.

The Ministry of MSME has provided the funds to State Governments through various institutions. Tiruchirapalli Regional Engineering College Science and Technology Park (TREC-STEP) got huge funds from the world Bank, European Union etc, based on Governmental support it enjoys and some of its trained entrepreneurs show annual turnover of their individual enterprises running into several crore rupees annually in post-incubation stage.

Table – 2 Institution wise funds received by EDIs from the Ministry of MSME

Name of the Institution Location	Funds received from the state Govt. (Rs. In Lakhs)	Funds received from The Central Govt. as per their response (Rs. In Lakhs)	Funds sanctioned and disbursed by Ministry of MSME (Rs. In Lakhs)
CED –TN Madurai	50	50	50
EDI –TN Chennai	100	100	100
TREC- STED – TN Tiruchirapalli	25	100	100

Sources: Report on the evaluation of ED Institution Scheme – 2008

Table – 2 described the Institution wise funds received by Entrepreneurship Development Institutions from the Ministry of MSME. In Tamil Nadu there are three institutions receiving funds from the State, and Central Government. Centre of Entrepreneurship Development got 50 lakh from state government, 50 lakh from Central government and again 50 lakh sanctioned and disbursed by MoMSME. The Entrepreneurship Development Institution obtained 100 lakhs from state government, 100 lakhs from Central government and again 100 lakh sanctioned and disbursed by MoMSME. The Tiruchirappalli Regional Engineering College Science and Technology Park got 25 lakh from state government, 100 lakh from Central government and again 100 lakh sanctioned and disbursed by MoMSME. These are provided to encourage and promote the entrepreneurship in Tamil Nadu. Infra structure facilities, training programmes are provided to develop entrepreneurship in that particular area. These funds are also utilized as subsidy or grant to the both men and women entrepreneurs.

Women Entrepreneurship Development Programme

The Entrepreneurship Development Institute will organise Women Entrepreneur Development Programmes [WEDPs] in order to create a business environment that encourages the initiative of rural and urban women entrepreneurs and to enhance the human and institutional capacities required to foster entrepreneurial dynamism and enhance productivity.

Entrepreneurship Cum Skill Development Programmes for Women

The Women Entrepreneur Development Programme aims at providing entrepreneurship training to women, mentoring women entrepreneurs and technical skills upgrading. The WEDPs will help women entrepreneurs to improve their production processes and management techniques and support their initiatives to start new enterprises. The Entrepreneurship cum Skill Development Programme (ESDP) will combine skill training in a variety of sectors with modules in management, marketing, finance and business plan preparation to help women set up skill based enterprises.

Tamilnadu Small Industries Development Corporation Ltd

The TANSIDCO was established on 16th March1970 by the Government of Tamil Nadu with the main objective of assisting and promoting the interests of Micro, Small and Medium Enterprises in the State. The activities of SIDCO are formation and maintenance of Industrial Estates, Raw Materials Distribution, Assistance in Marketing through Marketing Assistance Scheme and Formation of Clusters and Common Facility Centres.

Establishment of Industrial Estates

Industrial Estates provide the basic infrastructures like, Roads, Street lights, Water supply system, Storm Water Drainage, Sewage system and other facilities like Canteen, Banks, Post & Telegraph Office, Telephone Exchange, Fire Station, Police Station, Parks, Dispensary, Common Creche for children for the benefit of both men and women entrepreneurs and employees.

Table – 3 Women Industrial Estates in Tamil Nadu

Name of the Industrial Estate	Year of formation	Area (in Acres)	No. of Plots Developed
Thirumullaivoyal, (Thiruvallur District)	2001	225.80	785
Thirumudivakkam, (Kancheepuram District)	2002	10.75	76
Valavanthankottai, (Trichy District)	2003	51.70	110
Karuppur, (Salem District)	2004	51.74	154
Kappalur, (Madurai District)	2008	18.45	70
Total		**358.44**	**1195**

Source: Tamil Nadu Small Industries Development Corporation Ltd.

Table 3 indicates that the various Women Industrial Parks in Tamil Nadu with its formation. To encourage women entrepreneurs, Women Industrial Parks have been developed in five places. Karuppur (Salem Dist.), Valavanthankottai (Trichy District), Thirumullaivoyal (Thiruvallur District), Thirumudivakkam (Kancheepuram District), Kappalur (Madurai District). To ensure participation of all sections of the society in the industrial development of the State, priority is given in allotment of 30% for Women Entrepreneurs.

District Industries Centers (DIC)

The District Industries Centers (DIC's) programme was started in 1978 with a view to provide integrated administrative framework at the district level for promotion of small scale industries in rural areas. Registration of small industries is done at the district industries centre and PMRY (Pradhan Mantri Rojgar Yojana), PMEGP (Prime Minister Employment Generation Programme), UYEGP (Unemployed Youth Employment Generation Programme) and NEEDS (New Entrepreneur cum enterprise Development scheme) are also implemented by DIC. Management of DIC is done by the state government. It guides entrepreneurs for selecting proper machinery and equipment, procedure for importing machineries and for marketing their products.

Tamilnadu Corporation For Development of Women (TNCDW)

The Tamil Nadu Corporation for Development of women (TNCDW) was established in 1983 with the objective of socio-economic development and empowerment of women in the society. The Corporation implements Mahalir Thittam, International Fund for Agricultural Development (IFAD) assisted Post-Tsunami Sustainable Livelihoods Programme and also SGSY, a major anti-poverty programme meant for self employment of rural poor. TNCDW is encouraging SHG movement and qualitative change in the lives of women through its definitive interventions over the last two decades.

Mahalir Thittam: The scheme was implemented with the aim of focusing women's empowerment and socio-economic development for women. The Programme is implemented in partnership with NGOs and community based organizations which are affiliated with TNCDW after due process. Presently more than 3, 91,311 SHGs have been formed as on March 2009 with 62.93 lakh women members and with total savings of 2167 crores.

Trade Related Entrepreneurship Assistance and Development Scheme for Women

The Government of India has introduced this scheme for the development of women entrepreneurship especially in the most disadvantaged and oppressed section of women in our country. This scheme is functioned for illiterate and semi literate women of rural and urban areas in order to alleviate their problems related to trade. The scheme envisages economic empowerment of such women through trade related training, information and counseling extension activities related to trades, products, services etc. The Government has provided as Grant up to 30% of the total project cost as appraised by lending institutions which would finance the remaining 70% as loan Assistance to applicant women in the form of collaterals. The GOI grant would be maximum up to Rs. 12 lakhs (30% of Rs. 40 lakhs).

Table – 4 Year-wise performance of TREAD Scheme (12th plan)

Financial Year	Expenditure/GoI Grant Released(Rs. In Lakh)	No. of Women beneficiaries assisted for Self Employment
2013-14	233.40	5455
2014-15	254.20	8265
2015-16(till 31.12.15)	190.77	3500
Total	**678.37**	**17220**

Source : MSME at a glance 2016

Table 4 depicts that year wise performance of TREAD Scheme during the 12th five year plan. In the year 2013-14, 5455 women had assisted for self employment and the Government of India spent Rs. 233.40 lakh for their training expenses and as grant released. In the year 2014-15, 8265 women had assisted under the scheme of self employment training programme and the government also spent Rs. 254.20 lakh for their welfare. In the year 2013-16 (till 31.12.2015), 3500 women had assisted for self employment and benefited Rs. 190.77 lakh as grant by the Government. Women beneficiaries are increased by year by year. They had got assistance, training, government grant, loan recommendations for self employment under the scheme. Women owned enterprises are increased because of this scheme successfully executed by the government.

Suggestions

- Women are exposing their potentials in entrepreneurial activities with the help of beneficiary schemes and assistance provided by the institutions under the Ministry of MSME.
- Entrepreneurship development Programmes should be arranged more for the development of women entrepreneurship with upgrading technical skills.
- Entrepreneurship awareness camps, training programmes, technology based development programmes should be provided more to women entrepreneurs to uplift their efficiency.
- Government's grant and loan recommendation to women entrepreneurs should be increased to make them successful.

Conclusion

Women entrepreneurship has been developed all over the state because the efforts taken by various institutions and schemes of state and central government. Ministry of MSME has provided subsidy to entrepreneurs for promotion of entrepreneurship. It has been granted special benefits to women entrepreneurs for their upliftment, it increases the women enterprises. Entrepreneurship Awareness Camps in specialized institutions, Entrepreneurship Development Training Programs, Technology-based Entrepreneurship Development Programs, and WEDP, EDSP especially for women are increased the rate of women entrepreneurship in India year by year. Institutions received funds from state and central governments for providing infra-structural facilities, training programmes to both men and women entrepreneurs. To encourage women entrepreneurs, Women Industrial Parks have been developed by SIDCO. TNCDW has encouraged SHG through Mahalir Thittam for socio-economic development of women. DICs have also supported and assisted the entrepreneurs through various schemes of state and central government. Now-a-days these institutions helped to develop women entrepreneurship in our country**.**

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STRESS REACTIONS AMONG BANK EMPLOYEES IN THOOTHUKUDI DISTRICT

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Stress has become a serious concern of every human being. Once he is under the sway of stress his creativity is handicapped and productivity automatically declines. Stress can be caused by physical elements such as bacteria, heat, cold, bone fracture, noise crowding and drugs. However stress can also be caused by psychological factors such as worry, anxiety and guilty. In other words stress is multiply determined.

Keywords : *industrialization, Urbanization, stress, time pressure, mid-career crisis*

Introduction

Modern life is full of stress. As the organizations become more complex the potential for and amount of stress increases. Stress is the inevitable byproduct of industrialization. India wanted to achieve self-sufficiency for all its basic needs in the shortest possible time and embarked on a programme of rapid industrialization. While it is easy to install a machine, but the life of the employee who works these machines is not a bed of roses. Urbanization, industrialization and increase in scale of operations in the society are causing increasing stresses. People feel stress as they can no longer have complete control over what happens in life. The telephone goes out of order, the power is shut off, water supply is disrupted, expected, promotion is denied, the son or daughter does not do well in school, prices of essential commodities increase disproportionate to the income and so on and on, we fell frustrated and then stressed. There is no escape from stress in modern life. We need to find was of using stress in a productive way, reducing dysfunctional stress and dealing effectively with it.

Statement of The Problem

Bank jobbers considered as white collar workers cannot escape from the doom of stress. Stress for them has been associated with decision making and its consequences, responsibility for people, heavy demands for co-operation between superiors and subordinates, time pressure, fear of failure, fear of poor performance, mid-career crisis from lace of promotion and management of a work force with rapidly changing values.

The reasons for studying stress can be summed up as follows.

- Stress and health
- Financial impact
- Organization effectiveness

Objectives of The Study

The following are the main objectives for undertaking this study.

1. To identify whether the employees in the bank under study are under stress or not.
2. To measure the quantum of stress an employee is under using rating scales.
3. To find out the extent to which the various stress sores form a source of stress to the individual.
4. To suggest measures to overcome stress.

Methodology

This study is based on both primary and secondary data. The primary data required information were collected from employees of State Bank of India in Thoothudi District with the help of comprehensive questionnaire. 80 questionnaire were distributed among clerks and officers both men and women among the various branches of State Bank of India in Thoothukudi District. The sample was selected on the basis of convenient sampling method. The study was conducted during the period of 2016. The data were collected, coded, tabulated and presented in a master table, sub tables were prepared. The statistical techniques Chi-square test used in this study.

Source of Stress

Stress has become a serious concern of every human being. Once he is under the sway of stress his creativity is handicapped and productivity automatically declines. Stress can be caused by physical elements such as bacteria, heat, cold, bone fracture, noise crowding and drugs. However stress can also be caused by psychological factors such as worry, anxiety and guilty. In other words stress is multiply determined.

Analysis of Data

Stress cannot be accurately measured or identified. The effects of people under stress in an organization are reflected in poor performance withdrawal – both physical and psychological. Physical withdrawal is indicated by high absence, tardy quit rate, psychological withdrawal is indicated by day dreaming and fantasizing, less inducement in the job and people around appearing not to care about the work.

The sources of stress which affects the employees' performance are studied under the following heads.

1) Personal factors, 2) Role ambiguity, 3) Role conflict, 4) Career development

Table 1 Personal factors

S. No.	Factors		Respondents		Percentage
			Male	Female	
1.	Age	21 – 30	12	20	40
		31 – 40	24	16	50
		Above 41	06	02	10
		Total	**42**	**38**	**100**
2	Educational Qualification	Graduates	32	26	73
		Post – graduates	10	12	27
		Total	**42**	**38**	**100**
3	Family size	1 – 3	16	20	50
		3 – 5	24	16	45
		5 – 8	02	02	05
		Total	**42**	**38**	**100**
4	Category	Officers	20	22	52
		Clerks	22	16	48
		Total	**42**	**38**	**100**

From Table 1 it is clear that 50 percent of the respondents belong to the age group of 31 – 40years, 40 percent of the respondents belong to the age group of 21 – 30years and 10 percent of the respondents belong to the age group of above 45 years,

73 percent are graduates and 27 percent are post graduates. 50 percent of the respondents belong to small families with less than 3 members and 5 percent to large families with more than 5 members.52 percent are officers and 48 percent are clerks among which 47.5 percent females and 52.5 percent are males.

Role Ambiguity

A role is set of expectations about the behaviour of an individual occupying a certain position. These expectations are usually communicated to the individual by members of his or her role set the people with whom one regularly interactive in that role.

The following table presents the

comparative figures of role ambiguity faced by the bank employees.

Table 2 Role of Ambiguity

S. No.	Scores		Employees		Percentage
			Male	Female	
1.	Role ambiguity of male and female bank employees	0 – 10	10	16	32
		10 – 24	26	22	61
		Above 25	06	-	07
		Total	**42**	**38**	**100**
	Scores		**Officers**	**Clerk**	**Percentage**
2	Role ambiguity of officers and clerks	0 – 10	10	18	35
		10 – 24	26	20	57
		Above 25	6	-	8
		Total	**42**	**38**	**100**

From the above tables it is found that 32 percent of the employees experience low stress out of which 10 employees are males and 16 employees are females, 61 percent of them experience moderate stress out of which 26 percent are males and 22 percent are females. Only 07 percent of the respondents all of which are females experience high stress due to the role ambiguity.

From the above it is inferred that bank employees are not completely free from stress.

It table shows that Officers have more stress because of role ambiguity than clerks. 57 percent officers experience moderate stress and 8 percent say they have high stress while no clerk has reported high stress.

Role of Conflict

Role conflict is associated with greater levels of inter personal tension, lower job satisfaction, lower levels of trust and respect for persons exerting the conflicting role pressures and decreased confidence in the organisation.

Table 3 Role of Conflict

S. No.	Scores		Employees		Percentage
			Men	Women	
1.	Role conflict of men and women bank employees	0 – 10	07	13	25
		10 – 24	35	25	75
		Above 25	-	-	-
		Total	**42**	**38**	**100**
	Scores		**Officers**	**Clerk**	**Percentage**
2.	Role conflict of officers and Clerks	0 – 10	12	08	25
		10 – 24	30	30	75
		Above 25	-	-	-
		Total	**42**	**38**	**100**

This table denotes that men employees have more role conflict than 35 men employees experience moderate stress. This is due to the fact that Indian men have to play several roles.

Both officers and clerks experience moderate stress in role conflict. So the nature of work does not interfere with the variety of roles a person has to play as far as bank employees are concerned.

Career Development

This relates to the opportunities provided by the organisation for advancement and achievement. On the job, business firms can help the proper climate for developing high achievement by giving people job.

Table 4 Career Development

S. No.	Scores		Employees		Percentage
			Men	Women	
1.	Career Development stress of men and women bank employees	0 – 10	02	10	15
		10 – 24	30	23	66
		Above 25	10	05	19
		Total	**42**	**38**	**100**
	Scores		**Officers**	**Clerk**	**Percentage**
2.	Career Development stress of officers and Clerks	0 – 10	09	13	28
		10 – 24	30	15	56
		Above 25	03	10	16
		Total	**42**	**38**	**100**

The above table denotes that men are greatly stressed than women employees. Men feel that they lack opportunities for advancement in the present job.

Clerks lack opportunity for achievement. The tasks assigned to them are not challenging. they are not able to develop their career to the extent they desire.

Amount the officers it is to be seen whether men or women are more stressed.

Measuring The Stress Load and Personal Factors of The Bank Employees

Chi-square is applied to the test the hypothesis. The table 5 below depicts the relationship between the personal factors and the measuring the stress load of the bank employees in Thoothukudi District.

The Null hypotheses framed for this purpose is “there is no significant relationship between the level of measuring the stress load of the bank employees and personal factors of the bank employees Thoothukudi District".

Table 5 Consolidated results of Chi – Square Test

S. No.	Personal Factors	Table Vale at 5% level	d.f.	Calculated value	Inference
1	Gender	3.84	1	73.13147	**Significant**
2	Age	9.49	4	809.01507	**Significant**
3	Educational Qualification	3.84	1	390.645	**Significant**
4	Family size	9.49	4	189.475	**Significant**
5	Category	3.84	1	172.75384	**Significant**

From the above table 5 it is clear that the calculated value was less than the table value for Gender, Age, Educational qualification, Family size and Category of the bank employees. Thus the null hypothesis was accepted and concluded that the no significant relationship between the level of measuring the stress load of the bank employees and personal factors of the bank employees in Thoothukudi District.

Organisation Techniques to Measures to Cope With Stress

1. Emotional climate control

Because one of the stressors of modern organizational life is change, the organisation must provide sufficient support to enable employees to adapt to change.

2. Provision of social support

Social support can reduce one's vulnerability to stress. Organisation can enhance social support by facilitating the cohesiveness of work groups and employees.

3. Redefinition of employees roles

To reduce the stress caused by role ambiguity managers must clearly state to their subordinates with is expected of them and what the precise scope and responsibility of their jobs.

4. Elimination of work overload and under-load

Proper selection and training, equitable promotion wise decisions and fair distribution of work can do must to eliminate these causes of stress.

5. Provision of assistance to stressed employees

More and more organizations today are recognizing the harmful effects that stress can have on employee health and productivity.

