Anekant Education Society's
Anekant Institute of Management Studies (AIMS), Baramati

Under
NAAC Sponsored Seminar Scheme

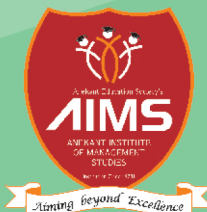### Proceeding (Volume-II)

11th National Conference 2022

On

"Innovative Practices for Quality Enhancement in Higher Education Institutions" (Online)

7th (Friday) & 8th (Saturday) October, 2022

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QUALITY

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Anekant Education Society

Anekant Education Society is established in 1961 under the able guidance of Late Shri Fulchandji Gandhi, Education Minister of the Former Hyderabad State.The founder President of the Society Late Shriman Seth Lalchand Hirachand Doshi,founder President of Premier Automobiles Ltd., and Walchand Group ofxIndustries was determined on attracting the best talent to institutions operating under the auspices of AES. The society has chosen the Jain concept of"Siddhirnekantat" and "Anekantvad" in the nomenclature of the Society. The Society started Undergraduate Programs in Baramati in the year 1962. The college eventually was renamed as Tuljaram Chaturchand College. In a span of about 5 decades of its presence, Anekant Education Society has touched upon the lives of almost every household in and surrounding areas of Baramati.

Anekant Institute of Management Studies (AIMS), Baramati

Anekant Education Society has added another feather to its cap by starting AIMS to provide MBA course. AIMS is certainly working beyond excellence in all the accreditations, affiliations and Certifications of the nominated authorities. The initiative is to develop management professionals with a view to excel in the corporate world as well as take it to new heights. The need is to nurture the talents and hone their skills which are achieved only through AIMS. Since its inception, AIMS is providing quality education and in a period of few years the Institute has made its mark on academic, cultural and social environment of Baramati.

About the 11th National Conference

The aim of proposed conference is to enhance the quality of HEI by adopting various innovative practices. The expected outcomes of this conference are as follows:

I. Participants will able to realize the importance of NAAC in the quality of HEI
ii. Participants will able to discuss the adopted innovative practices about the quality enhancement in the HEI
iii. Participants will able to share the ideas about quality sustenance in the HEI
iv. Participants will able to share the innovative practices adopted by HEIs to convert challenges in to opportunities

Note

AIMS does not take any responsibility for any mistakes/errors incorporated in the article of the authors, either in setting, grammatical, printing of text or visuals.

<h1 style="color:red; text-align:center">Proceeding(Volume-II)
"Innovative Practices for Quality Enhancement in Higher Education Institutions"</h1>

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From AES President's Desk

I congratulate AIMS Baramati for taking up "Innovative Practices for Quality in Higher Education Institutions" as the title for its 11th National conference. I am also happy that the institute is partnering with NAAC in this endeavor.

We envisioned to deliver quality management education to the youth of Baramati, at par with any best institute among the SPP University affiliated institutes! I am happy to note the progress made by AIMS, Baramati.

I believe quality education is one that focuses on the overall development of the student—the social, emotional, mental, physical, and cognitive development of each of them regardless of gender, race, ethnicity, socioeconomic status, or geographic location, preparing them for life, not just for an academic degree. I hope the practical aspects of achieving this wholistic learning shall be deliberated during the present conference.

I am sure the various resource persons and delegates will share their expertise, ideas and thought processes and help the Conference achieve its objectives fully. I wish all the stakeholders of this conference a great success!

With Warm Regards

Shri. Jawahar M. Shaha (Wagholikar)
President,
Anekant Education Society, Baramati

From AES Secretary's Desk

Anekant Institute of Management Studies has again made us proud by hosting its 11th National Conference on the theme "Innovative Practices for Quality in Higher Education Institutions". For last few years, quality over quantity has assumed greater buzz especially in the field of education in the developing countries. A recent report says that developing countries have made remarkable progress in achieving quantitative education targets. Since the turn of the millennium, almost 50 million children around the world have gained access to basic education – and most are reaching completion. But as recent data shows, this is not typically the case for qualitative improvements in education.

Considering the above, impetus to quality in Higher Education has become urgent need of the hour! Therefore, the present theme of the AIMS National Conference assumes greater relevance. Our distinguished speakers nominated by NAAC and identified by our organizing committee shall throw light on the burning issues in this regard and show us a path to follow hereafter. I also wish the delegates coming from various HEIs all over the country shall share their expertise, insights, and research outcomes to better the world of education.

I wish a great success to all the concerned in this wonderful academic event!

With Best Regards

Shri. Milind R. Shah (Wagholikar)
Secretary,
Anekant Education Society, Baramati

From the Desk of Secretary, AIMS

I cordially welcome all our distinguished resource persons, teaching faculty members and the student community to the 11th National Conference. I consider the present theme i.e., "Innovative Practices for Quality in Higher Education Institutions" as most befitting in the ongoing circumstances in the field of education.

Education systems reforms are needed in many countries today in the aftermath of the pandemic which has raised many questions on the sustainability of the present education model. As somebody has rightly said, education must have six necessary components: (1) Assessment, (2) Autonomy, (3) Accountability, (4) Attention to teachers, (5) Attention to student's overall development, and (6) Attention to one's culture. I think Successful education system requires to address these key components.

I hope the present conference shall touch upon these issues and deliver relevant outcomes in this regard.

Shri. Vikas S. Shah (Lengarekar)
Secretary,
AIMS, Baramati

Preface

Greetings and welcome to AIMS Baramati !!!!!!
It is a Great Going at AIMS !!!

We have planned our 11th National Conference on 'Innovative Practices for Quality Enhancement in Higher Education Institutions'. This National Conference is in association and sponsored by NAAC Bangalore.

I am sure you will appreciate the way we have coined the title of the 11th National Conference. We had sequential discussion and intellectual contemplation at length by the AIMS faculty and construed on 'Innovative Practices for Quality Enhancement in Higher Education Institutions' as a title for the 11th National Conference. In real term the quality enhancement in the education sector is need of the hour. The deliberation by the scholars, academia and corporates shall strengthen the stem of quality in education sector.

The digital promo of the 11th national Conference has fetched research papers, case study from PAN India namely Tamil Nadu, Andhra Pradesh, Karnataka, Punjab and Maharashtra, from all sectors like, corporate, education, NGO etc. Research papers are flooded in, and our editorial team to their best on quality parameters like plagiarism check, blind review, relevancy of papers etc., at its depth.

This voluminous work with watertight coordination in the leadership of conference Convener Dr. Prof. T. V. Chavan and Co-Convener Dr. Prof. S. S. Badave.
The team structure was of review & editing of the research papers by learned Prof.Dr.U.S.Kollimath, Prof.Dr. A.Y. Dikshit, Prof.Dr.D.P.More, Prof.S.S.Khatri and Prof.Dr.S.V.Khatavkar have done marvelous job.

The commendable work of various committees for instance; Prof. Dr. Prof. P.V.Yadav did wonderful work in Registration Committee. The Presentation Committee effectively monitored by Prof.D.Hanchate and pulses of conference were perfectly covered by Social Media Committee headed by Prof. S.S. Jadhav.

The entire hospitality was rightly at its place on time under the dynamic role of Mr. Vijay Shinde, Mrs. S.M.Beldar and all the non-teaching staff were live wires for the effective conduct of conference.

Way of doing is QUALITY!!!Happy Learning @ AIMS !!!

Dr. M.A. Lahori
Director, AIMS, Baramati.

National Conference on
"Innovative Practices for Quality Enhancement in Higher Education Institutions"

a) Theme:

Innovative Practices for Quality Enhancement in Higher Education Institutions

b) Sub Themes:

i.	NEP preparedness
ii.	Revised Accreditation framework 2022
iii.	Innovations in Delivery of Curriculum
iv.	Innovative pedagogy and its impact on quality in teaching learning
v.	Student Satisfaction Survey (SSS) and its impact on quality enhancement
vi.	Mechanism for student's feedback and it's analysis
vii.	Innovative ICT based practices and its impact on quality in HEI
viii.	Use of MOOC in Teaching- Learning
ix.	E-content development and its impact on teaching-learning process
x.	Impact of Industry Academia Interaction on Institutional Development
xi.	Role of IQAC in Quality enhancement and sustenance in HEIs
xii.	Ethics and Values in Higher Education System
xiii.	Integrating digital technologies to promote inclusive practices
xiv.	Need of Academic and Administrative audit
xv.	e-Governance and Its impact on quality enhancing in administration
xvi.	Role of Library and e-resources on Institutional development
xvii.	Institutional Values and Best Practices
xviii.	Innovative techniques used by IQAC for quality enhancement

Anekant Education Society's
Anekant Institute of Management Studies (AIMS)
In Association with
National Assessment and Accreditation Council (NAAC)
Under sponsored seminar scheme
11th National online Conference in Oct., 2022 on the theme
"**Innovative Practices for Quality Enhancement in Higher Education Institution**"
7th (Friday) & 8th (Saturday) Oct., 2022

Agenda Day – 1

Schedule	Program	Details
Inaugural Program		
10.00 – 10.02 AM	Welcome Note	Anchoring Team
10.02 – 10.04 AM	Saraswati Vandana	Prof. S.S. Jadhav ,Social Media Desk
10.04 – 10.07 AM	Glimpses of Preceding Conferences	Social Media Desk
10.07 – 10.10 AM	Event Briefing	Anchoring Team
10.10 – 10.13 AM	Making of Conference	Social Media Desk
10.13 – 10.23 AM	Directorial address	Dr.M.A. Lahori, Director, AIMS, Baramati
10.23 – 10.25 AM	Online Release of Conference proceeding	Dr. U.S. Kollimath
10.25 – 10.35 AM	Secretarial address (Chairman of the program)	Hon. Vikas Shah Lengarekar
10.35 – 10.40 AM	Chief Guest Introduction	Anchoring team
10.40 – 11.20AM	Chief guest address	Dr. C.V. Murumkar NAAC Nominee Principal T.C. College, Baramati
11.20 – 11.25 AM	Vote of Thanks	Dr. S.S. Badave Co-Convener , NC 2022
11.25– 11.30 AM	*Bio- Break*	
Plenary Session: I		
11.30 – 11.35AM	Introduction to Speaker I	Anchoring Team
11.35 – 12.25 PM	Plenary Session: I- Title- Modern Teaching Methods in Management	Dr. P. Vikkraman Associate Professor & AC Department of Management Studies, Anna University, Regional campus Coimbatore
12.25 – 12. 30 PM	Q & A session and Vote of Thanks	Dr. U.S. Kollimath
Plenary Session: II		
12.30 to 12.35PM	Introduction to Speaker II	Anchoring Team
12.35 to 1.25 PM	Plenary Session: II Title: Outcome Based Education: Implementation and latest trends	Dr.Indrajit Nivasrao Yadav-Patil Principal, Sahkar Maharshi Shankarrao Mohite-Patil Institute of Technology and Research, Akluj
1.25 to 1.30 PM	Q & A session and Vote of Thanks	Dr. S. V. Khatavkar
1.30 – 2.30 PM	*Lunch Break*	
	Paper Presentation Sessions	
2.30 Onwards	Summary of Presentation	Dr. A.Y. Dikshit
	Vote of Thanks	Prof. P.D. Hanchate