Conclusion

Stress can be extremely pleasant and exciting stress is essential to daily living. It's driving constructive be behind creativity and achievement in business, science, arts, sport and other endeavors. Stress can be extremely unpleasant and destructive, however, when it's caused by fear, disastrous sickness loss, physical injury, the death of a loved one these extreme stresses usually cause the body to react more severely.

Most people are exposed to similar stressful stimuli. One person takes it easy for another it is a deep anxiety. The difference in reaction depends on how the person perceives the problem that causes stress.

Though stress cannot be accurately measured or identified an attempt was made to find out the extent to which the various individual stressors were a source of stress to the bank employees to both clears and officers belonging to both sex.

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SUSTAINABILITY OF MICRO ENTERPRISES AND ITS ROLE TOWARDS ECONOMIC DEVELOPMENT

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Abstract

With an Indian rural population of 85%, the thrust is on rural development for its upliftment. The micro enterprises has been a dynamic sector since independence. The active role of micro enterprises paves way for the creation of low capital investment and remarkable employment openings unlike large scale industries but have an active role in the socio economic development of our nation. The Micro Enterprise emergence generated employment and also leads to Women Empowerment in the course of its process. The national and international studies available on the Sustainability of Micro Enterprises, reduction of poverty, employment and income generation and Women Empowerment sparked few research questions - whether, the Micro enterprises should have sustainability or the micro finance institutions viability of micro enterprises is based on the marketability of the markets. To get solution, it is necessary to study and correlate the above. To understand better an attempt of the analysis of the prevailing scenario has been made which has made it helpful to know about the factors responsible for sustainability of micro enterprises.

Key words: Sustainability, potentiality, Micro Enterprise, Women Empowerment, micro finance institutions

Introduction and Statement of the problem

The oil crunch leading to international crisis in 1970s acted as a catalyst in transforming both the developed as well as the developing countries alike. The developed countries utilized this occurrence as a process for ideally revamping their economies with the existing and available resources paving way for a higher productivity and incomes in the 80s and 90s. The technological advent facilitated a lot of other changes like importance and preference over service sectors vis-à-vis manufacturing sectors. But on the other hand the same occurrence in the developing countries had a cumulative negative impact chain with payment imbalances, low productivity and income but increased poverty. Most of the structural programmes of the developing countries had to revamped to suit the changing conditions on the assistance and guidance of the World Bank, and tried seeking improvements through appropriate policy changes. This state of dependence and insecurity had to be replaced by a state of independence and security, the role of which was aptly taken over by the small scale industries. The role and impact of small scale industries in this restructuring was one of worthy mention.

Further the latest and new technologies call for an emphasis of external economies which demands the scale and scope of production networking. This is only possible by the advent and role of small and medium sized enterprises only and does not require the involvement of very large sized enterprises. The production organization can be done in clusters which can be facilitated through technical, managerial and networking coordination done usually with small groups with socio economic milieu and group dynamics to make this a reality. This is possible when a big organization plans to involve micro units in the production process and a mini production unit of the massive production process. The much required socio economic cultural activities for this process is facilitated by the micro units with the support of extended families, friends and affiliation groups who are informal part and parcel of the micro units and can help assist to bring about significant changes rather than individual capabilities. Further the formation of clusters of these small micro units can act as means to meet the local or regional consumer demands and are significant and have the inherent potential for the assistance of the small industry progress. An observation in China in the 1980s has brought to light that the development of the small and village enterprises paved way for a significant leap in industrial progress. These small enterprises operated as niche teams, serve a very small and a specialized target consumers or local markets, using available local labor and resources but often deliver specialized non-branded requirements or products thereby paving a path for flexible specialization which is a significant feature of small scale enterprises. Flexible specialization is a boon in the current industrial scenario which can be embraced with ease by the small scale industries only unlike the large scale industries which calls for rigid processes which does not facilitate flexible specialization.

Thus it was rightly vouched by Huber Schimitz, one of the pioneers in the field of research in small scale industry and flexible specialization citing the example Kumasi in Ghana. He has observed that the small scale industries exhibited an enormous capability and tenacity to respond to a crisis situation as well as an innovation and openness to collective efficacy with the same integrated spirit. Schimitz after several studies about the African and Asian enterprises came to the conclusion that the basic requirement of competitiveness is to be adaptable to disruptive environment, more predominant in the developing countries than the developed countries. Further small enterprises have in it the inbuilt sectoral agglomeration, conducive for the development of collective efficacy and flexibility. But the innovation part do not necessarily take place in the clusters and enabling or reinforcing this collective efficiency and flexibility is a challenge across the globe. Can the same be enforced through policies that can enhance both the collective efficiency as well as flexible specialization is an uncertain proposition.

The structural reforms do play a role in the reformation of the industrial sector. But the major positive recipient of the structural reforms are the micro enterprises sector which is stated by a study of the United Republic of Tanzania, which were using the local available resources. Further more it was observed that the informal micro enterprises grew very rapidly and in a significant measure with massive increase in the employment labor during the 1985 – 1990, paving way for the forward linkage industries. The potentiality and power of the micro enterprises was also seconded by countries like Zambia, Uganda, Senegal and Ghana. It was found that the major reason for this was that the micro enterprises learnt to survive the crisis by the usage of local and regional resources innovatively . The concept of "learning by doing" also helped the micro enterprises to stay above the surface on the face of crisis. Further the incentives offered for the micro enterprises also helped and served as a multiplier effect. Thus structural reforms do play a significant role in the enhancement of micro enterprises.

Further it was found that micro enterprises which had embraced technological changes to uphold quality sustained as against the ones which failed to do so. Added to these the micro enterprises which joined hands with the big production houses to cater to big needs survived in contrast to the micro enterprises which failed whose preference was a small target group for survival. Internal trade, agriculture linkage, forward linkage industries all helped the micro enterprises to have a strong foothold. Apart from all the above mentioned public restructuring had a significant impact on the existence and survival of the micro enterprises. According the IMF the progress rate of the countries under the structural reforms is 4.2% per annum in the three or four year period as against a 2.6% in the preceding three year period with an increase in the non-traditional exports to its credit. But all these study and observations bring to focus an important aspect of structural reforms that the same has to be in line with the requirement of the small scale industries that is relevant, selective targeting of the potentialities of the small scale industries rather than a generic supply oriented assistance or guidance.

Going by the definition that a small scale business is one that is independently owned but is not dominant in its field, it is but imperative to understand the basis on which the micro enterprises function. This further makes the role of micro enterprises as significant and makes it a breeding ground for progress, an initiator of new ideas and innovations, the bargaining force for cartels and also acts as a means for fair trade practices. The potentiality and presence of the small scale business is on account many factors like individual polity, initiative, entrepreneurship, facilities provided by the government, activities of the cooperative associations, trade union activities and assistance to name a few and not only because of the small scale business policy alone. A US study reveals that only a quarter of the total employment is enabled by the manufacturing sector. In an enterprise comprising of less than 100 people, only 14.7% of the employment is by the manufacturing sector but whereas in the case of an enterprise comprising of less than 50 people it is about 18%. Further construction, trade and service sectors are more conducive for small business. Employment on account of small scale business increased 48.6 million to 50.1 million between 1988 and 1989, where the major contributors were the trade and the services sector. In 1986 enterprises with 500 or more employees contributed to about 65% of the total employment in manufacturing although this number constitutes only 15% of the total number of manufacturing establishments. The micro enterprises related study in the US brought to light a few conclusions which served as eye openers for the lot who were apprehensive about the potentiality and scope of micro enterprises. It stated that micro enterprises facilitated new and massive job opportunities. The reasons were varied like adaptability to flexible specialization, decentralization of activities by large companies, optimum sizes for new products, deregulation of economic activities, managerial techniques favoring small businesses, crisis handling responses etc. to name a few major ones.

The table below rightly brings the distinct variances of the mass producers i.e., the large scale industries, and the flexible specializers i.e., the

Micro or small industries.

Table1: The distinctive features of Large scale and Small scale Enterprises

Mode of Production	Competition	Product Strategy	Attitude To Labor	Division of Labor	Embodied Technology	Factory layout	Inter – firm links
Large Scale	Price	Standardization	Seen as Cost	Single Tasking & Skilling, Hierarchical Communication, quality control, specialized	Special purpose, fixed Transfer line	Functional	Short term
Small Scale	Product Characteristics	Variety, rapid Response, Innovation	Seen as resource	Multi tasking & Skilling, two way communication, trust, Involvement, quality at source, labor as Resource	General purpose, flexible transfer line	Cellular	Close cooperation, long term

Source: R. Kaplinsky, From Mass production to Flexible specialization: A case study from semi industrialized Economy, Institute of Development studies, Sussex, 1991.

Table2: The distinctive features of Micro Enterprises

	Change of Technology	Flexible Specialization	Decentralization
Technical Focus	New technology as an expansion of existing range of techniques	New technology as part of new Paradigm	New technology as an expansion of spatial Technological possibilities
Unit of Analysis	Individual firm	Individual firm as part of a well defined cluster of firms.	Individual firm / community
Organizational Change	No major area	Innovative complementarities	May involve changed relationships between central and dispersed units of production
Geographical Focus	None	Agglomerative Cluster	Dispersion
Inter and Intra firm linkages	In only insofar Differential rates Adoption by small and large firms affect the competitive position of the Former.	Central issue, complimentary and cooperative relationships small scale and large and small scale firms.	Unimportant with dispersed stand alone Adoption or important dispersed Units interact with centrally located units.
Benefits	Increased profits By individual Adopting firms	Collective efficiency, dynamic gains in export markets, externalities.	Regional decentralization and increased equality
Main Constraints	Factors, prices, Skills, information	problems of collective action, government failures to induce cooperative behavior.	Lack of infrastructure and effective demand In dispersed location
Examples	Computer aided manufacturing in newly industrialized countries, micro computer technologies	Prato	Benetton, Micro hydro

Source: Ajit Bhalla and Jeffery James, Micro Economics, Flexible Specialization and Small scale Industrialization in the Third world, World Employment Programme, International Labor Organization (ILO), 1991.

Jeffery James and Ajit Bhalla, are of the opinion that implicit alternative technological and institutional mechanism for the advocacy of new technologies for micro or small enterprises is possible by embracing one or more of the below mentioned aspects.

Decentralization

Flexible specialization

Choice of technology

Conclusion

From the profound observations and study related to small scale industries it is only obvious that the need of the hour is the development of these micro and small enterprises. With numerous policies and interventions on the part of the Government to make this a permanent reality, this is only possible if we understand the potentiality of these micro enterprises and also give it the ground to survive paving way for its sustainability in the long run taking into consideration the factors that will aid this process eternally.

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STRENGTHENING GENDER EQUALITY IN INDIA

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Abstract

India is one among the fast growing economies of the world. It is divided by racial and religion system. India is one of the exemplary nations which have got better position in information and communication technology, science and technology etc. At the same time, gender equality is a major concern in the digitalized society. In this knowledge era, women are on par with men in leading sectors like education, politics, science and technology, business enterprise etc. According to World Economic Forum reported that India's Gender Gap index ranked at 114 out of 142 countries (2014), it reflects that we need to strengthen gender equality and to prevent the gender discrimination. The paper is to explore the current scenario of gender inequality, problem, how to address gender discrimination and to improve the future progress of gender equality.

Key words: *Exemplary, Equality, Discrimination, Vulnerable and Progress.*

Introduction

India is a very great country with multifarious connected people living. India is a second most populated nation after the China. It indicates that India is basically abundant human resources occupied one. Currently, attaining gender equality is a major concern and strives hard to move on this. The development of a country is to attain not only the development in all sectors, but to achieve gender equality also.

In this digitalized era, men and women are survived with variety of segment. At present all sectors are occupied not only by men even women also. But the protection about women is a major problem and equality could be worthless.

Objectives of the Study

To know about the current scenario of gender equality

To understand the problem faced by the gender especially women

To identify the solution for gender discrimination and future progress of gender equality

Data Collection

This paper mainly focused on conceptual framework and certain area we have collected secondary data from Labour Bureau Statistics and Registrar General of India, New Delhi and some articles from different journal and websites.

Current Scenario about gender Discrimination

In this modern era, men and women are managing their life very difficult one. Due to the economic status, education, working environment and family support the gender equality becomes a meaningless. Once upon a time, women could manage and maintain only a family and they never allowed educating and empowering themselves. But at present, women are ready to learn, manage the family, and earn more on their chosen field which could express the empowerment.

Gender equality means both men and women can be treated equally in all circumstances from the point of birth to death. But still now men are played a vital role than women in their respective family. The gender inequality means the men and women are not equally treated and the discrimination among the men and women exist. It leads to men can only face and manage all the matters and women cannot perform anything without a help of men.

The gender equality can be formed through many areas like education, health, work and responsibility. Generally male and female is a component which constitute gender. It can also emphasize the life expectance, literacy rate and workforce and empowerment. Let us discuss deeply one by one.

Life Expectancy

It indicates lifetime of a man and woman which expresses their healthy condition and facilities availed on their own. The Ministry of Health and Family Welfare released the following data:

Census Year	Persons	Male	Female
1951	18.33	27.16	8.86
1961	28.30	40.40	15.35
1971	34.45	45.96	21.97
1981	43.57	56.38	29.76
1991	52.21	64.13	39.29
2001	64.84	75.26	53.67
2011	74.04	82.14	65.46

Source: MH&FW, India

The above data clearly shows that female group of life expectance is much higher than the male group. Hence, the female life expectancy is about 69.6 years in 2011-15 and it is higher than the 67.3 years of male in the same year.

Projection of Level of expectation of Life at Birth in India

States & Union Territories (Over all India)	Male (82.14)	Female (65.46)	Total (74.04)
Tamilnadu	86.8	73.9	80.3
Bihar	73.5	53.3	63.8
Andhra Pradesh	75.6	59.7	67.7
Arunachal Pradesh	73.7	59.6	67.0
Tripura	92.2	83.1	87.8
Mizoram	93.7	89.4	91.6
Lakshadweep	96.1	88.32	92.3
Andaman & Nicobar Island	90.31	81.8	86.3

Source: Registrar General of India

The above table indicates that projection of male and female life expectancy from 2001 to 2025. There is a positive relation between male and female lifetime and mainly female life expectancy is higher than male.

Literacy Rate

The status of educated and un-educated gender is also one of the yardsticks which express the country development and assess the gender disparity also. The following table to exhibit the literacy rate status:

Literacy Rate by Sex – India from 1951-2011

Year	Total/Rural /Urban	Person	Male	Female
1971	Total	33.08	52.61	12.11
	Rural	34.03	53.62	13.42
	Urban	29.34	48.82	6.68
1981	Total	36.70	52.62	19.67
	Rural	38.79	53.77	23.06
	Urban	29.99	49.06	8.31
1991	Total	37.50	51.61	22.27
	Rural	40.09	52.58	26.79
	Urban	30.16	48.92	9.19
2001	Total	39.10	51.68	25.63
	Rural	41.75	52.11	30.79
	Urban	32.25	50.60	11.88
2011	Total	39.8	53.3	25.5
	Rural	41.8	53.	30.0
	Urban	35.3	53.8	15.4

Source: Office of the Registrar General of India

The above table clearly shows that male rate of literacy is increasing tendency, but at the same time the female literacy rate has risen excellently from the year 1991 to 2011. It indicates that the economic reform has stressed and five year plan also supported the female to raise the literacy rate very high from 1991 to 2011.

Selected States and Union Territories of Literacy Rate in India as per 2011 Census

The following table which expresses the top, bottom and medium level of literacy rate registered both states and union territories,

States & Union Territories (Over all India)	Male (82.14)	Female (65.46)	Total 74.04)
Tamilnadu	86.8	73.9	80.3
Bihar	73.5	53.3	63.8
Andhra Pradesh	75.6	59.7	67.7
Arunachal Pradesh	73.7	59.6	67.0
Tripura	92.2	83.1	87.8
Mizoram	93.7	89.4	91.6
Lakshadweep	96.1	88.32	92.3
Andaman & Nicobar Island	90.31	81.8	86.3

Source: Office of the Registrar General of India

The above table clearly noted that Mizoram and Tripura are the highest literacy rate like 93.7 for male and 89.4 for female in India. At the same time, Bihar and Arunachal Pradesh have registered at medium level like 73.5 and 53.3 for male and female respectively.

In the state of Tamilnadu has registered at 86.8 for male and 73.9 for female, it indicates that it has attained progress

The selected Union Territories have also focused here and Lakshadweep has got 96.1 and 88.32 for both male and female respectively.

In this table female literacy rate in overall position registered about 65 but overall state wise Mizoram and Tripura have got better position in female literacy rate like 89.4 and 83.1 respectively. Overall status of literacy rate India as per 2011 census it has 74.04 of which 82.14 and 65.46 for both male and female respectively.

Hence, we need to strengthen the female education at primary to higher level.

Worker Participation in women

Working environment and participation in men and women have also contributed a growth of the country. The following table which specifies the Worker Participation Rate by Sex in India from 1971 to 2011

Source: Office of the Registrar General of

Year	Total/Rural/Urban	Person	Male	Female
1971	Total	33.08	52.61	12.11
	Rural	34.03	53.62	13.42
	Urban	29.34	48.82	6.68
1981	Total	36.70	52.62	19.67
	Rural	38.79	53.77	23.06
	Urban	29.99	49.06	8.31
1991	Total	37.50	51.61	22.27
	Rural	40.09	52.58	26.79
	Urban	30.16	48.92	9.19
2001	Total	39.10	51.68	25.63
	Rural	41.75	52.11	30.79
	Urban	32.25	50.60	11.88
2011	Total	39.8	53.3	25.5
	Rural	41.8	53.	30.0
	Urban	35.3	53.8	15.4

India, Labour Bureau Statistics

The above table indicates that both male and female worker participation rate have increased year wise a year. There is a positive relation between male and female ratio. But the female rate has risen much more part than the male rate. It reflects that female contributions are more than the male part. Hence, the overall position, there is a fluctuation arises in the male part than female worker participation rate.

Problems of Gender Inequality

Gender equality can be attained is not an easy job. It is a herculean task because female has faced many problems than male group.

Therefore, the gender inequality arises because of the following reason:

1. Social Problem
2. Economic Problem
3. Psychological Problem
4. Violence and Crime
5. Harassment
6. Lack of security

The above factors which influenced that the female groups are never compete with the male group.

1. Social Problem

Recognition and status for male and female are always improper and biased one.

Most of the women are highly affected in social problem like late marriage, childless stage, without getting marriage and harassment against women at workplace also. These are the problem which clearly formed the stress and they could not overcome from this issue.

2. Economic Problem

Economic status of men and women are also unequal in nature. Due to lack of responsibility and improper maintenance of family by household head, the whole burden goes to woman of a particular family. It leads to economically woman faces many challenges.

3. Psychological Problem

Most of the women are psychologically vulnerable. Due to domestic problem

Starts from the family, children, in case a woman who can go for job, this is another side problem. Woman has faced many issues like sexual harassment at workplace, stress coming from the workplace as well as family, commitment from the family and entirely woman can get fear.

4. Problem of Violence and Crime

In this knowledge based economy, there are mass violence and crime taking place against women. In the digitalized society, certain culprit or male group take it as a advantage of the modern scientific advancement like Cell phone, Camera which observe once interior information and atmosphere also.

When the advancement is going on one side, there is plenty of violence, sexual harassment and crime takes place against women casually. The entire issue created through mass media and technical development also.

5. Harassment

There are many problems are faced by the young woman in their everyday life. Harassment is mainly occupied between sexual and mental torture. Harassment came in to force from the schooling to till workplace. The education institution, hostel, hotel, and some other places women spoiled their life due to sexual and mental harassment and finally commit suicide. Meanwhile, many rape and mental torture are also taking place in common place also.

6. Lack of security

As a citizenship of India has got good name from various parts of the country, but now that name has spoiled and polluted through the terrible culprit. At present, security from the part of the company, household and journey, this area where the insecurity could exists. The country has developed excellently in certain sector but at the same time the women security and protection are always an unanswerable question. The above problems are always faced by the women, in this situation, gender bias only could be possible and the government must overcome this issue and safeguard the women group in future.

Future Progress of Gender Equality

The gender biases are always happening from pre-independence to till date. The gender must be equal and it has to grow in future through some active steps, they are:

1. Equal chances have to be given both male and female in the parliament or local election and other position like Minister or Speaker or Judges etc.
2. When the position and sharing 33% of seats are also one of the parameter to achieve the gender equality,
3. Treat everyone in an equal manner and no such partiality could takes place.
4. There are equal level of literacy and worker participation rate, it seems to be a better way and women and men occupying the position same manner.
5. Recognition and support are also improved when gender becomes equal.
6. Humanism and civilization have also taken care of the women empowerment, it create humane relation both men and women.
7. When gender equality may takes place, there is no problem for men and women who can apply for government job in an equal manner, the government decide right person for the right job.
8. Women are not heavily depending on other and they can stand on their own leg due to some welfare schemes offered by the government. It leads to the standard of living of the rural and urban women can be improved.
9. Education and health status may also go on up when the gender can be equated.
10. Men and women are maintaining tolerance and adjustment, and then no such divorce could happen in their life.
11. Every male group to think that friendly relation with female group, this would create positive impact among the relation.

Conclusion

As a citizenship of India, still we are lagging behind in the gender equality; we need to strengthen gender equality by means of equal rights, chance and dealing.

There are many Laws are prevailed in the society to protect the woman and to remove the gender bias. The statement of "All are equal before the Law" as an Article 7 of the Universal Declaration of Human Rights, which indicates the equality between male and female.

According to Carolina Borbon Parma of United Nations Relief and Works, Agency for Palestine Refugees, she noted "More men need to speak up for the participation of women" this statement really express the importance of woman in all dimensions and to equalize men and women. Recently, India ranked 108 out of 145 countries in the World Economic Forum's Global Gender Gap Index in 2015. It reflects that we need to improve the gender equality then only we can meet sovereignty and integrity in all segments.

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A STUDY ON EMPLOYEE STRESS WITH SPECIAL REFERENCE TO SELECTED SOFTWARE COMPANIES IN CHENNAI

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Abstract:

Stress is a condition or feeling experienced when a person perceives that 'demands exceeds the personal and social resources the individual is able to mobilize'. In this study an attempt has been made to analyze the causes of stress of the employees working in selected software companies in Chennai. The purpose of the study is to measure level of employee stress and to test the relationship between two independent variables (Age and Experience) and level of stress. A sample of 151 respondents was taken for this study. A questionnaire was prepared and used for collecting the data. The level of stress was classified into three categories namely high, moderate and low level of stress. The Chi-square test was applied to test the relationship between two independent variables (Age and Experience) and level of stress.

***Key words**: Stress, Employee, Software Companies.*

Introduction

Stress is a fact of everyday life. When people reach out for help, they are often dealing with circumstances, situations, and stress in their lives that leave them feeling emotionally and physically overwhelmed. Many people feel that they have very little resources or skills to deal with the high levels of stress they are experiencing. Stress arises when a person is unable to cope with demands of the situation due to mental and physical incapacity. Stress is a condition or feeling experienced when a person perceives that 'demand exceeds the personal and social resources the individual is able to mobilize'. In software industry, stress may arise due to work demands, deadlines and time pressures, long working hours, demand for continuous learning and training, hire and fire policy and the like. If a person is continuously exposed to stress that may result in undesirable effect on physical and mental health.

Review of Liturature

In the United States, Suzukamo Newsroom and Davis (1997) reported that 30 percent of executives believe that their work has adversely affected their health; 40 percent of workers wonder whether or not they are going to have a job next year; 69 percent of workers reported that health problems related to stress made them less productive; and 34 percent of American workers expected to burn out on the job soon. Rubina et al. (2008) found a negative relationship between job stress and job performance. However the male employees were found to be affected more than their female counter parts. Dayo Akintayo(2012) found that working environment is significantly related to workers morale and also working environment is significantly correlated with perceived workers' productivity. Dr. K. Chandrasekar (2011)found that environmental factors are conducive to work and he also found that factors that affect attitude of employees to work are interpersonal relationships, control over environment, shift, emotional factors, job assignment, overtime duty and extended work.

Harish Shukla and Rachita Garg identified that a demand for quality performance, excess workload, non achievement of targets and family related problems are causes for stress. Arnold, Robertson and Cooper (1993), and Mark (2012), identified five major causes of work stress which includes factors intrinsic to the job, role in the organization, relationship at work, career development, organizational structure and climate. Eric s. Parilla (2012) reported that job stress is no way related to personal factors such as Age, Gender, Income and No of daily members how ever there is a positive significant relationship Between Job stress and Job Position.Uma Devi (2011) has suggested that elimination of conflicts, exercising the right control and making right choices would reduce stress in organizations.Job Ayodele Ekundayo(2014) organizational management considers occupational stress as individual problem and not management problem, then they have to face loss due to absenteeism, quitting of jobs, total cost of work-related accidents and low quality work.Abdel-Halim (1980) observed a negative relationship between the role ambiguity and the positive work outcomes. Ahemad, Bharadwaj and Narula (1985) found that public sector executives experience slightly more stress than their counterparts in the private sector.

Objectives of the Study

The following objectives are formulated for this study:

- To study stressors that cause stress among the employees of the selected Software Companies
- To measure the level of stress among the employees of the selected Software Companies.
- To study the relationship between two independent variables(Age and Experience) and level of stress.

Hypotheses

Keeping in view the objectives of the study, the researchers have formulated the following hypotheses:

1. H_0: There is no relationship between Age and Level of Stress.

2. $H_{0:}$There is no relationship between Experience and Level of Stress.

Methodology

In this study, both primary and secondary data were used for the purpose of research. The primary data needed for the study were collected with the help of a questionnaire. The study is confined to the employees of select Software Companies in Chennai. The present study covers employees working in TCS and WIPRO in Chennai branches. To collect the primary data 160 questionnaires were sent to the respondents who were taken for this study (80 each to TCS and WIPRO). Out of 160 questionnaires sent, only 155 questionnaires were returned by the respondents. Out of the 155 questionnaires received 4 were incomplete. Therefore, 151 questionnaires which were complete in all aspects were taken for the study. For the purpose of analysis, percentage, weighted average and chi-square test were used. The data were processed with the help of SPSS software.

Results and Discussion

Stress is an incessant, arising from the interaction of people and their jobs and is characterized of by the challenge within people and from their normal functioning. The researchers identified 25 variables which cause stress and the level of stress caused by such variables is measured. Biased assessment of performance by superiors, work demands by way of targets to be achieved and relationship problems with subordinates are identified as important causes for stress. The following table shows the level of stress suffered by employees with respect to their jobs, superior-subordinate relationships, peer group relationships etc.

Table No. 1 Level of Employees Stress

Level of Stress	No Stress	Mild Stress	Moderate Stress	Severe Stress	Extreme Stress	Weighted Average
1. Challenges in job.	20 (13.2)	113(74.8)	17 (11.3)	Nil	1 (.7)	2
2. Relationship problems with fellow employees.	7 (4.6)	38 (25.2)	97 (64.2)	9 (6.0)	Nil	2.7
3. Relationship problems with the superior.	10 (6.6)	25 (16.6)	79 (52.3)	32 (21.2)	5 (3.3)	2.9
4. Relationship problems with subordinates	2 (1.3)	39 (25.8)	61 (40.4)	40 (26.5)	9 (6.0)	3.1
5. Work demands by way of targets to be achieved	Nil	29 (19.2)	66 (43.7)	48 (31.8)	8 (5.3)	3.2
6. Deadlines and time pressures	31 (20.5)	24 (15.9)	50 (33.1)	33 (21.9)	13 (8.6)	2.8
7. Work load	3 (2.0)	57 (37.7)	42 (27.8)	42 (27.8)	7 (4.6)	2.9
8. Working hours are too long	11 (7.3)	23 (15.2)	67 (44.4)	36 (23.8)	14 (9.3)	3.1
9. Physical facilities like lighting, ventilation, etc	4 (2.6)	56 (37.1)	46 (30.5)	45 (29.8)	Nil	2.9
10. Continuous learning and training	10 (6.6)	75 (49.7)	28(18.5)	36(23.8)	2(1.3)	2.6
11. Not allowed to participate in decision making	2(1.3)	49(32.5)	80(53.0)	19(12.6)	1(.7)	2.8
12. Feeling of being underpaid	8(5.3)	85(56.3)	40(26.5)	4(2.6)	14(9.3)	2.5
13. Feeling of job insecurity	1(.7)	92(60.9)	38(25.2)	17(11.3)	3(2.0)	2.5
14. No scope for using full knowledge and skill	1(.7)	68(45.0)	73(48.3)	3(2.0)	6(4.0)	2.6
15. No scope for career advancement	5(3.3)	53(35.1)	79(52.3)	4(2.6)	10(6.6)	2.7
16. Work demands affect personal life	3(2.0)	74(49.0)	57(37.7)	14(9.3)	3(2.0)	2.6
17. Discrimination and favoritism by management	7(4.6)	45(29.8)	91(60.3)	4(2.6)	4(2.6)	2.7
18. No delegation of authority and power to discharge their responsibility	4(2.6)	62(41.1)	59(39.1)	14(9.3)	12(7.9)	2.8
19. Biased assessment of performance by superior.	1(.7)	13(8.6)	33(21.9)	78(51.7)	25(16.6)	3.7
20. Fear of punitive measures(demotion, suspension etc)	10(6.6)	35(23.2)	72(47.7)	31(20.5)	3(2.0)	2.8
21. Lack of time for professional and self- development	13(8.6)	75(49.7)	31(20.5)	31(20.5)	1(.7)	2.5
22. Too much of administrative work	12(7.9)	40(26.5)	73(48.3)	24(15.9)	2(1.3)	2.8
23. Lack of support from superiors	25(16.6)	72(47.7)	47(31.1)	7(4.6)	Nil	2.2
24. Lack of support from colleagues	10(6.6)	56(37.1)	70(46.4)	14(9.3)	1(.7)	2.6
25. Employees are not consulted when there is a change at work	9(6.0)	70(46.4)	55(36.4)	11(7.3)	6(4.0)	2.6

Source: Primary Data,

Figures in the brackets indicate percentages

It is obvious that majority of the employees feel stress mildly when they have challenging job. Majority (64.2%) of the employees state that they have moderate level stress due to relationship problems with the fellow employees and more than one-half of the respondents have moderate level stress when they have relationship with superiors. It is also seen that 40.4% of the respondents have moderate level stress when they have relationship problems with subordinates and 43.7% of the respondents have moderate stress when they are asked to achieve the targets. The study shows that nearly one-third of the respondents experience moderate level of stress because of deadlines and work pressure in the organization.

Table 2 also reveals that more than one-third of the respondents have stress at mild level due to work load and 44.4% of the respondents feel moderate level of stress when they work long hours. 37.1% of the respondents have expressed that they feel mild stress due to their inadequate origination's physical facilities. It is clear that half of the respondents feel mild stress due to their organization's learning and training programs and more than one half (53%) of the respondents have stress at moderate level when they are not allowed to participate in making decisions. More than one half of the respondents have mild stress when they think they are underpaid and nearly two-third of the respondents have stress at mild level when they think about job insecurity.

It is evident from the above table that little less than one half of the respondents feel stress at moderate level when they think that their job has no scope for using their knowledge and skill full. More than one half of the respondents have stress at moderate level because of the present career advancement plans. It is seen that nearly fifty percent of the respondents feel mild stress when professional life affects personal life and majority of the respondents stated that they have moderate level of stress when they find management favoritism and discrimination. It can be understood that little more than two fifth of the respondents have mild stress due to non-delegation of authority and responsibility. 51.7% of the respondents opine that biased assessment cause severe stress and nearly half (47.7%) of the respondents feel moderate level of stress when they fear about punitive measures in the organization.

It is clear that half of the respondents have mild stress when they feel that they have lack of time for professional and self-development and nearly one-half of the respondents have moderate level of stress due to too much of administrative work. Majority of the respondents have mild stress when they feel that they do not have support from their superiors and most of the employees said that they have stress moderately when their colleagues offer poor support. 46% of the employees have stated that they have mild stress when they are not consulted before any change in the work methods.

Relationship between Age and Level of Stress

The researchers made an attempt to present the relationship between age and level of stress. The following table shows the distribution of respondents on the basis of age and level of stress.

Table 2 Age and Level of Stress

Age in years	Level of stress			Total
	High	Moderate	Low	
Below 25	9(19.1) (42.9)	22(46.8) (22)	16(34) (53.3)	47(100) (31.1)
26 to 30	9(11.9) (42.9)	61(74.4) (61)	12(14.6) (40)	82(100) (54.3)
31 to 35	3(16.7) (14.3)	14(77.8) (14)	1(5.6) (3.3)	18(100) (11.9)
Above 35	0	3(75) (3)	1(25) (3.3)	4(100) (2.6)
Total	21(100) (13.9)	100(100) (66.2)	30(100) (19.9)	151(100) (100)

Source: Primary Data

Figures in the brackets indicate percentages.

Table 2 depicts that all categories of employees have \moderate level of stress. The chi-square test has been applied to study relationship between age and level of stress

Table 3 Chi-Square Test- Age and Level of

	Value	Df	Asymp.Sig. (2-sided)
Pearson Chi-Square	13.793[a]	6	.032
Likelihood Ratio	14.553	6	.024
Linear-by-Linear Association	1.258	1	.262
N of Valid Cases	151		

Stress

Since the significance value (0.032) is less than 0.05, the null hypothesis is rejected. Hence it is concluded that there is a relationship between age and level of stress.

Relationship between Experience and Level of Stress

The relationship between the length of experience and level of stress has been studied using cross table. The following table shows the distribution of respondents on the basis of experience and level of stress

Table 4 Experience and Level of Stress

Experience	Level of stress			Total
	High	Moderate	Low	
Below 2	8(20) (38.1)	22(55) (22)	10(25) (33.3)	40(100) (26.5)
2 to 5 years	10(11.5) (47.6)	57(65.5) (57)	20(23) (66.7)	87(100) (57.6)
6 to 8 Years	2(16.7) (9.5)	10(83.3) (10)	0	12(100) (7.9)
Above 8	1(8.3) (4.8)	11(91.7) (11)	0	12(100) (7.9)
Total	21(100) (13.9)	100(100) (66.2)	30(100) (19.9)	151(100) (100)

Source: Primary Data,

Figures in the brackets indicate percentages

Table 4 shows that Employees belonging to different Experience groups have moderate level of stress. The Chi-square test has been used to study the relationship between Experience and Level of Stress

Table 5 Chi-Square Test-Experience and Level of Stress

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.962[a]	6	.126
Likelihood Ratio	14.484	6	.025
Linear-by-Linear Association	.988	1	.320
N of Valid Cases	151		

Since the significance value (.126) is greater than 0.05, the null hypothesis is accepted.

Hence it is concluded that there is no relationship between experience and level of stress.

Conclusion

It is inferred from this study that biased assessment of performance by superiors, work demands by way of targets to be achieved and relationship problems with subordinates are important causes for stress. The study reveals that there is a significant relationship between age and level of stress. It is also pointed out that there is no significant relationship between Experience and level of stress. Stress can come from any situation or thought that makes a person feel frustrated, angry or anxious. Everyone looks at situations differently and uses differences coping skills. Every organization tries its best to keep their employees productive and sustain their productivity. Hence IT companies may have training on stress management as an integral element of their training programs.

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IMPROVED PARTICLE SWARM OPTIMIZATION BASED K-MEANS CLUSTERING FOR JOB SCHEDULING PROBLEM

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Abstract

As an evolutionary computation technique, particle swarm optimization (PSO) has good global optimization capability. Clustering is a technique that can divide data objects into meaningful groups. In this paper, Particle swarm optimization (PSO) is proposed to improve k-means clustering. Though the k-means is one of the best clustering algorithms, the quality is based on the starting condition and it may converge to local minima. Combined with PSO, K-means clustering can enhance its global optimization capability. The job scheduling problem is used for assigning the jobs in a way that will optimize the overall performance of the application, while assuring the correctness of the result. PSO with K-Means clustering algorithm is proposed in this paper, for solving the job scheduling problem with an intention to decrease the maximum completion time.