Dr.S.S. Badave	Dr. T.V. Chavan	Dr M.A.Lahori
Co convener	**Convener**	**Director**

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Agenda Day – 2

Schedule	Program	Details
Technical Session		
10.00 – 10.05 AM	Glimpses of Day 1	Prof. S.S. Jadhav ,Social MediaTeam
10.05 – 10.07 AM	Introduction – Speaker III	Anchoring Team
10.07 – 10.57 AM	Plenary Session III Title: Innovation in Academic Administration and Governance for Quality enhancement in Higher Education	Prof. Julie Dominic A Little flower College NAAC Nominee Guruvayoor, Kerala, India
10.57-11.07 AM	Q & A session and Vote of Thanks	Prof. S.S. Khatri
Plenary Session IV		
11.07 – 11.10AM	Introduction – Speaker IV	Anchoring Team
11.10- 12.00PM	Plenary Session IV Title: New education policy in Higher Education	Dr. Pavan Patel Professor, Siva Sivani Institute of Management , Hyderabad
12.00- 12.10PM	Q & A session and Vote of Thanks	Prof. S.S. Jadhav
12.10- 12.20	**Bio-Break**	
12.20 - 12.22	Introduction – Speaker V	Anchoring Team
12.22 - 1.15PM	Plenary Session V Title: NAAC- RAF 2022: Opportunities	Dr. Rupendra Gaikwad Principal, Ramsheth Thakur College of Commerce and Science, Kharghar, Navi Mumbai.
1.15- 1.30PM	Q & A session and Vote of Thanks	Dr. P.V. Yadav
1.30 – 2.30 PM	**Lunch Break**	
2.30 – 4.00 PM	Paper Presentation Sessions	Presentation Team
	Summary of Presentation	Dr. D. P. More
	Vote of Thanks	Prof. P.D. Hanchate
Valedictory Session		
4.00 – 4.02 PM	Welcome Note	Anchoring Team
4:02-04:07PM	Conference Summary	Dr. T. V. Chavan, Convener
4.07 – 4.17PM	Chief Guest Address	Dr. Rupendra Gaikwad Principal, Ramsheth Thakur College of Commerce and Science, Kharghar, Navi Mumbai.
4.17 – 4.25PM	Oral Feedback	Dr. P.V. Yadav
4.25 – 4.30 PM	Announcement of 12th National Conference & Vote of Thanks	Dr. P.V. Yadav

Dr. S. S. Badave	Dr. T.V. Chavan	Dr. M. A. Lahori
Co convener	**Convener**	**Director**

Keynote Address by the Chief Guest
Dr. Chandrashekhar V. Murumkar

The speaker congratulated AIMS, Baramati for choosing a very contemporary issue for their 11th National Conference. The session was focused on three scenarios i.e., Students, Teachers and HEIs. Further, he highlighted the global challenges confronting quality in HEIs such as Enrolment, Equity, Quality, Infrastructure, Political interference, etc. Likewise, he articulated his concerns on Faculty members, Research & Innovation, Structure of higher education, and quality sustenance issues.

Dr. C.V. Murumkar, Principal, T.C. College, Baramati, Pune

Our distinguished speaker touched upon need of redesigning curricula of various programs offered presently by the Universities and emphasized on the importance of self-learning. He pointed out that true learning happens when the students attain emotional, intellectual, and social awareness. Besides, he added the necessity to make students technology-enabled and able to make newer learning platforms.

Further, Prin. Dr. C. V. Murumkar cited examples of Europe and Japan where students from diverse backgrounds are exposed to the learning from their history, economics and culture thereby leading to enrichment of the pedagogy and 360º action plan. Present education system, he said, must be relieved from exam focused pedagogy and needs newer paradigms for teaching quality must be explored so that student-teacher must achieve global standards.

He asked the HEIs to evolve systems to assess impacts of the ongoing structural changes. During his speech, our Chief Guest invoked Swamy Vivekanand and (Late) Dr. A.P.J Kalam, the former President of India, who, as he pointed, separated with a time gap of 150 years, propagated the need of youth transformation for nation-building.

Re-emphasizing the significance of youth power, he enlisted virtues of young Indians as enthusiasm, high IQ, workaholic, tech-friendly and youthful. In line with this, he narrated upon the objectives, functions, projected outcomes vis-à-vis the present status. He exhorted the HEIs to introduce qualities such as professionalism, time management, relationship management, problem solving, resilience, integrity. He further highlighted the major quality concerns of higher education as competition, customer satisfaction, standards, accountability, employee morale, credible image and visibility.

In the keynote address, the Chief Guest also discussed at length, the seven criteria of NAAC to adjudge quality of higher education and it's impact in their transformation. He endorsed the present process as bringing up management of quality at HEIs, polishing various attributes driving their reputation, and guiding them master quality focused at benchmarks.

The keynote address concluded by the speaker asking the HEIs to define success for themselves, and consistently carryout academic audit. He quoted Elizabeth Warren making a point that good education can only create a better future for all.

1st Plenary Session (Day 1) by Dr. P. Vikraman

The first pleanary session was on the theme "Modern Teaching Methods in management". The distinguished speaker emphatically started with a statement that there is no permanent definition to Management. He said the focus management education broadly is to be problem solving. He drew a clear distinction between the conventional and the modern approach of teaching. The conventional approach made a teacher to assume role of a ladder, in which case he/she focused on gradual improvement is the wards qualitiatively. Whereas the modern approach demanded a teacher to be a lift (or an elevator) so that dramatic and radical changes can be brought about in the students.

Dr. P. Vikraman
Associate Professor,
SOM, Anna University,
Coimbatore, TN

The teaching pedagogy, he said, is slowly coming to terms due to the changes happening with the teaching tools as well and said that E Learning / e teaching have become order of the day. Adding the importance of PCs, Laptops, Internet, Smartphones and various applications therein, he elaborated upon the significance of the roles of teachers and peer groups.