Keywords: *k-Means Clustering, Initial Centroid Selection, Particle Swarm Optimization (PSO).*

Introduction

Data mining is the process of extracting patterns from large data. Data mining algorithms must have good scalability in order to receive the original information from the large amount of data. The purpose of clustering is to grouping related data points, which are close to one another. Data mining is a logical process that is used to search through large amounts of information in order to find important data. The goal of this technique is to find patterns that were previously unknown [1]. Once you have found these patterns, you can use them to solve a number of problems. Scheduling jobs has been a popular research for many years. The job scheduling problem (JSP) is a general scheduling problem in the manufacturing industry [2]. A classical JSP consists of N and M number of different jobs and machines, respectively [3].

A set of operations and related machines with known processing time are involved in the process of each job. Several inhabitants based on an algorithm have been proposed to find near-optimal solutions to the difficult optimization problems like scheduling and routing problems [5]. An inhabitant based algorithm consisting of possible solutions to the problem are modified by applying some operators in the solution depending on the information of its fitness values. Clustering technique is the process of grouping from a set of objects. The objects within a cluster are similar to each other, but they are dissimilar to objects in other clusters [7]. The property of clustering helps to identify some inherent structures that presents in the objects. Clustering reflects the statistical structure of the overall collection of input patterns n the data because the subset of patterns and its particular problem have certain meanings [9]. The pattern can be represented mathematically a vector in the multi-dimensional space. K-means algorithm is a popular clustering technique and it was successfully applied to many of practical clustering problems [11]. However, the K-means is not convex and it may contain many local minima since it suffers from several drawbacks due to its choice of initializations.

The rest of this paper is coordinated as follows: Section 2 briefly reviews the K-means algorithm. Section 3 briefly describes about the Particle Swarm Optimization and PSO with Clusters concepts. Section 4 discusses about Experimental results and discussion and finally some conclusion are made in Section 7.

K-Means

K-means (MacQueen, 1967) is one of the simplest unsupervised learning algorithms that solve the well known clustering problem. The procedure follows a simple and easy way to classify a given data set through a certain number of clusters (assume k clusters) fixed a priori. The main idea is to define k centroids, one for each cluster. These centroids should be placed in a cunning way because of different location causes different result. So, the better choice is to place them as much as possible far away from each other[1][2]. The next step is to take each point belonging to a given data set and associate it to the nearest centroid. When no point is pending, the first step is completed and an early group age is done. At this point we need to re-calculate k new centroids as barycentre of the clusters resulting from the previous step. After we have these k new centroids, a new binding has to be done between the same data set points and the nearest new centroid. A loop has been generated. As a result of this loop we may notice that the k centroids change their location step by step until no more changes are done.

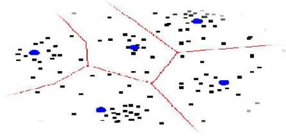

Figure 1. A clustered scatter plot. The black dots are data points. The red lines illustrate the partitions created by the k-means algorithm. The blue dots represent the centroids which define the partitions.

The initial partitioning can be done in a variety of ways.

- Dynamically Chosen: This method is good when the amount of data is expected to grow. The initial cluster means can simply be the first few items of data from the set. For instance, if the data will be grouped into 3 clusters, then the initial cluster means will be the first 3 items of data.
- Randomly Chosen**:** Almost self-explanatory, the initial cluster means are randomly chosen values within the same range as the highest and lowest of the data values.
- Choosing from Upper and Lower Bounds**:** Depending on the types of data in the set, the highest and lowest (or at least the extremities) of the data range are chosen as the initial cluster means. The example below uses this method.

Algorithm

1. Clusters the data into k groups where k is predefined.
2. Select k points at random as cluster centres.

3. Assign objects to their closest cluster centre according to the Euclidean distance function.
4. Calculate the centroid or mean of all objects in each cluster.
5. Repeat steps 2, 3 and 4 until the same points are assigned to each cluster in consecutive rounds.

K-Means Clustering Weaknesses

- With fewer samples of data, initial grouping will determine the cluster significantly.
- The number of clusters, k, must be determined beforehand.
- With fewer samples of data, inaccurate clustering can occur.
- We never know which variable contributes more to the clustering process since we assume that each has the same weight.
- The accuracy of mathematical averaging weakens because of outliers, which may pull the centroid away from its true position.
- The results are clusters with circular or spherical shapes because of the use of distance.

Possible Solutions:

- Include as many samples of data as possible (the more data, the more accurate the results).
- To avoid distortions caused by excessive outliers, the median can be used instead of the mode.

Particle Swarm Optimization

Particle swarm optimization (PSO) is a population based stochastic optimization technique, inspired by social behaviour of bird flocking or fish schooling. Each particle keeps track of its coordinates in the problem spaces which are associated with the best solution (fitness) it has achieved so far. (The fitness value is also stored.) This value is called *pbest*. Another "best" value that is tracked by the particle swarm optimizer is the best value, obtained so far by any particle in the neighbours of the particle. This location is called *lbest*. When a particle takes all the population as its topological neighbours, the best value is a global best and is called *gbest*.

After finding the two best values, the particle updates its velocity and positions with following equation (a) and (b).

v[] = v[] + c1 * rand() * (pbest[] - present[]) + c2 * rand() * (gbest[] - present[]) ———— (1)

present[] = present[] + v[] ——(2)

v[] is the particle velocity, present[] is the current particle (solution). pbest[] and gbest[] are defined as stated before. rand () is a random number between (0,1). c1, c2 are learning factors. Usually c1 = c2 = 2.

The pseudo code of the procedure is as follows.

For each particle

Initialize particle

END

Do

For each particle

Calculate fitness value

If the fitness value is better than the best fitness value (pBest) in history

set current value as the new pBest

End

Choose the particle with the best fitness value of all the particles as the gBest

For each particle

Calculate particle velocity according to equation—— (1)

Update particle position according to equation ——(2)

End

While maximum iterations or minimum error criteria is not attained

Particles' velocities on each dimension are clamped to a maximum velocity Vmax. If the sum of accelerations would cause the velocity on that dimension to exceed Vmax, that is specified by the user. Then the velocity on that dimension is limited to Vmax.

PSO with cluster Algorithm Steps:

1. Initially, each particle randomly select k different document vectors from the document collection as the initial cluster centroid vectors.
2. Initialize each particle to contain K randomly selected cluster centres, at the same time, randomly choose K cluster centres for K-means algorithm.
3. The process of K cluster centres being chosen in PSO and K-means is realized by randomly assigning each data vector to a cluster and computing the cluster centre.
4. For each particle compute the fitness value.
5. Compare the i-th particles fitness value with particles best solution
6. Update the velocity and location of each position.
7. Update the global best and local best positions
8. Update the cluster centroids
9. Repeat the steps until the maximum iteration exceeds.

The hybrid algorithm first executes PSO clustering algorithm to find points close to the optimal solution by global search and simultaneously avoid high computation time. In this case PSO clustering is terminated when the maximum number of iterations is exceeded. The result of the PSO algorithm is then used as initial centroid vectors of the K-means algorithm. The -means algorithm is then executed until maximum number of iterations is reached.

Advantages and limitations of PSO

1. It's simple; it provides high quality of solution.
2. Fast convergence towards the sub optimal solution
3. PSO is based on the intelligence. It can be applied into both scientific research and engineering use.
4. Fewer parameters settings.
5. Easiness to implement.
6. Have the character of memory.

Limitations

1. Iterative nature of PSO can prohibit its use for high-speed real-time applications.
2. If optimization needs to be carried out frequently and not that convenient.
3. PSO requires large amounts of memory, which may limit its implementation to resource-rich base stations.
4. Premature convergence.
5. Easily drops into regional optimum or local minima.
6. The multiplicity of population is not enough.

Experimental and Results

The performance of the proposed algorithm is evaluated under four different job datasets and the results are compared against the conventional algorithms such as PSO, K-Means and PSO+Kmeans. The results that are obtained in different experiments are given in following Table I.

No of jobs	No of Resource	Test Runs	PSO	K-Means	PSO +Kmeans
10	50	50	36.5	32	25.2
		100	34	33.2	23
		150	33.9	35	21.6
		200	32.1	31.4	20.3
10	100	50	29.7	28.5	19.2
		100	28.2	29	18.7
		150	26.2	24.3	18.1
		200	25.5	22.4	17.8

Table 1: Job Completion Time for Job

scheduling Dataset I by the proposed with PSO, CS, and PSO-CS algorithm with the number of 10 jobs and resources are 50and 100.

The results that are obtained in different experiments are given in following Figures 2 and 3.

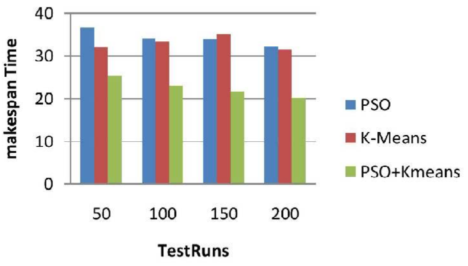

Figure 2: Minimum makes pan time for individual Job Datasets proposed with 50 Recourses PSO, K-Means and PSO+ Kmeans.

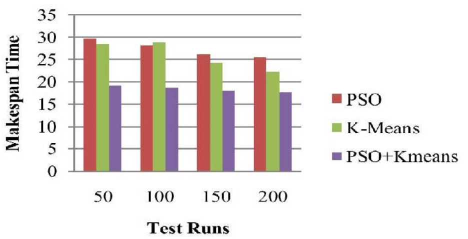

Figure 3: Minimum makespan time for individual Job Datasets proposed with 100 Recourses PSO, K-Means and PSO+Kmeans.

Conclusion

In this paper, proposed Particle Swarm Optimization (PSO) algorithm to improve the cluster quality from k-means algorithm. The new algorithm improves the convergence speed of PSO and helps K-means independent of initial clusters. It can make full use of the advantages of both algorithms, and can avoid the shortcomings of both algorithms. From the experiment, it is known that combined PSO and K-means algorithm gives an algorithm to show the best performance result than PSO algorithm and K-means. The proposed method PSO+K_Means has achieved the minimum completion and makes span time.

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KNOWLEDGE MANAGEMENT IN HIGHER EDUCATION – A CONCEPTUAL ANALYSIS

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Abstract

Knowledge management is one of the emerging components of the contemporary field of higher education. Higher educational Institutions create and apply knowledge during their processes and activities. The growth in the number of higher educational institutions has increased rapidly and therefore there is a competition and pressure for better performance. This has forced the institutions to recognize the need for knowledge management which is s key asset. It is the logical management of an organization's knowledge assets for the purpose of creating value and meeting tactical & strategic requirements; it consists of the initiatives, processes, strategies, and systems that sustain and enhance the storage, assessment, sharing, refinement, and creation of knowledge. The present paper highlights the bird's eye view of the conceptual background of the Knowledge management in higher education.

Key words: *Knowledge, Knowledge management, explicit knowledge, tacit knowledge, higher education*

Introduction

Knowledge management is one of the most affective and important part of the industrial or institutional establishment which want to grow with the application of innovative and informative inputs into output. Now day's knowledge is a part of resources particularly in human resource which mainly associated with the explicit and implicit knowledge on particular aspects that are key components of the institution. Knowledge management can create an innovative relationship and link between work and education, help students to more closely match their talents with the current workplace demands, contribute to the adaptation and assimilation of new knowledge with the existing one, contribute to the reconnection of learning with experience, so that a curriculum reflects the "real time, real place and real problems"; work can no longer be seen as something that happens at a later stage in life.

Knowledge

Knowledge is defined in various ways by different authors. One of them is given by Davenport and Prusak (1998) as "knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of the knower. In organizations, it often becomes embedded not only in documents or repositories but also in organisational routines, processes, practices, and norms".

There are two types of knowledge, which are widely discussed in the knowledge management approach. Explicit knowledge is a formal type of knowledge which is stored, articulated and disseminated into certain codified forms such as databases, libraries (Nonaka 1994), Tacit knowledge is defined as knowledge that is highly personal and embedded in an individual's daily life or work practice (Nonaka 1994). According to Bartt (2002) knowledge can be acquired through practical application and work practices, and it can be transferred and demonstrated through observation. Haldnin (2000) states that tacit knowledge can neither given in lectures nor found in databases, textbooks, manuals or internal newsletters, for dissemination.

Definitions of knowledge management

Knowledge management is one of the emerging aspects in the field of human resources which encompass various dimensions and approaches. Knowledge management is the name of a concept in which an enterprise consciously and comprehensively gathers, organizes, shares, and analyzes its knowledge in terms of resources, documents, and people skills The following are the major and universally accepted definition cited by the eminent personalities;

Knowledge management is the process of creating, sharing, using and managing the knowledge and information of an organization. *(Girard, John P)* It refers to a multi-disciplinary approach to achieving organizational objectives by making the best use of knowledge.

"Knowledge Management is the discipline of enabling individuals, teams and entire organisations to collectively and systematically create, share and apply knowledge, to better achieve their objectives" (Ron Young).

"Most activities or tasks are not one-time events. Whether its drilling a well or conducting a transaction at a service station, we do the same things repeatedly. Our philosophy is fairly simple: every time we do something again, we should do it better than the last time". (Sir John Steely Browne)

"The capabilities by which communities within an organisation capture the knowledge that is critical to them, constantly improve it and make it available in the most effective manner to those who need it, so that they can exploit it creatively to add value as a normal part of their work" (GlaxoSmithKline)

"Knowledge management will deliver outstanding collaboration and partnership working. It will ensure the region maximizes the value of its information and knowledge assets and it will help its citizens to use their creativity and skills better, leading to improved effectiveness and greater innovation". (West Midlands)

"We recognise that our most important asset is people and their knowledge. We understand Knowledge Management (KM) as the cultivation of an environment within which people are willing to share, learn and collaborate together leading to improvement". (CSIP).

With the above definitions, it clearly indicated that, Knowledge management is closely associated with an organisation and its employees.

Conceptual analysis of Knowledge Management in Higher Education

Higher Education institutions need more number of knowledge personnel to execute its vision and mission. Physical infrastructure alone may not fulfil the demand of the present higher educational but also there is a need of adequate intellectual infrastructure like human resources. Knowledge Management comprises a range of practices used by organisations to identify, create, represent, and distribute knowledge. It has been an established discipline since 1995 with a body of university courses and both professional and academic journals dedicated to it. Many large companies have resources dedicated to Knowledge Management, often as a part of 'Information Technology' or 'Human Resource Management' departments. Knowledge Management is a multi-billion dollar worldwide market. Therefore it is considered as a major part of the human resource which helps to improve the talent and efficiency of the employees of the institutions.

Knowledge Management programs are typically tied to organisational objectives such as improved performance, competitive advantage innovation, lessons learnt transfer and the general development of collaborative practices. Knowledge Management is frequently linked to the idea of the learning organisation although neither practice encompasses the other. Knowledge Management may be distinguished from Organisational Learning by a greater focus on specific knowledge assets and the development and cultivation of the channels through which knowledge flows" .

Jasmina (2011), suggests that the introduction of knowledge management in higher education is inevitable, due to the current social and economic changes in the knowledge economy; research of its presence in higher education institutions is important, not only for establishing its current state or for following the progress of its implementation, but also for establishing the strong and weak points, predispositions and obstacles of higher education institutions for its implementation. There are plenty of theories on knowledge management processes in the literature, but the one which unites all of them is taken as the basis of this methodology. The author highlights, the value of knowledge management as integral part of the higher education institutions to fulfil the requirements of the demand.

Jennifer (2000), suggests that there is a significant level of knowledge management activities practiced in the universities. It is important to recognize, and use them as foundations for further development, rather than to invent a whole new paradigm. A series of unrelated knowledge based activities is not sufficient. Universities and their faculty should recognize and responding to their changing role in a knowledge-based society. Essentially, universities need to consciously and explicitly manage the processes associated with the creation of their knowledge assets. The intellectual capital values are to be recognized for their continuous role in the society and in the global marketplace for higher education. With is study ,the author indicated that the knowledge management activities in higher educational instructions associated with recognize and develop the new dimension in the knowledge-based society.

Mamta (2005), suggests that Universities have traditionally had two main roles: creating knowledge, and disseminating knowledge. Research has been the main vehicle for creating knowledge and teaching has been the main vehicle for disseminating knowledge. In today's rapidly-changing economic environment, the traditional role of universities as providers of knowledge is greatly challenged. In this paper, the author observed that, generating new knowledge through research and developmental activities by the faculties to competitive in the global challenges.

Ferenc and Ágnes (2009), suggests that the main goal of knowledge management is to raise the value of the organisation with the application of the existing knowledge and intellectual capital within the organisation. One basic assumption of knowledge management is that the enhancement of the knowledge base can support the organisation in achieving a better position in competition. The authors examine the knowledge transfer between the higher education institutions and the students. Students represent such networks, the elements of which are capable of knowledge sharing and knowledge distribution among themselves.

Gholamreza et al (2009) in their article suggest a categorisation system for knowledge management practices in higher education, based on two dimensions: the practices' role in the problem-solving process, and the type of problem they address. The two most widespread types of categorisation systems for knowledge management practices are grounded in organisational strategy and the characteristics of knowledge, respectively. Authors also noted that, categorisation of knowledge is one of the innovative strategies in higher educational intuitions.

Fatma (2010), suggests that Knowledge management is the core subject of organisations in today's challenging world, and a major focus of knowledge management is on transforming tacit knowledge into an explicit one. Since knowledge is constituted in individuals and depends on individual experiences, intuitions, insights and personal judgment, it is difficult to capture. If it is extracted, it may be codified, and become a tangible form of knowledge. Otherwise it is called as tacit knowledge. Since codified knowledge is easy to be shared and used, it is emphasized that the knowledge which provides a competitive advantage is a tacit one, and tacit knowledge is seen as a strategic asset for the competitive advantage and sustainability of organisations. In this aspects, sharing and transforming the knowledge is most important dimension in the present day environment.

Conclusion

With the above literature, managing knowledgeable persons in higher educational institutions is one of the very important parts which decide the quality of the education as well as helps to improve the standard of institutions. Due to the growth of globalisation and emerging trends in higher education, knowledge is considered as a powerful weapon to meet the challenges of in the higher education. With these aspects the present paper gives a bird's eye view on conceptual analysis of knowledge management in higher education in general.

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PATRIARCHY: A THREAT TO FEMALE IDENTITY IN "THE HOLY WOMAN"

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Abstract:

The Holy Woman highlights how the powerful social structures and feudal customs, centred on female body and sexuality, restrict women and are difficult to challenge. These customs and tradition are often nurtured, strengthened and kept alive through violent and unjust actions centred on women. This paper shows how the female body is associated with cultural traditions, such as honour, to lay claims to female sexuality. Shahraz's female figures find their bodies and sexualities as a means of exploitation which possess a threat to their female identity

'Here I stand before you, Mother, my father's Shahzadi Ibadat'. She spread her hands in a flourish. 'The Holy Woman. The woman he created by killing me. Did you not know that men are the true creators in our culture, Mother? They mould our lives and destinies according to their whims and desires'. (The Holy Woman, p.88)

The Holy Woman, by Qaisra Shahraz, encapsulates the restrictions on the lives of women living under patriarchy. The Holy Woman highlights how the powerful social structures and feudal customs, centred on female body and sexuality, restrict women and are difficult to challenge. These customs and tradition are often nurtured, strengthened and kept alive through violent and unjust actions centred on women. This paper shows how the female body is associated with cultural traditions, such as honour, to lay claims to female sexuality. Shahraz's female figures find their bodies and sexualities as a means of exploitation which possess a threat to their female identity. Shahraz highlights the restrictive family structures that bind women into submission, who passively accept their fate with little resistance. The Holy Woman reveals male domination over female bodies and sexuality and, as this paper also demonstrates, women remain bound within male-constructed boundaries of piety and honour whereas men hold the ultimate deciding power.

The Holy Woman is centred on Zari Bano, an educated and wealthy woman, who becomes the victim of a feudal custom. The twenty seven year old Zari Bano, a university graduate and an active feminist (she is a member of the woman's organisation based at her university which is headed by her professor Nighat) is emotionally pressurised by her father to marry the Holy Quran and become a Holy Woman14. Her father Habib Khan, a feudal lord, makes this cruel decision following the unexpected death of his only son, the heir of the family. Zari Bano reluctantly accepts her new role and travels abroad to gain higher education. The plot attains its climax as her younger sister, Ruby, accepts an arranged marriage with Sikandar, the man Zari Bano loves.

This marriage is short lived as Ruby and her father both tragically die during the Holy pilgrimage in Mecca. Towards the end of the novel, Zari Bano is again emotionally pressurised to marry Sikandar in order to mother her orphaned nephew Harris. Whereas Qasim in The Pakistani Bride, asserts control over his adopted daughter Zaitoon's sexuality by marrying her for his own interests, Habib asserts his control by denying his daughter the choice of marriage. In both cases, female sexuality is called to the sacrificial altar to be slaughtered in the interest of male whims and fancies This novel is based in Karachi in the Sindh province and captures one of the many brutal customs often practiced in this province but also more generally across Pakistan. Zari Bano belongs to a wealthy and land owning family of Sindh with access to education. The strict regulations of purdah are also eased for Zari Bano as she has the luxury of private transport. Geographically, Sidhwa's The Pakistani Bride is based in the North West Frontier Province (NWFP) where, as in Baluchistan, "life is strictly governed by a rigid code of tribal beliefs and patterns of behaviour…A woman has no say in any aspect of her own life, including her marriage, and once betrothed belongs exclusively to her husband's family" (Mumtaz and Shaheed, 1987, p.21).

Shahraz bases both of her novels, The Holy Woman and Typhoon, in the Sindh province where life for women may seem slightly less restricted or in other words patriarchy manifests itself in a different colour and shade. Sidhwa's The Pakistani Bride captures a tribal system and Shahraz's The Holy Woman presents women caught in a feudal system. Generally defined, a feudal system includes certain land owning families across Pakistan, more specifically in the rural Sindh and NWFP province, who have established their power through the possession of hundreds of acres of land. These feudal lords exercise great power and authority both politically and religiously. This power also includes the authority over women's bodies and sexuality exercised through, "traditions [which] inform and control women's lives from birth to death" (Katrak, 2006, p.208).

These traditions are mostly implemented through marriage transactions between two men or two communities. In some cases marriage transitions control the lives of women even before they are born as Nafisa Shah (1997) explains:

> *In exchange marriages if women of productive age are not available pledges are made in a custom called paith likhi diyan (to pledge a pregnancy) in which a woman not yet born is pledged into marriage in the exchange. In upper Sindh, especially Larkana, the father who makes the transactions prefers to charge half the money for his daughter in bride price and the other half is charged as a Sangh (Sindhi: Marriage contract). The same daughter will return a daughter, born to her, to the father who would then pass on the girl to his agnates (paternal relatives) in the exchange deal. (Shah, 1997, p.34)*

Whereas women are bartered, through marriage, for materialistic gains, the land owning feudal lords of Sindh also restrict and deny marriage through a traditional custom named Haq Bakshish which Shahraz describes in this novel. As the title indicates the Holy Woman is a woman who goes through the ceremony of Haq Bakshish to become a Shahzadi

Ibadat meaning princess of worship or, as Shahraz calls it, a Holy Woman. The custom of marriage with the Quran is mostly practiced in the Sindh province. Uzma Mazhar (2003) in 'The Friday Times of Pakistan' (Pakistani weekly newspaper) reports:

According to Khabrain, a large number of feudals in Sindh had married daughters to the Quran. The ceremony took place after the girl of the family was asked to take a bath, after which a Quran was put before her as the men folk apologized to her for the ritual which would condemn the girl never to get married but to read the Quran every day. In Sindh, Shabbir Shah's sister, ex-minister Murad Shah's sister and two daughters, three daughters of Mir Awwal Shah of Mattiari, daughters and sisters of Sardar Dadan and Nur Khan of the Lund tribe, nieces of Sardar Ghulam of Maher tribe, and the daughters of the Pir of Bharchundi Sharif, were all married to the Quran to prevent their share of the land going to them and thus avoid redistribution of land. (Mazhar, 2003)

Habib Khan, Zari Bano's father, is presented as a feudal lord who victimises his daughter to save his acres of land, by marrying her to the Quran. Zari Bano who lives in the cosmopolitan city of Karachi and attends a co-educational university is bound to comply with this misogynist feudal custom, which proves that despite wealth and education, her life is no different to many other illiterate women living in the shadows of their male guardians.

According to Mumtaz and Shaheed (1987): Whether a Pakistani woman belongs to the elite or the toiling masses, whether she lives in the remote villages of the tribal areas cut from change, or in the dynamic environment of Karachi, her life is governed by the same rules of patriarchy which cut across class and regional differences to create some measures of uniformity and similarity. (Mumtaz and Shaheen, 1987, p.23)

Regardless of Shahzada's position as a Chaudharani, she finds herself helpless and devoid of any say in her daughter's fate. She laments, "I wish I was a fishmonger's wife. For then I could protect my daughter's interests. Here I am a Chaudharani, but I don't even have

enough power in my little finger, to save my daughter from the fate that is awaiting her" (The Holy Woman, p.75). Shahzada's haplessness reflects the restrictions faced by women, where wealth and high standards of living do not necessarily afford women autonomy or decision-making power Shahzada not only remains 'voiceless' herself but also discourages her younger daughter from challenging her father's decision, "No, stop Ruby! I have tried to persuade him but it is no use" (The Holy Woman, p.83). Shahzada's subordination is so strongly internalised that she fails to see how her younger daughter could 'reason' with the man that she has failed to persuade. Ruby too remains silent as she is made aware that her voice would not be heard. One possible reason for the silence that women either choose or are forced into is discussed by Deborah Cameron (1990) who points out how social taboos and restrictions prevent women from speaking: Even where it seems that women could speak if they chose, the conditions imposed on their lives by society may make this a difficult or dangerous choice. Silence can also mean censoring yourself for fear of being ridiculed, attacked or ignored. (Cameron, 1990, p.4)

Zari Bano is similarly forced to keep silent as the conditions imposed on her life by

patriarchy make it impossible for her to speak out. After the initial debate with her father she realises her lack of power, and understands the unchallengeable authority behind her father's decision as her mother tells her younger daughter Ruby, "he has his traditions, his father and male relatives to support him" (The Holy Woman, p.83). Habib does not stand alone in his decision. As already mentioned, he has his clan to support him. This can be compared to Sakhi's grief in The Pakistani Bride which was understood and collectively mourned by his fellow tribal men as they join to help their 'brother' in his crisis. Habib Khan's sorrow is also collectively shared as his father and brother agree with his decision and facilitate the marriage to the Quran ceremony. However, Zari Bano finds herself alone and facing the biggest challenge of her life. This collective sense of helplessness and subordination displayed by Zari Bano, her mother and Ruby indicates the authority of the male voice against which the female voice dies out. She realises that no woman around her is in a position to help her. It is this learned and understood sense of helplessness that enables Zari Bano to forgive her mother and her sister, "don't look so sad, I absolve you of any guilt. I know you can't help me. I do not hold you responsible for anything" (The Holy Woman, p.88).

By forgiving her mother and sister, Zari Bano also further strengthens their sense of subordination and helplessness. She allows them to remain in their passive, weak and subordinated selves justifying their meekness through her understanding and acceptance. The supreme authority of Habib, supported by his male kin, is observed by all the women of the extended family. Zari Bano's female cousin, Gulshan, also expresses her inability to help Zari Bano:

> *What could she do, anyway, if Zari Bano's own mother and sister had been powerless to help? She cast a surreptitious glance at her grandfather, her Uncle Habib and her father…Gulshan was a mere young woman, was just a pebble in the company of giant rocks, to be easily trodden upon and crushed if the need arose. (The Holy Woman, p.152)*

Gulshan too speaks of the same helplessness that Zari Bano, her mother and her sister experience, an ingrained sense of inferiority cemented by the centuries of voiceless subordination that 'socialises' women to accept patriarchal authority. Ghanim (2009), whilst discussing women's compliance with oppression, questions as to why women choose to continue in the violence that victimises them and in a bid to find a possible answer, to the puzzling question he raises, he claims:

> *Socialisation of women tends to enforce and normalise patriarchal social construct in the lives of women. A particular social construction enters into conflict with reality and natural existence. This social construct becomes the only reality that women experience in a patriarchal system. Thus, internalisation is the process where the socially constructed appears natural to women. (Ghanim, 2009, p.12).*

The novel ends with Zari Bano's marriage to Sikandar in hopes of a happy future. However, one wonders of the little conscious effort made by, or allowed to be made by, Zari Bano in the face of male pressure and dominance. Secondly, it also raises the issue of whether Zari Bano achieved what 'she desired' or was she merely persuaded to accept what benefitted her family. In the beginning of the novel she refuses to marry Sikandar to save her father's family tradition and towards the end of the novel she marries Sikandar to again save his family and support his orphaned son. In other words, Zari Bano is emotionally pressurised by men on both occasions, by her father to refuse marriage and by Sikandar to accept marriage. As Sikandar appeals to Zari Bano, "let the passionate woman come to life again" (The Holy Woman, p.488). The word 'let' reflects irony as it puts the female figure in the position of 'doing an act'. But it is evident that her every action is enforced through male desire to serve male interests. It can be said that Zari Bano remains under the influence of people around her, especially her father. She fails to make any decisions regarding her own life; rather she remains a product of her circumstances. She could have refused to marry Sikandar but she easily succumbs to pleas and social pressure. She accommodates her life, her role, identity and desire as she yields to comply and co-operate with others.

This is what happens in each and every women's life. They are not allowed to make any decisions in their life. Women are under social pressure. Patriarchy really a threat to their identity. In this novel ,the writer portrays the real nature of women is portrayed wellto make an awareness to the society.

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A SCIENTOMETRIC PERSPECTIVE OF NEOPLASIA RESEARCH IN INDIA

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ABSTRACT

This study analysed the growth of Neoplasia research publications in India.A total of 810 records were downloaded from Web of science database. The findings revealed that Indian Journal of Medical Researchwas the major producers of Neoplasia research in India. In the extent of International collaboration, that India has often collaborated U.S.A, contributing to 97 records having a global citation score of 2961. Further, contribution of journals, ranking of authors, preference of publication, frequency of keywords were also analysed in this paper.

Keywords: *Neoplasia, web of science, Citation, physiologic control, enlargement, malignancy*

Introduction

Neoplasia is new, uncontrolled growth of cells that is not under physiologic control. A "tumor" or "mass lesion" is simply a "growth" or "enlargement" which may not be neoplastic (such as a granuloma). The term "cancer" implies malignancy, but neoplasms can be subclassified as either benign or malignant.Neoplasia can be benign or malignant. A benign neoplasm, or a benign tumor, has several general characteristics, including the fact that,It does not invade or destroy the surrounding tissue it is growing on,It does not spread to other parts of the body and It usually doesn't come back after surgical removal because the tumor itself has well-defined margins that help in its surgical removal. "Quality" of science where emphasis is placed on investigations where the mechanisms of science are studied by statistical methods. This paper analyzes the core areas in the field of Neoplasia research in India.

Objectives

- To determine the year wise publication of Neoplasia research in India.
- To find out the prolific authors in of Neoplasia research in India.
- To determine the extent of International collaboration
- To analyze the journal wise distribution of publication in Nanoparticle research in India.
- To identify keywords frequently used in Nanoparticle research in India.
- To identify the major institutions contributed to in Nanoparticle research in India.

Methodology

The data for the study were retrieved from web of science database which is a scientific and indexing service maintained by Thomson Reuters. The Neoplasia research productivity of India was analyzed. The following search strategy has been used to extract data

TITLE-ABS-KEY ("Neoplasia") AND PUBYEAR (All years) AND LIMIT-TO (AFFILCOUNTRY "India").

The bibliographic details such as authors, document types, collaboration etc were analyzed using Histcite which is a software package used for bibliometric analysis and information visualization.

Analysis and Interpretation

A total of 810 records were published by the by researchers in the field of Neoplasia in India. The research output was analyzed using various scientometric indicators.

Year Wise Distribution of Publications

Table1:Year wise distribution of research output

S.NO	PUBLICATION YEAR	RECS	TLCS	TGCS
1	1989	3	11	22
2	1990	8	15	49
3	1991	8	5	144
4	1992	17	36	523
5	1993	9	6	93
6	1994	8	0	56
7	1995	16	16	309
8	1996	15	8	145
9	1997	10	4	429
10	1998	13	12	323
11	1999	15	9	294
12	2000	11	9	166
13	2001	13	5	226
14	2002	17	13	211
15	2003	17	39	537
16	2004	19	95	537
17	2005	23	110	1204
18	2006	26	24	633
19	2007	31	57	928
20	2008	40	53	954
21	2009	52	53	770
22	2010	54	28	1101
23	2011	46	24	408
24	2012	65	42	478
25	2013	44	14	452
26	2014	70	32	311
27	2015	82	9	153
28	2016	78	0	14
	TOTAL	**810**	**729**	**11470**

Table 1 shows the year wise distribution of research output in the field of Neoplasia in India .A total of 811records were published during the period 1989 - 2015. The highest number of publications is in the year 2015 with 82 records, which is followed by 78 records in the year 2016. The table clearly shows that publication output of Screen Technology research in India is varying consistently every year, which indicates a fluctuating trend.

Ranking of Authors

Table2: Ranking of top ten authors by number of publications in Neoplasiaresearch in India

S.NO	Author	Recs	TLCS	TGCS
1	Sankaranarayanan R	42	276	1449
2	Basu P	28	124	537
3	Pillai MR	25	52	400
4	Nair MK	23	55	308
5	Muwonge R	22	194	968
6	Singh V	20	36	258
7	Bhatla N	19	28	262
8	Das BC	18	42	409
9	Gupta S	17	11	128
10	Sharma A	17	30	260

Table 2 depicts the ranking of top ten authors in Neoplasiaresearch in India. It was found out that totally 2958 authors contributed to Nano Particle research output in India. It is clearly noticed from the table that Sankaranarayanan Rhas published the maximum number of publications with 42 records, having a global citation score 1449 and a Local citation score of 279, followed by Basu Pand Pillai MRwith 28 and 25 records, having global citation scores of 537and 400 respectively.

Contribution of Journals

Table 3: Contribution of Journals to Neoplasia research in India (Top 10)

S. NO	JOURNAL	RECS	TLCS	TGCS
1	INDIAN JOURNAL OF MEDICAL RESEARCH	21	16	180
2	ASIAN PACIFIC JOURNAL OF CANCER PREVENTION	19	21	162
3	INTERNATIONAL JOURNAL OF CANCER	19	139	839

4	INTERNATIONAL JOURNAL OF GYNECOLOGICAL CANCER	19	40	301
5	INTERNATIONAL JOURNAL OF GYNECOLOGY & OBSTETRICS	17	26	236
6	JOURNAL OF EVOLUTION OF MEDICAL AND DENTAL SCIENCES-JEMDS	17	0	0
7	INDIAN JOURNAL OF PATHOLOGY AND MICROBIOLOGY	13	4	31
8	CANCER LETTERS	12	15	196
9	CURRENT SCIENCE	12	12	119
10	GYNECOLOGIC ONCOLOGY	12	19	193

Table 3 reveals the contribution of top ten journals to Neoplasiaresearch output in India.The study found out the total research ouput of Neoplasiaresearch in India, comprising of 810 records was published in 384 journals. It is clearly seen from the table that Indian Journal of Medical Researchstands first with 21 records, having a Global citation score of 180 and a Local citation score.