While addressing the increased importance of Technology throughout his speech, he enlisted heterogeneous personalities that a teacher must deal with, making the task of teaching interesting at the same time increasing the complexities of teaching profession. He said that the single most complexity of teaching profession being the necessity to deal with the diverse human being in a classroom setting, whereas most of the other professions will be dealing with machines in a manufacturing setting. He emphasized on the continued importance of case studies in the pedagogy and asked to focus on problem solving and matching the theory with practice.

Adding his insights on the relevant tools to adopt in the contemporary management teaching. He claimed that the ideas are pervasive and need to be seriously explored all across the organization. Therefore, brainstorming is an effective tool that must be integral to our teaching pedagogy. Continuing hi discourse on the imperatives of the management teaching, he emphasized the dual and simultaneous importance of planning and implementation.

The session was concluded by the speaker by highlighting multiple roles a teacher must play viz., father, spouse, citizen, facilitator, and a moderator in society. He said that words are the most powerful weapon that a teacher wields and therefore, they be used with utmost restraint and caution. Thus the session was concluded.

2nd Plenary Session (Day 1) by Dr. Indrajit Yadav

The second plenary session was on the theme "Outcome Based Education (OBE) Implementation and Latest Trends.

The speaker addressed the emerging trends of Indian education at HEIs to adopt OBE. He elaborated on contemporary issues in higher education concerning Accountability, Industry needs, Academic standard, Grants to HEIs and Accreditation. He further touched upon the burning issues

Dr. Indrajit Nivasrao Yadav-Patil Principal, SMSMP Inst. of Technology and Research, Akluj

of student intake, staff qualification, teaching process, assessment, courses, and facilities.

The speaker dwelt upon the process of Continuous Quality Improvement, highlighting on inputs from HEI's alumni, mission, vision, stakeholders, and advisory committee. He pointed towards the Program Objectives (POs), Program Outcomes and Course Outcomes (Cos) consequent to analysis. He further added that the OBE framework on the premises of Plan, Do, Check and Act focusses on improvement and assessment. He illustrated how the teaching-learning process involves in course objectives, pedagogy, learning process and assessment.

The speaker later laid down the Smart Goals for HEIs viz., Specific, Measurable, Achievable, Realistic, and Time-bound. He advised to start with some kind of goal and eventually evolve the same in to a SMART Goal. He illustrated the concept with an example of generating MoUs.

The session was insightful on the requisites of OBE pyramid such as 5Ps: Paradigm, Purposes, Premises, Principles, and Practices. Further, elaborated on the 3 Ts of OBE paradigmatic dimensions viz., Traditional, Transitional and Transformational. He effectively demonstrated with the help of fishbone models the modalities of delivering quality at industry and education verticals.

The session concluded with a *modus operandi* of rubrics implementation and OBE transformational wheel. The speaker touched upon the minute details achieving OBE such as seating arrangement, assessment, data, feedback, display tools, resources, task assigning, questioning, self-regulated learning and so on. This, the session left the audience with enormous clarity on setting OBE goals, working on them and achieving the desired outcomes at HEIs.

3rd Plenary Session (Day 2) by Dr. Julie Dominic A

The 3rd plenary session to start the day 2 of the National Conference was on the theme "Innovations in Academics, Administration, and Governance for quality sustenance in higher Education. She referred to the flourishing educational and scholastic prospects on account of the global level changes. She mentioned the NAAC vision of promoting quality. Further, the session focused on functions of NAAC on the premises of quality enrichment and maintenance *via* System Assessment and Accreditation.

Dr. Julie Dominic A
Little Flower College
Guruvayoor, P O
Puthanpalli - 680 103
Kerala, India

The session further touched upon the various objectives of NAAC in terms of HEIs self-introspection and inculcating quality consciousness through tracking academic progress and employability of the students of HEIs, their commitment towards skill development and technology progression, promotion of human values, analytical approach towards students, evolving academic systems, infrastructural development and so on.

Further, the speaker established how academic quality enhancement is achieved by harnessing important stakeholders such as students, teachers, staff, alumni, employers, etc., with curriculum, academic processes, research-innovation, infrastructure, governance, best practices, and the uniqueness of respective HEIs. Speaking on academic quality initiatives, the speaker pointed out newly added programs, add on courses, certificate courses, etc. Further referring to distance learning programs. She emphasized on need of student-oriented curriculum. The speaker stressed on the need of *de-elitizing* the ICT in curriculum, hinting at student centricity leading development of intrinsic capabilities of the students.

The speaker discussed at length about the importance of research endeavors including publications at par with the international standards. She underscored the emerging need of building ecosystem for startups and innovation through incubation. Achieving the academic goals by setting necessary digital infrastructure, evolving administrative and governance and coalesce with the relevant stakeholders in this were briefly discussed during the session.

The session was concluded by referring to National Education Policy seeking radical changes in higher education, and several initiatives taken up by the Govt. of Kerala in attaining highest level quality at HEIs. The speaker aptly ended her session by saying *"we are what we repeatedly do. Excellence is then not an act but a habit"* that put in a nutshell the structural, cultural, and attitudinal change that can only bring excellence in higher education.

4th Plenary Session (Day 2) by Dr. Pawan Patel

On the Day-2, the second plenary session was delivered on the theme "NEP in Higher Education Institutions" by Dr. Pawan Patel. He tried to relate the aspirations of (New) National Education Policy with the present status and prospects of the Indian economy.

Throughout his session, he pointed out how best, India can leverage her advantages to achieve the top position of global economy in the coming years.