Contribution of Institutions

Table 4: Contribution of Institutions to Neoplasia research output in India (Top ten)

S.NO	INSTITUTION	RECS	TLCS	TGCS
1	All India Inst Med Sci	73	63	1121
2	Tata Mem Hosp	58	170	1373
3	RegCancCtr	52	159	1203
4	IntAgcy Res Canc	43	277	2275
5	Postgrad Inst Med Educ& Res	42	21	427
6	Chittaranjan Natl Canc Inst	38	133	574
7	Christian Med Coll&Hosp	17	30	221
8	ManipalUniv	17	6	177
9	LV Prasad Eye Inst	16	7	47
10	Jawaharlal Nehru Univ	14	8	348

This table presents the contribution of top ten Institutions to Neoplasiaresearch output in India. It is clearly seen from the table that All India Inst Med Scihas the maximum number of publications with 73 records having a global citation score of 1121and a local citation score of 63, followed by Tata Mem Hospwith 58 publications, having a global citation score of 1373 and a local citation score of 70. It is also noted that institutes with minimum publications have scored highest global citation score.

International Collaboration

Table 5: Extent of international collaboration by India in Neoplasiaresearch (Top ten)

S.NO	COUNTRY	RECS	TCLS	TCGS
1	USA	97	87	2961
2	France	49	206	1931
3	UK	23	15	657
4	Unknown	20	67	325
5	Australia	16	6	1303
6	Netherlands	16	39	1485
7	Peoples R China	14	8	1011
8	South Korea	14	17	1602
9	Japan	11	13	965
10	Canada	10	15	138

Table 5 shows the extent of top ten International collaboration of India with other countries in Neoplasiaresearch. The study found out that India has collaborated in Neoplasia research with 81 different countries. It is inferred from the table that India has often collaborated U.S.A, contributing to 97 records having a global citation score of 2961, followed by France contributing to 49 records with global citation scores of 1931.

Word Frequency

Table 6: Frequency of keywords used in Neoplasia research in India (Top ten)

S.NO	WORD	RECS	TLCS	TGCS
1	CERVICAL	266	495	4549
2	CANCER	206	249	4865
3	NEOPLASIA	169	232	1275
4	HUMAN	115	235	3070
5	INDIA	99	360	1911
6	PAPILLOMAVIRUS	91	248	2914
7	WOMEN	73	149	1559
8	CARCINOMA	71	32	713
9	INTRAEPITHELIAL	64	64	536
10	CERVIX	59	77	864

Table 6 presents the top ten keywords used by the researchers in their publications. It is clearly seen from the table that the word "Cervical" has been used in 266 records by the researchers with a Global citation score of 4549 and a Local citation score of 495, followed by the word "Cancer" in 206 records with a global citation score of 4865and a Local citation score of 249.

Conclusion

The application of quantitative measures to scientific research has highlighted the contribution of countries, institutions, journals and also individual researchers. In the productivity analysis of Neoplasia research in India it was found out that totally 810 records were published by the researchers during the period of twenty eleven years. According to the information provided in the above section and based on the findings it is concluded that the publication output of Neoplasia is varying every year, which indicates a fluctuating trend.

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RURAL WOMEN IN AGRICULTURE WITH REFERENCE TO PADDY CULTIVATION: AN ECONOMIC STUDY

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ABSTRACT

Rural women play a significant role in agriculture development and are directly involved in major operations like feeding, breeding, management and health care. The importance of women in agriculture has been increasing. The share of rural females in agriculture was 83 per cent in 2004-05 as compared to 67% among rural men, showing the importance of women in agriculture in rural areas. Percentage of women in 2004-05 who were marginal farmers were (38.7%) and large farmers as (34.5%). These proportions have increased over time. Agriculture is becoming feminized as men are migrating to rural non-farm sector. They work in "land preparation, seed selection and production, sowing, in applying manure, fertilizer and pesticides, weeding, transplanting, threshing, winnowing and harvesting etc as well as in animal husbandry and dairying, fish processing, collection of non timber forest produces (NTFPs), back yard poultry, and collection of fuel wood, fodder and other products for family needs" (GOI, 2007). This paper mainly focuses on rural women in agriculture.

Keywords: *Rural Women, agriculture development, farmers, non-farm sector, migration*

Introduction

According to Swaminathan an agricultural scientist, historians believe that woman were the first to domesticated crop plants and thereby initiated the art and science of farming. While men went out hunting in search of food, women started gathering seeds from the native flora and began cultivating those of interest from the point of view lf food, feed, fodder, fiber and fuel. Women have played and continue to play a key role in the conservation of basic life support such as land, water, flora and fauna. They have protected the health of the soil through organic re-cycling and promoted crop security through the maintenance of varietal diversity and genetic resistance. Therefore, without the total intellectual and physical participation of women, it will not be possible to popularize alternative systems of land management to shifting cultivation, arrest gene and soil erosion, and promote the care of the soil and the health of economic plants and farm animals (Prasad & Singh 1992).

Review of Literature

That women play a significant and crucial role in agricultural development and allied fields including in the main crop production, livestock production, horticulture, post harvest operations, agro/ social forestry, fisheries, etc. is a fact long taken for granted but also long ignored. The nature and extent of women involvement in agriculture, no doubt, varies greatly from region to region. Even within a region, their involvement varies widely among different ecological sub-zones, farming systems, castes, classes and stages in the family cycle. But regardless of these variations, there is hardly any activity in agricultural production, except ploughing in which women are not actively involved. In some of the farm activities like processing and storage, women predominate so strongly that rmen workers are numerically insignificant (Aggarwal 2003).

Agricultural development is a complex process and a challenging one as well. Rural women farmers play a vital role in food production and food security. They account for 70% of agricultural workers, 80% of food producers, 100% of those who process basic foodstuffs and they undertake from 60% to 90% of the marketing. (U.N., 1986)

Four of ten agricultural workers in the world are women. Women take part actively in farming activities and in processing farm products, in addition to their domestic and reproductive responsibilities. (Jigginset al., 1998)

Statement of the Problem

Rural women as a part of society are mostly engaged in laborious work involved in farming in addition to their household duties. Even after a long period of independence rural women has been neglected, over exploited and never consider equal to men. Their life is routine of farm work. In India, more than fifty percent of the farm and related works are done by the women folk. It can therefore be forcefully established that their contribution to agriculture and allied activities in rural India is immense. Although women have made valuable contribution in the production process, this aspect of women's role has been ignored or underplayed. Economists are at pains to measure and analyses women's work in conventional supply and demand models comments that no tool has yet been evolved to measure the intensity and productivity of women's work in the relation of women's activities structure in general. Thus there is need for a conceptual and theoretical framework that can fully explicate the relationship of women's work to technological change and issues emerging from the relationship.

Objectives of the Study

Being the study is on economic, the main objectives are:

1. To study the special characteristics of the agricultural women in study area.
2. To explore the income sources and expenditure pattern of the agricultural women in the study area.

Methodology

The present study on "Rural women In Agriculture in Manickamangalam Panchayat in Tiruvarur District: An Economic Study" uses primary data. In Manickamangalam Panchayat, form the research universe for this study. The people who fully earns for their livelihood from agriculture are the focus and using simple random sampling, 60 agricultural rural women were selected for the present study.

Result and Discussion

Socioeconomic status is an economic and sociological combined total measure of a person's work experience and of an individual's or family's economic and social position in relation to others based on income, education, and occupation. Analyzing a family's SES, the household income, earners' education, and occupation are examined, as well as combined income, versus with an individual, when their own attributes are assessed. Disparities in SES are a great cause concerning today as they are increasing throughout the world. Although socio-economic status has been clearly associated with the well-being of adults and young children, its impact on adolescents has been controversial. Some studies find that young people with higher SES have better health and other studies show no effect of SES on health in adolescence. This section will present data on measures related to socioeconomic status. These include measures of income (median family and median household income, and poverty levels), and measures associated with income status (educational level and employment levels) of the agricultural women of Manickamngalam panchayat in Tiruvarur district.

Table-1 Distribution of respondents by their Special Characteristics

Age-Wise distribution of the respondents		
Age	Number of Persons	Percentage (%)
Below 30	4	6.7
30-40	23	38.3
40-50	15	25.0
50-60	13	21.6
Above 60	5	8.3
Total	60	100
Educational Status of the respondents		
Educational Status	Number of Persons	Percentage (%)
Illiterate	14	23.3
Primary	25	41.67
S.S.L.C	16	26.67
Higher Secondary	5	8.3
Degree Holder	0	0
Total	60	100
Community Wise Distribution of the respondents		
Community	Number of persons	Percentage (%)
SC	35	58.33
MBC	16	26.67
BC	9	15.00
Total	60	100
Type of the family		
Type of family	Numbers	Percentage (%)
Nuclear family	52	86.67
Joint family	8	13.33
Total	60	100
Size of the family		
Size	Number of Household	Percentage (%)
2-3	9	15.00
4-5	32	53.33
6-7	17	28.33
8-9	2	3.33
Total	60	100

Annual Income of the Rural Agriculture Women		
Income Group	Number of family	Percentage (%)
Below 15000	19	31.67
15001-16000	24	40.00
16001-17000	8	13.33
17001-18000	6	10.00
Above 18001	3	5.00
Total	60	100

Source: Computed from primary data

From the above table No-1, it is very evident that the agricultural women mainly fall under 30 to 40 years and accounted 38.3 per cent of the total sample. Of the remaining, 6.7 per cent of the agricultural women belong to below 30 years of age group, 25 per cent belong to the age group of 40-50 age groups and 21.6 percent is in the age group of above 50. The study also finds that there is still illiteracy among agricultural women, which are accounts to 23.3 per cent of the total respondents. Of the literate, 41.67 per cent received primary level education. Others obtained education up to secondary and higher secondary education.

It is understood from the above table that majority of the agriculture women belong to scheduled caste, which is accounted 58.33 percentage of our sample. Remaining 51.67 percent of the respondents are belongs to (26.67 percent) Most Backward Caste and (15 percent) Backward Caste. It is obvious from the present study that 86.67 percent are from nuclear families and the remaining 13.33 percent are from joint families. Another, family size is concerned, majority of the respondents have family size of 4-5 followed by 6-7 and the majority of the respondents’ families have 1 to 2 children, which is 53.33 percent. Size group of 3-4, follows this, which is 25 percent.

It is evident that more than one third of the respondents (40 percent) are getting the income ranging 15001-16000 per year. Very small percentage (5 percent) of the respondents is getting higher income ranging above 18001 per year. The average annual expenditure of the below 11000 income group which consists of 24 families Rs.6, 355.The average annual expenditure of the above 14001 income group which consists of 3 families Rs.10,110.

Table -2 Distribution of respondents by expenditure pattern

Expenditure on Food Items			
Income per Annum	No. of. family	Average Annual Expenditure	Total Expenditure
Below 15000	19	9870	187530
15001-16000	24	10355	248520
16001-17000	8	11290	90320
17001-18000	6	11940	71640
Above 18001	3	12260	36780
Total	60	10579.83	634790
Expenditure on Non – Food Items			
Income per Annum	No. of Family	Average Annual Expenditure	Total Expenditure
Below 15000	19	4080	77520
15001-16000	24	4318	103632
16001-17000	8	4945	39560
17001-18000	6	5230	31380
Above 18001	3	5760	17280
Total	60	4489.53	269372
Per capita Expenditure			
Income per Annum	No .of family	No .of Member	Per – Capita Expenditure
Below 15000	19	96	2760
15001-16000	24	123	2863
16001-17000	8	39	3330
17001-18000	6	31	3323
Above 18001	3	14	3861
Total	60	303	2984

Source: Computed from Primary Data

The table -2 reveals that a major portion of the income of the household in the study area has been spend on consumption purpose only. For the purpose of convenience the expenditure has been classified in to expenditure on food items and expenditure on non food items. The food items consist of rice, wheat, cereals, pulses, vegetables, oil etc. The total expenditure calculates by Average annual expenditure x No. of family. The average annual expenditure for food item of the entire sample is rupees 10579.83. It's ranged from 9870 rupees to 12260 rupees.

The non-food items include expenditure on education, clothing, transport, medicine, conventional necessaries, social function etc. The average annual expenditure on non-food item for the entire sample is rupees 4489.53 and it's ranged from 4080 to 5760. The average annual expenditure on non-food item of the first income category amounts Rs. 4080 consists of 19 families. The second income category which spends Rs. 4318 consists of 24 families. The third income group which spends Rs 4945 consists of 8 families. The fourth income group which spends Rs.5230 consists of 6 families. The last income groups which consist of 3 families spend Rs.5760.

A study on per-capita expenditure also plays an important role in determining the economic conditions of the agricultural women and therefore per-capita expenditure is estimated. The per-capita expenditure for the entire sample is rupee 2984 and which is ranged from 2760 to 3861.

Table -3 Distribution of respondents by their loan details

Loan of the sample households			
Income per Annum	No .of family	Total Loan Amount	Average Loan Amount
Below 15000	19	76500	4026
15001-16000	24	102000	4250
16001-17000	8	46500	5812
17001-18000	6	38300	6383
Above 18001	3	21800	7267
Total	60	285100	4752
Purpose of Loan			
Purposes	No of Households		Percentag e (%)
Household expenses and Purchasing of new assets	27		45
Repaying the old debt	15		25
Celebrating function	18		30
Total	60		100
Sources of Loan			
Sources	No of family		Percentag e (%)
Bank	9		15
Money Lenders	24		40
SHG	27		45

Sources: Computed from Primary Data

The income and expenditure of the sample household reveals that the fact that the income is hardly adequate to maintain the standard of living. The earnings are not only meager but also irregular. As a result the sample households have no alternatives but to earn to meet the excess expenditure. They borrow money for the purchase of cattle and to meet emergency household expenses and celebrating functions etc. Average loan of the household is ranged from rupees 4026 to 7267.The average loan amount for the entire sample is rupees 4752. The higher average loan amount 7267 is registered by higher income group. Higher proportion of the sample respondent household are borrow money for compensate their household expenditure. There are 45 percent of the respondents' loan for household expenses and purchase of assets and 25 percent respondents for repaying the old debt. Rest of the 30 percent respondents for celebrating functions.

Data outstanding debts from different per-capita expenditure sources have been collected under find specialized heads namely bank, moneylender and SHG. The SHG is the major debt source for the sample households. The SHG are accounted 45 percent in total. Money lenders is the next important source is accounted 30 percent of households borrowed from this source. Bank is the other source which is accounted 15 percent.

Women farmers have contributed immensely, to food production, processing and preservation of foods. Serious attention should be paid to their constraints because women are the backbone of agricultural development and food security. The study focused on rural women in agriculture. Women manage every aspect of farm work, but are not considered farmers. They toil in the fields planting, sowing, weeding, and harvesting but are not landowners. They harvest and process the produce, but men largely control the market and income.

Conclusion

Rural women are the major contributions in agriculture and allied fields. Her work ranges from crop production, livestock production to cottage industry. From household and family maintenance activities, to transporting water, fuel and fodder. Despite such a huge involvement her role and dignity has yet not been recognized. Women's status is low by all social, economic and political indicators. Women's wage work is considered a threat to the male ego and women's engagement in multiple home based economic activities leads to under remuneration for their work. Women spend long hours fetching water, doing laundry, preparing food and carrying out agricultural duties. The nature and sphere of women's productivity in the labour market is largely determined by socio-cultural and economic factors. Women do not enter the labour market on equal terms when compared to men. Their occupational choices are also limited due to social and cultural constraints, gender bias in the labour market, and lack of supportive facilities such as childcare, transport and accommodation in the formal sector of the labour market. Women's labour power is considered inferior because of employers predetermined notion of women's primary role as homemakers. Because of discrimination against female labour, women are concentrated in the secondary sector of labour market. Their work is low paid, low status, casual and lacks potential upward mobility. For the recognition of women, contribution in agriculture and its allied fields are reducing the gender issues

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NANOPARTICLE RESEARCH IN INDIA: A SCIENTOMETRIC PERSPECTIVE

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ABSTRACT

This study has been carried out to analyze the research field of Nanoparticles in terms of publication output as per science citation index database between 1992 and 2015. A quantitative analysis on the countries and organizations that contribute in the field of Nanoparticle is presented. The data shows increase in the basic research activity in this research field. During 1992- 2015, a total of 2831 papers were published by the scientists in the field of Nanoparticle. The highest number of papers was published in 2014. Further Contribution of journals, ranking of authors, preference of publication, frequency of keywords and funding agencies were also analyzed in this paper.

Keywords: *Nanoparticle, India, web of science, Doubling Time etc.*

Introduction

Nanoparticle research is analyzed and compared with number of document, journals, and international collaboration from 1992 to 2015. Using HistCite, the visualization technique developed by Garfield and colleagues, the historiographs for India based on both local citation scores (LCS) and global citation scores have been constructed, and the key papers have been identified.

Scientometry is the study of the evolution of science through some quantitative measures of scientific information such as the number of scientific articles published in a given period of time and their citation impact.

Scientometric research publications are a quantitative measure for the basic research activity in a country. Many scientometric studies have appeared in the literature focusing on the performance of science in the field of Nanoparticle.

In nanotechnology, a particle is defined as a small object that behaves as a whole unit with respect to its transport and properties. Particles are further classified according to diameter.A nanoparticle (or nanopowder or nanocluster or nanocrystal) is a microscopic particle with at least one dimension less than 100 nm. Nanoparticle research is currently an area of intense scientific research, due to a wide variety of potential applications in biomedical, optical, and electronic fields. “Quality” of science where emphasis is placed on investigations where the mechanisms of science are studied by statistical methods. This paper analyzes the core areas in the field of Nanoparticles research in India.

Objectives

- To determine the year wise publication of Nanoparticle research in India.
- To examine the growth rate of publications using RGR and Doubling Time.
- To find out the prolific authors in of Nanoparticle research in India.
- To analyze the document wise distribution of publication.
- To determine the extent of International collaboration
- To analyze the journal wise distribution of publication in Nanoparticle research in India.
- To identify keywords frequently used in Nanoparticle research in India.
- To identify the major institutions contributed to in Nanoparticle research in India.
- To analyze the core research areas in Nanoparticle research in India.
- To identify the funding agencies that supported Nanoparticle research in India

Methodology

The data for the study were retrieved from web of science database which is a scientific and indexing service maintained by Thomson Reuters. The Nanoparticles research productivity of India was analyzed. The following search strategy has been used to extract data for the BRIC countries.

TITLE-ABS-KEY (“Nanoparticles”) AND PUBYEAR (All years) AND LIMIT-TO (AFFILCOUNTRY “India”).