At the outset he set a backdrop of the history of global economy illustrations on oldest business

Dr. Pawan Patel
Professor,
Chairman T&C
Shiva Shivani Institute of
Management, Hyderabad

establishments and a series of periodic events of global importance. Further, he connected them with India's re-emergence as a global power.

Later, he covered various facets of National Education Policy by highlighting the five pillars viz., Affordability, Accountability, Quality, Equity, and Accountability. Reflecting on the purpose of NEP, he said, the present policy would ensure new skills and upgradations in HEIs to suit the contemporary needs. The session threw light on the NEP goals such as increasing GER, inculcating spirit of truth and promote economic growth.

His session elaborated the HEI strategy to stay relevant. He emphasized the need to change the Inside-Out approach into Outside-In approach. Speaking on the imperatives of the NEP and role of HEIs, he focused on the role of MSMEs in shaping up India to be a US$5 Trillion. He hailed MSMEs as the one contributing in terms of value-added activities, innovation and inclusive growth to an economy. He added that MSMEs have driven special attention from policy makers as they influence our exports. He enlisted specific sectors such as mobile phones, electronic components, medical devices, automotives, pharmaceuticals, special purpose steel, telecom software/hardware, solar equipment, semi-conductors etc., as the thrust areas in this direction. Referring to the Mercers 2021-22, & 2025 a global Recruitment and HR trends, the speaker drew contrasting skill needs from employees and employers' perspective. He weighed in the skillsets such as innovation and design thinking shall sustain whereas many contemporary interpersonal skills shall pave way to modern skills like design visualization and entrepreneurship will gain importance.

The session concluded by visualizing the next 10 years journey of jobs and skills, articulating some of new age job profiles. Thus, the session effectively linked the timely introduction of NEP to generate futuristic manpower.

5th Plenary Session (Day 2) by Dr. Pawan Patel

The 5th and last plenary session was delivered on the theme "NAAC: RAF 2022 – Opportunities". The speaker clearly articulated the objectives of NAAC viz., Quality Establishment for Cycle1, Quality Sustenance for Cycle2, Quality Enhancement for Cycle 3 and Quality Enrichment for Cycle 4.

Dr. Rupendra Gaikwad
Principal,
Ramsheth Thakur College
of Commerce and Science,
Kharghar, Navi Mumbai

The session reiterated the core values of NAAC that are National Development, Global Competencies, Value Systems, Use of Technology, and Excellence. The session effectively generated a *birds eye-view* on the NAAC SSR preparation. He elaborated on KIs, qualitative/quantitative metrices, illustrating distribution of the same in affiliated colleges.

The session minutely dealt with the procedural details of IIQA, Self-Study Report, Data Verification and Validation, Student Satisfaction Survey and eventually the Peer Team Visit with time frames. Further, in line with the Revised Accreditation Process (RAF 2022), he dwelt on various sections of the SSR. He advised the audience on subtle details to be considered while furnishing information on Extended Profile of the HEI.

The speaker illustrated avidly on various opportunities that an HEI may grab on account of the RAF 2022. He said, the HEIs have a greater chance to carryout an extensive SWOC analysis and accordingly prepare short term/ long term action plans to establish, enhance, enrich and excel in quality goals. He further added that the institutions when initiate the accreditation process, naturally bring a lot of change in the mind set of the people: the management, staff, students, and alumni alike. As he was explaining the changes that NAAC is bringing in the HEIs, several research opportunities are coming on the way for the teaching staff in terms minor/major research grants, UGC, AICTIE grants, and even the funds mobilized through the management, etc., so that the faculty and students can actively involve in serious research activities that create a win-win situation to the institution and society at large.

In the concluding remarks, our speaker highlighted the fact that NAAC accreditation process has brought remarkable discipline among the HEIs in terms of processes, pedagogy, and overall working of the people. The speaker took several questions from the audience regarding HEIs priorities, practices, and procedures while gearing up for NAAC accreditation at various cycles.

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National Conference on
"Innovative Practices for Quality Enhancement in Higher Education Institutions"

<u>Summary of the Paper Presentations</u>

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We processed 40 research papers on the basis of research quality and relevance of the topics for publication in the proceeding of the conference. However, due to time constraints, we could only arrange paper presentations of 12 researchers.

Following are the brief details of the papers presented on day 1 (7th October 2022):
1. "Overview on Role of Industry Incubation in Engineering Institutional Development" by Mr. Shete Yogesh Shreekrushna.
2. "Best Practices in Schools" by Dr Iltiza Begum
3. "Blended Learning Environment Among MBA Students In B School" by Prof.Niranchana Shri Viswanathan.
4. "Digitalization of Financial Product of Services: A Research & Study on Tracking and Evaluating the Synchronization of 'Digitalized Literacy" by Prof. Dr. Sanket L. Charkha et al.
5. "A Study of Quality Enhancement Practices and challenges of Indian Educational Institutes" by Dr. Archana Wafgaonkar
6. "Guaranteeing Access to Knowledge: The Role of the Libraries in the Information Technology Era." by Ms. Rajashri Wayal
7. "Exploratory Study on Service Quality of Private Tour Operators among the Tourists in Udhagamandalam District" by Ms. R. Shanthi
8. "Ethics in Higher Education: Comparison Between Personal Ethics and Professional Ethics" by Ms. Nancy.

On the day 2 (8th October 2022) following papers were presented:
1. Efficacy of Academic and Administrative Audit as a tool of Evaluation and Improvement by Dr Seemantini Chaphalkar
2. Teaching Learning of Mathematics in Competence-Based Education by Mr.Sajuddin Saifi
3. Impact of Industry Academia Interaction On Institutional Development by Prof. Rekha Naidu
4. A Survey on The Students' Satisfaction Towards Effectiveness of Online Tutoring With Special Reference To Higher Education Aspirants Of Coimbatore City – Tamil Nadu by Prof. B. Priyanka.

Thus, the conference could mobilize diverse points of contentions on the matter of quality in higher education specifically and enhancing the same in general. There was Q&A after each presentation leading to deliberations benefitting the paper presenters as well as the audience.

An Examination of the Vedic Mathematics Multiplication Principle and Its Application in Improving Computational Speed For Security And Privacy in Data Networks

Dr. Abhishek Dikshit

Associate Professor

AIMS Baramati

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ABSTRACT

The standard techniques for providing privacy and security in data networks include encryption/decryption algorithms such Advanced Encryption System (AES) (private-key) and RSA (public-key). RSA is one of the safest standard algorithms, based on public-key, for providing security in networks. Even though the RSA Algorithm is an old and simple encryption technique, there is a scope to improve its performance. This paper proposes the implementation of RSA encryption algorithm using the sutras or principles of ancient Indian Vedic mathematics that have been modified the algorithm to improve performance. It is observed that, RSA algorithm is difficult to implement with high speed because one of the most time consuming processes in RSA encryption/ decryption algorithm is the computation of ab mod n where "a" is the text, (b, n) is the key. Generally the prime number used for RSA Encryption system will around 100 to 150 decimal digits. The computations involved are tedious and time consuming. Also the hardware is quite complex. To increase the computation speed, the multiplication principle of Vedic mathematics is used in this paper. "Urdhva-tiryakbhyam" is the sutra (principle) which used to compute the multiplication. It literally means vertical and crosswise manipulation. The significance of this technique is that it computes the partial products in one step and avoids the shifting operation which saves both time and hardware. The VHDL code is simulated and synthesized on ModelSim SE 6.3f and Altera Quartus II 9.1 tools respectively.

Keywords:-Vedic Mathematics, RSA Algorithm, Decryption, Encryption, Key, Cipher Text.

1. INTRODUCTION

Cryptography is the study of methods for sending messages in secret (namely, in enciphered or disguised form) so that only the intended recipient can remove the disguise and read the message (or decipher it, thereby providing confidentiality). It is the art of using mathematics to address the issue of information security. Cryptography has, as its etymology kryptos from the Greek, meaning hidden, and graphy, meaning to write. The original message is called the 'Plaintext' and the disguised message is called the 'Cipher text'. The final message, encapsulated and sent, is called a 'Cryptogram'. The process of transforming plaintext into cipher text is called 'Encryption' or 'Enciphering'. The reverse process of turning cipher text into plaintext, which is accomplished by the recipient who has the knowledge to remove the disguise, is called 'Decryption' or 'Deciphering'.

Two types of cryptography are private/secret/single key cryptography & Public key cryptography.RSA is public key algorithm.
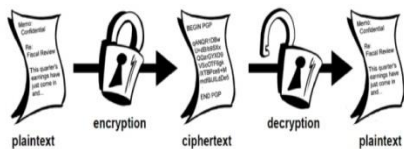
Fig1: Encryption and decryption

The RSA Algorithm is the most popular and proven asymmetric key cryptographic algorithm. In 1977, Ron Rivest, Adi Shamir and Len Adleman at MIT developed the first major asymmetric key cryptography system. Hence it is called as RSA Algorithm Nowadays, more and more reconfigurable hardware devices are used in network applications due to their low cost, high performance and flexibility. Such applications include extensible network routers, firewalls and Internet-enable sensors, etc. These reconfigurable hardware devices are usually distributed in a large geographic area and operated over public networks, making on-site configuration inconvenient or infeasible. Therefore, robust security mechanisms for remote control and configuration are highly needed. The RSA algorithm is a secure, high quality, public key algorithm. It can be used in these applications as a method of exchanging secret information such as keys and producing digital signatures. However, the RSA algorithm is very computationally intensive, operating on very large (typically thousands of bits long) integers. The RSA algorithm has been adopted by many commercial software products and is built into current operating systems by Microsoft, Apple, Sun, and Novell. Commercial Application Specific Standard

Products (ASSPs) like the security processors offered by several vendors have a much higher RSA performance than software implementation. However, their solution is inflexible and expensive. With the exponential increase in FPGA size over time, it is possible to implement a relatively high performance, user parameterizable RSA at low cost on FPGA. Vedic mathematics - a gift given to this world by the ancient sages of India. A system which is far simpler and more enjoyable than modern mathematics. The simplicity of Vedic Mathematics means that calculations can be carried out mentally though the methods can also be written down. There are many advantages in using a flexible, mental system. Pupils can invent their own methods; they are not limited to one method. This leads to more creative, interested and intelligent pupils. Vedic Mathematics refers to the technique of Calculations based on a set of 16 Sutras, or aphorisms, as algorithms and their upa-sutras or corollaries derived from these Sutras. Any mathematical problems (algebra, arithmetic, geometry or trigonometry) can be solved mentally with these sutras. Vedic Mathematics is more coherent than modern mathematics. Vedic Mathematics offers a fresh and highly efficient approach to mathematics covering a wide range - starts with elementary multiplication and concludes with a relatively advanced topic, the solution of nonlinear partial differential equations. But the Vedic scheme is not simply a collection of rapid methods; it is a system, a unified approach. Vedic Mathematics extensively exploits the properties of numbers in every practical application Further, when the integrated circuit is a field programmable gate array (FPGA), large amounts of valuable programming resources are required to implement digital division, thus limiting the size or precision of the data words that can be accommodated. In addition, the numerous data paths required to connect the related logic circuitry within a FPGA result in slow performance and in some cases may cause it to malfunction.