The bibliographic details such as authors, document types, collaboration etc were analyzed using Histcite which is a software package used for bibliometric analysis and information visualization.

Analysis

A total of 2831 records were published in Nanoparticles research in India. The research output was analyzed using various scientometric indicators.

Doubling Time

Generally, doubling time is the period of time required for a quantity to double in size or value Doubling time and Relative Growth Rate has a direct relation between them. If the number of articles or pages of a subject doubles during a given period then the difference between the logarithms of numbers at the beginning and end of this period must be logarithm of the number 2. If natural logarithm is used this difference has a value of 0.693. Thus the corresponding doubling time for each specific period of interval and for both articles and pages can be calculated by the formula:

Doubling Time (DT) = 0.693/R

Table 2: Relative Growth Rate and Doubling Time of publications

YEAR	PUBLICATIONS	CUMULATIVE TOTAL	LOG_eW_1	LOG_eW_2	RGR	DOUBLING TIME (DT)
1992	1	1		0		
1995	5	6	0	1.79	1.79	0.39
1996	4	10	1.79	2.30	0.51	1.36
1997	5	15	2.30	2.71	0.41	1.69
1998	2	17	2.71	2.83	0.12	5.76
1999	5	22	2.83	3.09	0.26	2.67
2000	8	30	3.09	3.40	0.31	2.23
2001	17	47	3.40	3.85	0.45	1.54
2002	24	71	3.85	4.26	0.41	1.69
2003	37	108	4.26	4.68	0.42	1.65
2004	61	169	4.68	5.12	0.44	1.58
2005	57	226	5.12	5.42	0.30	2.31
2006	106	332	5.42	5.81	0.39	1.78
2007	139	471	5.81	6.15	0.34	2/04
2008	174	645	6.15	6.47	0.32	2.17
2009	180	825	6.47	6.71	0.24	2.89
2010	257	1082	6.71	6.99	0.28	2.48
2011	315	1397	6.99	7.24	0.25	2.78
2012	359	1756	7.24	7.47	0.23	3.01
2013	417	2173	7.47	7.68	0.21	3.30
2014	436	2609	7.68	7.87	0.19	3.65
2015	222	2831`	7.87	7.95	0.08	8.67

Table 2 shows the Relative growth Rate and Doubling time of Nano Particles research in India. It is clearly seen from the table RGR is decreasing considerably, whereas Doubling

Time shows a fluctuating trend. The RGR is highest in the year 1995 with 1.79 and lowest in the year 2015 with 0.08.The Doubling time is highest in the year 2015 with 8.67 and lowest in the year 1996 with 0.39.

Ranking of Authors

Table 3: Ranking of top ten authors by number of publications in Nanoparticle research in India

S.NO	Author	Recs	Percent	TLCS	TGCS
1	Khanna PK	42	1.5	68	773
2	Das S	34	1.2	12	277
3	Kumar A	31	1.1	22	437
4	Mishra S	30	1.1	62	227
5	Singh AK	29	1.0	35	344
6	Kumar R	27	1.0	4	126
7	Tyagi AK	26	0.9	6	256
8	Kumar S	25	0.9	25	292
9	Kumar V	25	0.9	13	186
10	Rajendran V	24	0.8	10	90

Table 3 depicts the ranking of top ten authors in Nano Particle research in India. It was found out that totally 6361 authors contributed to Nano Particle research output in India. It is clearly noticed from the table that Khanna PK has published the maximum number of publications with 42 records, having a global citation score of 773 and a Local citation score of 68, followed by Das S and Kumar A with 34 and 21 records, having global citation scores of 277 and 437 respectively.

Contribution Of Journals

Table 4: Contribution of Journals to Nanoparticle research in India (Top 10)

S.NO	JOURNAL	RECS	PERCENT	TLCS	TGCS
1	JOURNAL OF NANOSCIENCE AND NANOTECHNOLOGY	82	2.9	27	454
2	JOURNAL OF ALLOYS AND COMPOUNDS	70	2.5	34	876
3	MATERIALS LETTERS	69	2.4	63	1005
4	MATERIALS CHEMISTRY AND PHYSICS	55	1.9	42	1027
5	RSC ADVANCES	53	1.9	5	120
6	CERAMICS INTERNATIONAL	44	1.6	13	396
7	JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS	40	1.4	1	140
8	BULLETIN OF MATERIALS SCIENCE	38	1.3	12	227
9	JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS	37	1.3	32	477
10	ASIAN JOURNAL OF CHEMISTRY	36	1.3	1	25

Table 4 reveals the contribution of top ten journals to Nano Particles research output in India.The study found out the total research ouput of Nano Particles research in India, comprising of 2831 records was published in 644 journals. It is clearly seen from the table that Journal Of Nanoscience And Nanotechnology stands first with 82 records, having a Global citation score of 454 and a Local citation score of 27 followed by Journal Of Alloys And Compounds with 70 records, having a Global citation score of 876 a Local citation score of 34.

Contribution of Institutions

Table 5: Contribution of Institutions to Nanoparticle research output in India (Top ten)

S.NO	INSTITUTION	RECS	PERCENT	TLCS	TGCS
1	Indian Inst Technol	394	13.9	264	6319
2	Bhabha Atom Res Ctr	107	3.8	54	962
3	CSIR	105	3.7	30	897
4	Indian Inst Sci	99	3.5	42	1632
5	Natl Inst Technol	85	3.0	27	604
6	Anna Univ	69	2.4	23	803
7	Natl Chem Lab	65	2.3	78	1940
8	Banaras Hindu Univ	56	2.0	14	416
9	Jadavpur Univ	55	1.9	23	504
10	Natl Phys Lab	52	1.8	34	737

This table presents the contribution of top ten Institutions to Nano Particle research output in India. It is clearly seen from the table that Indian Inst Technology has the maximum number of publications with 394 records having a global citation score of 6319 and a local citation score of 264, followed by Bhabha Atomic Research Centre with 107 publications, having a global citation score of 962 and a local citation score of 54. It is also noted that institutes with minimum publications have scored highest global citation score.

Research Areas

Table 7: Top ten Research areas of

RESEACH AREAS	RECS	PERCENTAGE
MATERIALS SCIENCE	1266	44.719 %
CHEMISTRY	909	32.109 %
PHYSICS	847	29.919 %
SCIENCE TECHNOLOGY OTHER TOPICS	415	14.659 %
ENGINEERING	361	12.752 %
POLYMER SCIENCE	166	5.864 %
METALLURGY METALLURGICAL ENGINEERING	160	5.652 %
ELECTROCHEMISTRY	115	4.062 %
ENERGY FUELS	71	2.508 %
OPTICS	66	2.331 %

Nanoparticle research in India

Table 7 depicts the top ten research areas of Nano Particle research in India. It is clearly seen from the table that maximum number of publications in comes from the area "Material Science", contributing to 1266 records which is followed by the area "Chemistry" and "Physics" with 909 and 847 records respectively.

Funding Agencies

Table 8: Top three funding agencies in Nanoparticles research in India

S.NO	FUNDING AGENCIES	RECS
1	CSIR	317
2	DST	272
3	UGC	219

Table 8 presents the top three funding agencies in Nanoparticles research in India. It is clearly noticed from the table that Council of Scientific and Industrial Research (CSIR) stands first with 317 funding supported papers followed by Department of Science and technology (DST) and University grants commission (UGC) with 272 and 219 funding supported respectively.

Word Frequency

Table 9: Frequency of keywords used in Nanoparticle research in India (Top ten)

S.NO	WORD	RECS	PERCENT	TLCS	TGCS
1	NANO	1141	40.3	665	11824
2	SYNTHESIS	569	20.1	311	6746
3	PROPERTIES	436	15.4	203	3484
4	NANOPARTICLES	417	14.7	146	4512
5	CHARACTERIZATION	339	12.0	154	3460
6	PARTICLES	303	10.7	185	3205
7	EFFECT	267	9.4	142	2368
8	OXIDE	215	7.6	83	2264
9	USING	212	7.5	92	3099
10	MAGNETIC	184	6.5	80	1377

Table 9 presents the top ten keywords used by the researchers in their publications. It is clearly seen from the table that the word "Nano" has been used in 1141 records by the researchers with a Global citation score of 11824 and a Local citation score of 665, followed by the word "Synthesis" in 569 records with a global citation score of 6746 and a Local citation score of 311.

Summary and Conclusion

A scientometric analysis was undertaken in this study to show the present state of Nano particles research in India. The study found out that a total of 2831 records were published by the researchers. Indian Institute of Technology and Bhaba Atomic Research centre were the major producers of Nanoparticles research in India. In the ranking of authors, Khanna PK has published the maximum number of publications with 42 records, having a global citation score of 773 and a Local citation score of 68, followed by

Das S and Kumar A with 34 and 21 records, having global citation scores of 277 and 437 respectively. In the contribution of journals, Journal Of Nanoscience And Nanotechnology stands first with 82 records, having a Global citation score of 454 and a Local citation score of 27 followed by Journal Of Alloys And Compounds with 70 records, having a Global citation score of 876 a Local citation score of 34. In the extent of International collaboration, that India has often collaborated South Korea, contributing to 82 records having a global citation score of 742.In the frequency of keywords used, the word "Nano" has been used in 1141 records by the researchers with a Global citation score of 11824 and a Local citation score of 665, followed by the word "Synthesis" in 569 records with a global citation score of 6746 and a Local citation score of 311. In analyzing the core research areas the maximum number of publications in comes from the area "Material Science", contributing to 1266 records. In analyzing the contribution of funding agencies, that Council of Scientific and Industrial Research (CSIR) stands first with 317 funding supported papers followed by Department of Science and technology (DST) and University grants commission (UGC) with 272 and 219 funding supported respectively. Finally, It is concluded that the growth of Nanoparticles research publications in India is increasing every year at a considerable rare which indicates a healthy trend.

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A HYBRID PARTICLE SWARM OPTIMIZATION ALGORITHM FOR SOLVING JOB SCHEDULING PROBLEMS

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Abstract

In the field of engineering science and operational analysis, PSO is used which is an optimization algorithm inspired by the social behavior of birds flocking and fishes shoaling with its group. The Particle Swarm Optimization (PSO) Algorithm is very efficient and effective in solving optimization problems. Research has led to a large number of techniques to solve this problem; in particular, genetic algorithms (GA) produce good results compared to other techniques. A disadvantage of GA, though, is that they easily become trapped in the local minima. In this paper, a Simulated Annealing (SA) Algorithm is used along with a PSO in order to avoid the local minima problem and to benefit from the advantages of both types of algorithms. Simulated Annealing (SA) Algorithm can hinder the premature convergence to the local optima and diverges the particles using its strong ability of local search. Here, this paper propose a new hybrid algorithm of Particle Swarm Optimization (PSO) and Simulated Annealing (SA) in optimization problems and also proposed to solve the Flexible job shop scheduling problem. This paper shows that the proposed algorithm exhibits a lot of outstanding performance than PSO-GA.

Key words: *Genetic Algorithm, Particle Swarm Optimization, Simulated annealing, Job Scheduling*

Introduction

An Evolutionary swarm intelligence technique is applied in this paper for solving job scheduling problem. It is a combinatorial optimization problem. The main objective of both kinds of problem is jobs in a sequence that gives a minimum value of makespan[1]. Over the long time scientist have developed population based algorithm and the most common algorithms are genetic algorithm, ant colony optimization algorithm and Particle swarm optimization [2].The next most common population based algorithm is particle swarm optimization, which shares many similarities with genetic algorithms. Random selections are undergone for system initialization. There is no cross over mutation for genetic algorithm and Particle swarm optimization all Combination of job sequence can be found using particle swarm optimization. Then the algorithm is extended after understanding particle swarm optimization algorithm and is applied in job scheduling problem for n jobs and m machines[3]. Job scheduling is a type of combinatorial optimization problem. Scheduling jobs has been a popular research for many years. There are many different ways to schedule jobs and the threads which make them up. However, only a few mechanisms are used in practice and studied in detail. The job scheduling problem (JSP) is a general scheduling problem in the manufacturing industry [4]. A classical JSP consists of N and M number of different jobs and machines, respectively. A set of operations and related machines with known processing time are involved in the process of each job [5][6]. Several inhabitants based on an algorithm have been proposed to find near-optimal solutions to the difficult optimization problems like scheduling and routing problems. An inhabitant based algorithm consisting of possible solutions to the problem are modified by applying some operators in the solution depending on the information of its fitness values [3].

In literature, different hybrid techniques are applied for performing the job scheduling process in various fields. In this paper, the methods of Genetic Algorithm (GA), Particle swarm optimization (PSO) and Simulated anneling(SA), have been studied and is being applied to the job scheduling case so as to get an optimum processing time[15]. In the paper, we proposed a new solution which combines PSO algorithm with the simulated annealing algorithm (SA) and that too in such a rounding fashion, so that SA can be applied whenever PSO tends to converge into a local minima/ maxima and SA diverges the solution from the apparent best[12][13] . By integrating SA to PSO, the new algorithm, which we call as Hybrid PSO-SA Algorithm, we made it escape from converging into the local minimum, as well as simplify the implementation of the combined algorithm[9][14].

The original PSO was used to solve continuous optimization problems. But PSO algorithm has a shortcoming of converging prematurely after getting trapped into some local optimum solution point and considers it to be global optimum solution point. Simulated Annealing (SA) Algorithm can hinder the premature convergence to the local optima and diverges the particles using its strong ability of local search. Here, this paper proposes a new hybrid algorithm of Particle Swarm Optimization (PSO) and Simulated Annealing (SA) in optimization of complex, multi-dimensional functions. The above hybrid techniques are completed with minimum make span and completion time. Many of the recent research studies focus on metaheuristic approaches such as ACO_PSO, PSO_GA and ABC_GA with job scheduling. This is also hybrid technique which is better than the above existing algorithm (i.e.) makespan and completion time is minimized when compared to existing algorithm.

The rest of this paper is coordinated as follows: Section 2 briefly reviews the genetic algorithm. Section 3 briefly describes about the Particle Swarm Optimization. Section 4 describes about simulated annealing. Section 5 briefly describes about the proposed method (PSO_SA). Section 6 discusses about Experimental results and discussion and finally some conclusion are made in Section 7.

Genetic algorithms (GAs)

Genetic algorithms (GAs) are (Goldberg 1989) reliable search techniques to find out efficient solutions from the huge search space within polynomial time using the principle of evolution. Task graphs in homogeneous, heterogeneous and dedicated multiprocessor systems can be scheduled by genetic algorithms as explained in Blaha et al (2001), Hoos & StAutzle (2004), Wang et al (1997), Wu et al (2004) and Zomaya et al (1999). In a genetic algorithm, an individual or Chromosome is a solution for a problem in search space. Past best solutions and derived new solutions are in a genetic algorithms solution space. The fitness value is a chromosome's quality metric regarding other chromosomes in solution space and is calculated using a fitness function.

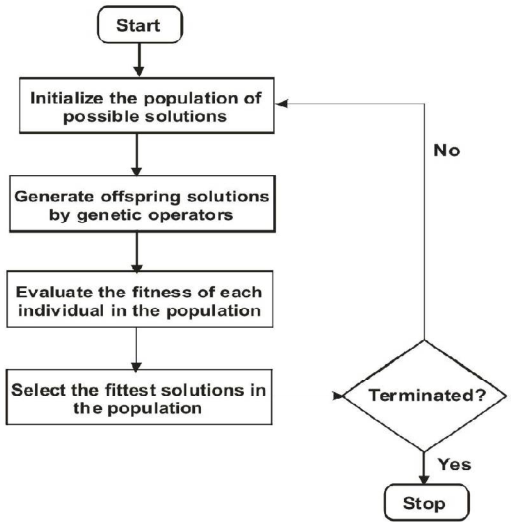

Figure 1.Genetic algorithms

The first step in genetic algorithm (Figure 1) is the creation of random generated solutions. New offspring are generated using operators like selection, crossovers and mutation. After evaluation of the fitness value, qualified individuals are included in the next generation. The algorithm terminates after reaching a specified fitness value or number of iterations specified in the termination condition (Zomaya et al 1999).

PARTICLE SWARM OPTIMIZATION

Particle swarm optimization (PSO) is a population based stochastic optimization technique, inspired by social behaviour of bird flocking or fish schooling. Each particle keeps track of its coordinates in the problem spaces which are associated with the best solution (fitness) it has achieved so far. (The fitness value is also stored.) This value is called *pbest*. Another "best" value that is tracked by the particle swarm optimizer is the best value, obtained so far by any particle in the neighbours of the particle. This location is called *lbest*. When a particle takes all the population as its topological neighbours, the best value is a global best and is called *gbest*.

After finding the two best values, the particle updates its velocity and positions with following equation (a) and (b).

v[] = v[] + c1 * rand() * (pbest[] - present[]) + c2 * rand() * (gbest[] - present[]) ———— (1)

present[] = present[] + v[] ——(2)

v[] is the particle velocity, present[] is the current particle (solution). pbest[] and gbest[] are defined as stated before. rand () is a random number between (0,1). c1, c2 are learning factors. Usually c1 = c2 = 2.

The pseudo code of the procedure is as follows.

For each particle

Initialize particle

END

Do

For each particle

Calculate fitness value

If the fitness value is better than the best fitness value (pBest) in history

set current value as the new pBest

End

Choose the particle with the best fitness value of all the particles as the gBest

For each particle

Calculate particle velocity according to equation—— (1)

Update particle position according to equation ——(2)

End

While maximum iterations or minimum error criteria is not attained

Particles' velocities on each dimension are clamped to a maximum velocity Vmax. If the sum of accelerations would cause the velocity on that dimension to exceed Vmax, that is specified by the user. Then the velocity on that dimension is limited to Vmax.

Simulated annealing (SA)

Simulated annealing (SA) (Metropolis et al 1953) is a method to search global space statistically using the Monte Carlo method. The core idea is from the Annealing Process of crystalline structures to form a more ordered state by repeated heating and slow cooling. Performance of SA algorithms in scheduling, workflow applications in grid services is evaluated in Young et al (2003). A general Simulated Annealing algorithm is explained in Figure 2.