2. LITERATURE REVIEW

The paper published by Jainath Nasreen.P and Emy Ramola.P [1], used VHDL to implement a 16- bit RSA block cipher system. The whole implementation includes three parts: key generation, encryption and decryption process. The key generation stage aims to generate a pair of public key and private key, and then the private key will be distributed to receiver according to certain key distribution schemes. The memory usage and overhead associated with the key generation is eliminated by the proposed system model. The cipher text can be decrypted at receiver side by RSA secret key. They have been concluded that the proposed architecture yields

better results than the existing one in all the parameters considered. The analysis results were obtained using Design Vision tool of Synopsis. The architecture generates all the possible random numbers for the given 16 bit input and stores it in a memory. Prime numbers from the generated random numbers were identified and again stored in a FIFO memory. The first two prime numbers stored in the FIFO is selected for encryption. But the proposed architecture eliminates the need for memories by checking for primarily and selects two prime numbers simultaneously while the random numbers were being generated. Also the generation stops as soon as the system detects two prime numbers.

Modular Multiplication and Exponentiation Architectures for Fast RSA Cryptosystem, Based on Digit Serial Computation ,the paper published by Gustavo D. Sutter, Jean-Pierre Deschamps, and José Luis Imaña[2], in their paper, they optimized the Montgomery's multiplication and proposed architectures to perform the least significant bit first and the most significant bit first algorithms. The developed architecture has the following distinctive characteristics: 1) use of digit serial approach for Montgomery multiplication. 2) Conversion of the CSA representation of intermediate multiplication using carry–skip addition. This allowed the critical path to be reduced, albeit with a small-area speed penalty; and 3) precompute the quotient value in Montgomery's iteration in order to speed up the operating frequency. And they concluded that, CSA was used to perform large word-length additions in conjunction with quotient precomputation and digit serial computation. Another characteristic of the proposed architecture was the use of binary representation for intermediate exponentiation results and the use of efficient carry–skip addition at the end of a Montgomery's multiplication. For fair comparison, the circuits were implemented in Virtex 2 and Virtex 5 FPGA devices and in a 0.18-µm ASIC technologies, presenting in all technologies the best results. A technological observation is that the Xilinx Virtex 5 implementation (65 nm) achieves throughput similar to a 0.18-µm ASIC technology and almost doubles the data rate of a Virtex 2 technologies (0.15 µm). The paper published by Himanshu Thapliyal and M.B Srinivas [4] , proposed the hardware implementation of RSA encryption/decryption algorithm using the algorithms of Ancient Indian Vedic Mathematics that have been modified to improve performance. The recently proposed hierarchical overlay multiplier architecture is used in the RSA circuitry for multiplication operation. Due to its parallel and regular structure the proposed architecture can be easily laid out on silicon chip and can work at high speed without increasing the clock frequency. It has the advantage that as the number of bits increases its gate delay and area increase very slowly as compared to RSA circuitry employing traditional multipliers and division algorithm. The paper

proposed by K.Z. Pekmestzi, N.K. Moshopoulos [5], in their paper a new implementation of a Montgomery multiplier is presented, which is based on the direct approach achieving higher performance than any other realization. The circuit is modified in an elegant way in order to implement both the modular multiplication and squaring in a bit interleaved form. The modular exponentiation requires approximately 2n2 clock cycles with the minimum hardware complexity, reported so far. The proposed design is approximately 2 and 3 times more efficient than respectively. Compared to their circuit's performance is about 20% higher. This is due to the direct implementation of the Montgomery algorithm, which yields a decrease of the circuit's complexity, equal to 19 gates per bit. A hardware version of the RSA using the Montgomery's algorithm with systolic arrays has been proposed by Ali Ziya Alkar, Remziye Sonmez [7], where they use systolic arrays, to speed up the modular multiplication and squaring, bit level systolic arrays are used with the Montgomery's modular multiplication algorithm to constitute the core of modular exponentiation operation. The squaring systolic structure is also performed in parallel with the systolic multiplication in the modular exponentiation. The novel idea in their paper was to use the systolic array cells with increased performance of up to 20% and use them in a single row organization. The final RSA design is configurable and can operate both for encryption and decryption. The results are obtained at the high-level synthesis stage and show the highest possible clock rate that can be achieved.

3. SYSTEM ARCHITECTURE

A) RSA ALGORITHM

The RSA algorithm is a secure, high quality, public key algorithm. Fig shows steps involved in key generation, encryption & decryption of system. RSA encryption and decryption are mutual inverses and commutative due to symmetry in modular arithmetic. The process of transforming plaintext into cipher text is called 'Encryption' or 'Enciphering'. The reverse process of turning cipher text into plaintext, which is accomplished by the recipient who has the knowledge to remove the disguise, is called 'Decryption' or 'Deciphering'. RSA algorithm can generally be further classified into key generation algorithm, encryption algorithm, and decryption algorithm. The RSA key generation algorithm and RSA encryption algorithm and decryption algorithm can be described in the following steps,
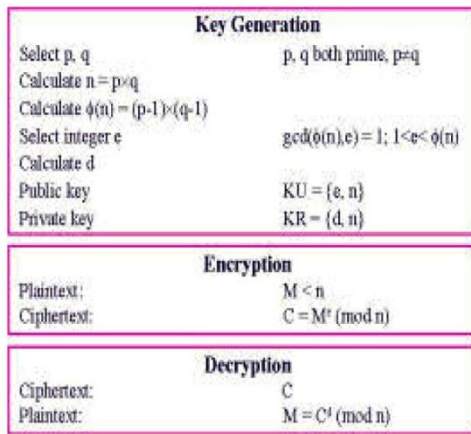
Fig.2: Key Generation encryption and decryption steps of RSA Algorithm
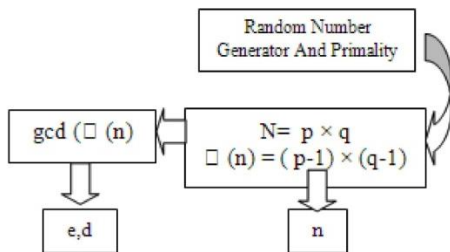
Fig.3: Proposed system achitecture for RSA key generation