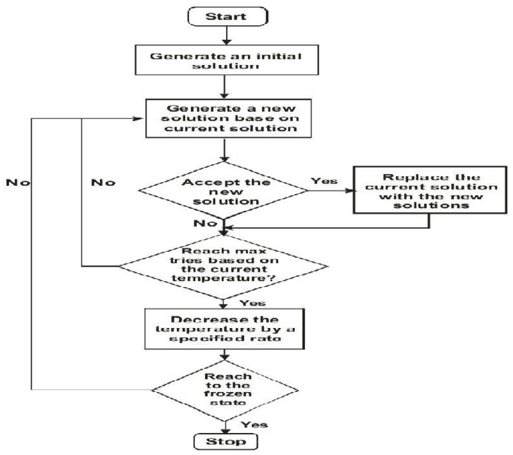

Figure 2. Simulated annealing

The initial input of SA algorithm is formed by the random allocation of resource to a task. Each time the temperature is lowered in simulated annealing algorithms; many steps have to be performed. A number of iterations are needed to sample search space in an annealing process. A new solution is formed in each cycle by making random changes in the current solution. Randomization can be introduced by a task to be scheduled on different resource (Young et al 2003). Metropolis algorithm (Metropolis et al 1953, Young et al 2003) is used to determine the current solution by comparing the new solution and the existing one. If the new solution is better than the current one, the new solution is accepted as the current solution. Lower execution time is considered the best solution in workflow scheduling minimization problems. The temperature decreases, once the defined number of cycles are completed. The temperature decreases till the lowest permissible temperature. During termination, simulated annealing algorithm gives the best solution obtained from the beginning.

Proposed Method (PSO-SA)

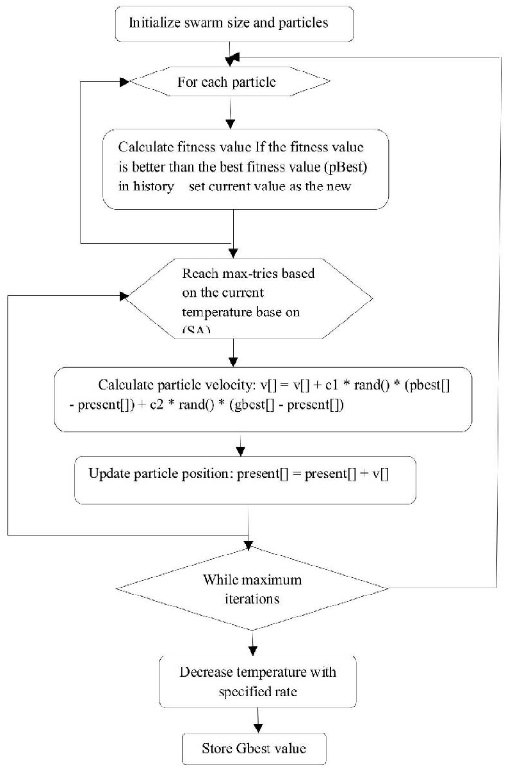

Figure 3. Proposed Method (PSO-SA)

Experimental Results and Discussion

The performance of the proposed algorithm is evaluated under three different job datasets and the results are compared against the conventional algorithms such as PSO, CS and

PSO_CS. The results that are obtained in different experiments are given in following Table 1.

TABLE 1**:** Job Completion Time for Job scheduling Dataset I by the proposed with (i) 50 iterations, (ii) 100 iterations PSO, GA,PSO_GA and PSO-SA algorithm with the number of 10 jobs and resources are 50,100 and 150.

The results that are obtained in different experiments are given in following Figures 5 and 6.

Iterations	Resources	PSO	GA	PSO-GA	PSO-SA
50	50	23.98	23.12	16.03	14.08
	100	18.65	24.73	22.49	16.15
	150	10.62	11.15	24.61	9.56
	200	12.81	12.75	21.09	10.97
	250	20.63	18.80	19.91	17.08
100	50	23.35	24.65	17.92	14.93
	100	21.54	21.33	22.71	20.60
	150	11.57	23.92	18.62	9.78
	200	13.03	13.24	11.54	10.01
	250	18.21	17.23	14.39	13.91

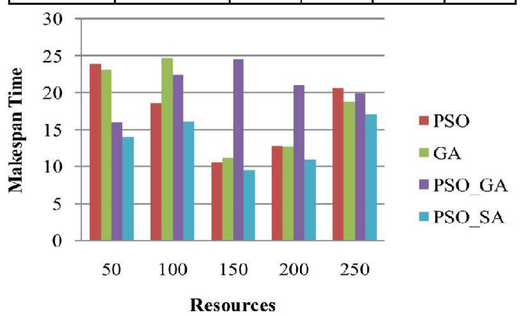

Figure 4: Minimum makespan time for individual Job Datasets proposed with 50 Iterations for GA, PSO, PSO_GA, and PSO_SA.

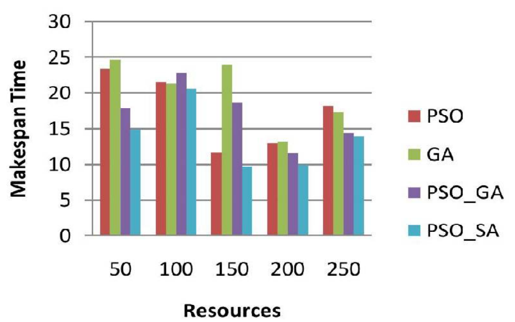

Figure 5: Minimum makespan time for individual Job Datasets proposed with 100 Iterations for GA, PSO, PSO_GA, and PSO_SA.

Conclusion

In this paper, proposed a hybrid algorithm (PSO -SA) that combines the individual PSO and SA algorithm in such a fashion that they overcome the shortcomings of each other but does not dominate their positive capabilities of finding optimum solution of complex functions in multi-dimensional space. The drawbacks of existing techniques (PSO, GA and PSO_GA) were solved by considering few efficient factors in a job scheduling process. Thus, the proposed technique has achieved high performance in allocating the available jobs to the precise resources and also attained a high efficiency. Hence, the proposed technique is capable of finding the optimal jobs to the resources and also in achieving the minimum completion and makespan time.

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A STUDY ON THE FUNDING SUPPORTED PAPERS IN TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY

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Abstract:

This paper examines the impact of funding supported papers in Tamil Nadu Veterinary & Animal Sciences University. The data for this study have been gathered from Web of Science (WoS), which is a citation database managed by Thomson Reuters. The study found out that Tamil Nadu Veterinary & Animal Sciences University had published the 2182 research papers and 150 funding supported papers In the classification of funding sources, Tamil Nadu Veterinary & Animal Sciences University. Further, the top three funding agencies were also discussed in this paper.

Keywords: Funding, Web of Science, SCI

Introduction

Universities are institutions that achieve avibrant role in the contemporary societies by educating and imparting knowledge.Research and development (R&D) is requisite for construction up an institute's production latentin all segments. It supports the expansion of institute's growth and brings indispensable changes in all segments. Most of the research funding originates from two main resources, corporations and government. With the stable growth of R & D venture, funding has been playing a very significant role in research and publishing.

Scientometrics is the study dealing with the quantification of written communications, which helps, in the measurement of the published knowledge. It reflects the pattern of growth literature, Inter relationship among different branches of knowledge, productivity, authorship patter, and degree of collaboration, pattern of collection building, and their use.

Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) is a veterinary university founded in 1989 in Chennai, India. It is composed of the Madras Veterinary College, Veterinary College and Research Institute, Namakkal, Veterinary College and Research Institute, Tirunelveli ; Veterinary College and Research Institute, Orathanadu and the Institute of Food and Dairy Technology, Koduvalli. Research farms are for leprosy bacteria, for prawn and edible fish culture, and for animal feed safety.

Review of Literature

Markusova*et al.*(2012) analysed the "impact of competitive funding on research output in Russia and found out that Russian publications of research supported by foreign funding agencies have more visibility and appear in journals with an average mean impact factor 1.9 times higher than average Russian publications in Web of Science".

Wang *et al.* (2011) analysed the "science funding research output in ten countries and found out that China, Germany and Spain are single funding agency dominated countries, while USA, Japan, Canada and Australia are double funding agencies dominated countries, and the source of funding in UK, France and Italy is diversified".

Campbell et al. (2010) utilized "bibliometrics as the performance measurement tool for evaluating the impact of the 29research which was funded by the National Cancer Institute of Canada (NCIC). They workedon Thomson Reuters' Web of Science (WoS) database (which includes three databases: Science Citation Index (SCI) Expanded, the Social Sciences Citation Index and the Art & Humanities Citation Index) trying to cover all fields of science to get the respective statisticsof NCIC's funded researchers".

Leydesdorff and Wagner (2009) examined the "macro level indicators of the relation between research funding and research output and concluded that the price per paper cannot be estimated".

Butler(2003), in explaining "Australia's share of increased ISI publications found out that the driving force behind the Australian trend appears to lie with the increased culture of evaluation faced by the sector on his study".

Gingras (1996) in a report to the Program Evaluation Committee of NSERC discussed "the feasibility of bibliometric evaluation of the funded research".

Objectives

The main objectives of this paper are:

- To identify total number papers published in Tamil Nadu Veterinary & Animal Sciences University.
- To identify total number of funding-supported papers in Tamil Nadu Veterinary & Animal Sciences University
- To analyze the top three funding agencies in Tamil Nadu Veterinary & Animal Sciences University.
- To find out the types of funding sources in Tamil Nadu Veterinary & Animal Sciences University

Methodology

The data for the study were extracted from Web of Science database which is a scientific and indexing service managed by Thomson Reuters. We have analysed the funding supported papers published by the faculty and researchers of Tamil Nadu Veterinary & Animal Sciences University.

The following search strategy has been used to extract data for the study

ADDRESS-ABS-KEY ("Tamil Nadu Veterinary & Animal Sciences University") AND PUBYEAR (All years) and further by limiting the funding agencies, the data were downloaded.

The bibliographic details such as Journals, research areas, collaboration, etc., were downloaded as CSV format and further analysed using Microsoft Excel.

Analysis

A total of 2182 papers and 150funding-supported were published by Tamil Nadu Veterinary & Animal Sciences University.

Research Papers and Funding–Supported Papers in Tamil Nadu Veterinary & Animal Sciences University

Table 1: The Number of Papers and Funding-supported Papers

INSTITUTION	NO.OF SCI PAPERS	NO. OF FUNDING SUPPORTED PAPERS	PROPORTION (%)
TamilNadu Veterinary & Animal Sciences University	2182	150	26.67

Table 1 shows the number of papers and funding-supported papers in Tamil Nadu Veterinary & Animal Sciences University. It is clearly seen from the table that totally 2182papers and 150 funding supported papers. The proportion of funding-supported papers contributes to 26.67%.

Funding Agencies

Table 2: Top Three Funding Agencies in Tamil Nadu Veterinary & Animal Sciences University.

	Funding Agencies	No. Of Funding Supported Papers	Proportion (%)
Tamil Nadu Veterinary & Animal Sciences University	Department of Bio Technology	42	28
	Indian Council of Agricultural Research New Delhi	27	18
	Tamil Nadu Veterinary & Animal Sciences University	21	14

Table 2 presents the top three funding agencies in Tamil Nadu Veterinary & Animal Sciences University. In funding supported SCI papers, the maximum number of publications comes from the Department of Bio Technology with 42 papers, contributing to 28% of funding-supported papers which is followed by Indian Council of Agricultural Research New Delhi with 27 papers, amounting to18% and Tamil Nadu Veterinary & Animal Sciences Universitywith 21 papers, amounting to14%.

Types of Funding Sources

Table 3: Top Three Funding Agencies in Tamil Nadu Veterinary & Animal Sciences University

SCI PAPERS		
CONDITION	TYPE	UNIVERSITY SATISFIED
$R_{1,2}> 2$, $P_1> 30\%$	SINGLE FUNDING AGENCY PREDOMINATED	
$R_{1,2}< 2$, $R_{2,3}> 2$, $P_2 >10\%$	DOUBLE FUNDING AGENCY PREDOMINATED	
$R_{1,2}< 2$, $R_{2,3}< 2$	FUNDING SOURCE DIVERSIFIED	Tamil Nadu Veterinary & Animal Sciences University

In order to quantify the difference of funding sources in University of Peradeniya, we calculate the ratio of proportions of different funding agencies using the following equation.

$$R_{1,2} = \frac{P_1}{P_2}, R_{2,3} = \frac{P_2}{P_3}$$

Where

- P1, P2and P3 denote the proportion of papers supported by the 1st, 2nd and 3rd funding agency in one country.
- R1,2is the ratio of P1to P_2.
- R2, 3 is the ratio of P2to P3.

Single Funding Agency Predominated

At First, the value of $R_{1,2}$is calculated. The threshold is set as 2 which means if $R_{1,2}$is greater than 2 the number of papers supported by the first funding agency is more than twice of that of the second funding agency and the second condition is P_1 must be greater than 30 per cent. If both the conditions are satisfied, it is considered that 1st funding agency dominates the funding sources in the country which is called Single funding agency predominated type.

Double Funding Agency Predominated

In order to find Double funding agency predominated type the value of $R_{2,3}$is calculated. The same threshold of 2 is set which means if $R_{2,3}$ is greater than two, $R_{1,2}$ is less than two and P_2 greater than 10 per cent.If these three conditions are satisfied, it is considered as Double funding agency predominated type. University of Peradeniya falls into this category in the funding supported SCI papers. Funding Source Diversified

Finally, if both $R_{1,2}$ and $R_{2,3}$ are less than 2, then it indicates that the gaps among the proportions of top three funding agencies are close. Bharathidasan University falls into this category in the funding supported SSCI papers.

Conclusion

In this study, a scientometric analysis was undertaken in order to show the present state of funding supported papers in TamilNadu Veterinary & Animal Sciences University. The results of the present study clearly showed that funding sources are diversified in case of SCI papers in TamilNadu Veterinary & Animal Sciences University.

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INDIAN ACADEMIC RESEARCHERS ASSOCIATION

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GUIDELINES FOR AWARD OF RESEARCH PROJECTS

1. Preamble

The Indian Academic Researchers Association (IARA) is taking its wings to the sky with the prime motive of promoting research in the domain of social sciences. It facilitates viable platform to teachers who are working in Universities/Colleges/ research institutions for undertaking individual and excellent research in their specialized areas. To this, IARA provides financial grant to undertake research projects in the area of social science with an objective to find solutions to perennial social issues confronting the nation. In this way, the IARA will contribute valuable inputs to the Government of India and other stakeholders for taking policy decisions. This endeavour, in this regard vouches for our social responsibility to the society also.

2. Eligibility

This grant is mainly confined to teachers who are working in Universities/ Colleges/ research institutions functioning within India. Hence, before applying for financial assistance, the **applicant should become a Fellow member of the IARA.** (Guidelines for Fellow members in www.selptrust.org)

3. Nature of Assistance

The IARA provides a maximum sum of Rs. 50,000 as financial assistance for a research project. Financial assistance covers travel and field work, purchase of books and journals relating to research area, hiring services and contingency.

4. Procedure for Applying

All interested teachers working in Universities/ Colleges/ Research Institutions may submit their Research Proposal along with prescribed Application Form (Annexure - I). Notification will be given in the official website of IARA during the month of September every year.

The research proposal comprises Introduction, Significance of the study, Statement of the problem, Research questions, Objectives of the study, detailed Research methodology, chapter scheme and expected outcomes of the study.

The duly filled-in application and other relevant documents are to be sent to the following address on or before **30th January 2017**:

President ,
Indian Academic Researchers Association,
5 A, Sathyasai Street,
Kurunji Nagar - West,
K.K. Nagar,
Tiruchirappalli - 620021, Tamil Nadu.

5. Selection Procedure

The research proposal will be considered for evaluation on the basis of its social relevance and expected outcome. The panel of experts of IARA will scrutinize the research proposals submitted by the applicants. The financial assistance will be provided by the IARA on the basis of the recommendations made by the Experts Committee and the availability of funds. The approval-cum-sanctioning letter will be sent to the official address of PI.

6. Tenure and Implementation

A maximum of 6 month period will be given for completion of the research project undertaken. The effective date of implementation of the project will commence from the date to be mentioned in approval-cum-sanctioning letter.

7. Performance Evaluation

PI must send the progress of the research to IARA once in two months. The performance of the research is evaluated by the review committee appointed by the IARA. The appraisal would consist of comparison of the target reached against the research plan which was given in the research proposal by the PI. Based on performance evaluation report, IARA has the right to extend or terminate financial assistance.

8. Procedure for Release of Grants

After receiving the letter of acceptance from PI, 60% of the grant will be released as first instalment. Remaining grant of 40% will be released on receipt of the following documents:

i) Two copies of the project report along with soft copy

ii) A consolidated item-wise detailed statement of expenditure incurred during the complete project period. It will be duly signed by the Head of the Institution and the Principal Investigator.

iii) The unutilized grant if any must be refunded immediately through demand draft drawn in favour of the Managing Trustee, Indian Academic Researchers Association, payable at Tiruchirappalli.

9. General Rules

a) After receiving selection cum approval letter, the PIs should send their letter of acceptance duly forwarded by the Head of Institution to the IARA.

b) Transfer of Project is not entertained in any case.

c) If a Principal Investigator fails to complete the project work or if IARA is not satisfied with the progress of the research work, he / she has to refund the entire amount released by IARA with 10 % of interest.

d) The period of research is not extendable, in any circumstances.

e) PI cannot purchase any equipment / machinery from research grant.

f) PI cannot appoint research fellow or any technical staff under IARA research project scheme.

g) Part of fund sanctioned by IARA cannot be utilized for organizing seminars or any similar events.

h) PI should complete the research work within the amount sanctioned by IARA. If any additional expenditure is incured, it may be borne by the principal investigator's institution concerned.

i) No honorarium will be paid to PI for undertaking research project. On successful completion of project, Certificate of Appreciation will be given to PI.

10. Annexure / Checklists

1. Forwarding letter from the Competent Authority
2. Application for research project
3. Full length research proposal not exceeding 10,000 words as Annexure - I
4. CV of Principal Investigator as Annexure - II

The aforesaid rules and regulations are subjected to periodical review and amendment.

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