The system architecture for key generation is shown in Fig 3. A random number generator generates 16-bit pseudo random numbers and the primality tester takes a random number as input and tests if it is a prime ConfIrmed primes component pulls out two primes, and calculates n and ϕ(n) . N is stored in a register . ϕ (n) is sent to the Greatest Common Divider (GCD), where public exponent e is selected such that gcd [(n), e] = I, and private exponent d is obtained by inverting e modulo I (n) . E and d are also stored in registers. Once n,d, and e are generated, RSA encryption/decryption s simply a modular exponentiation operation.

And the flow chart for the overall RSA algorithm is as shown below in figure 4,
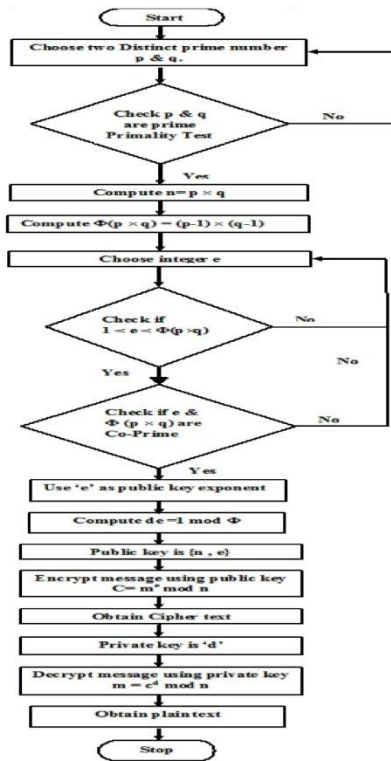
Fig.4: Flow chart of RSA Algorithm

B) VEDIC MATHEMATICS

The basic sutras and upa sutras in the Vedic Mathematics helps to do almost all the numeric computations in easy and fast manner. Vedic mathematics is mainly based on 16 Sutras (or aphorisms) dealing with various branches of mathematics like arithmetic, algebra, geometry etc. The multiplier is based on an algorithm Urdhva Tiryakbhyam (Vertical & Crosswise) of ancient Indian Vedic Mathematics. Urdhva Tiryakbhyam Sutra is a general multiplication formula applicable to all cases of multiplication. It literally means "Vertically and crosswise". It is based on a novel concept through which the generation of all partial products can be done with the concurrent addition of these partial products. Vedic multiplier is faster than array multiplier and Booth multiplier. As the number of bits increases from 8x8 bits to 16x16 bits, the timing delay is greatly reduced for Vedic multiplier as compared to other multipliers. Vedic multiplier has the greatest advantage as compared to other multipliers over gate delays and regularity of structures.

The sutra which we employ in this project is Urdhva Triyagbhyam (Multiplication). The Multiplier Architecture is based on the Vertical and Crosswise algorithm. The architecture is illustrated with two 4-bit numbers; the multiplier and multiplicand, each are grouped as 4-bit numbers so that it decomposes into 4x4 multiplication modules. After decomposition, vertical and crosswise algorithm is applied to carry out the multiplication on first 4x4 multiply modules.

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The results of first 4x4 multiplication module are utilized after getting the partial product bits parallel from the subsequent module to generate the final 16-bit product. Hence any complex NxN multiplication can be efficiently implemented by using small 4x4 multiplier using the proposed architecture where N is a multiple of 4 such as 8 , 16, ...2N. Therefore efficient multiplication algorithm implementation with small numbers such as 4-bits can be easily extended and embedded for implementing efficient NxN multiply operation. The proposed method of Urdhva Triyagbhyam can be implemented for binary system in the same way as decimal system.
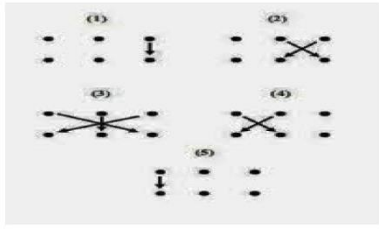
Fig.5: Multiplication steps using Urdhva Tiryakbhyam

The multiplication has been done in a single line in Urdhva method, whereas in shift and add method (Conventional) partial products have to be added to get the result. This implies the increase in speed. Urdhva Tiryakbhyam (Vertically and Crosswise), deals with the multiplication of numbers.
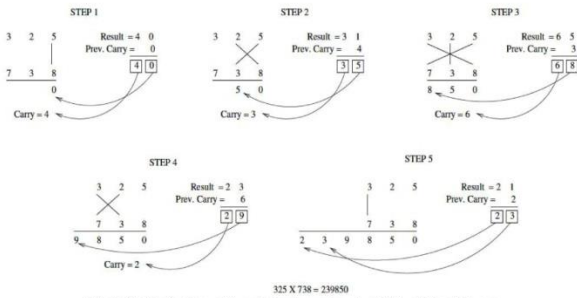
Fig.6: Multiplication of two decimal numbers by Urdhva Tiryakbhyam

This Sutra has been traditionally used for the multiplication of two numbers in the decimal number system. In this paper, we apply the same idea to the binary number system to make it compatible with the digital hardware. Let us first illustrate this Sutra with the help of an example in which two decimal numbers are multiplied. Line diagram for the multiplication of two numbers (325x728) is shown in Fig.6. The digits on the two ends of the line are multiplied and the result is added with the previous carry. When there are more lines in one step, all the results are added to the previous carry. The least significant digit of the number thus obtained acts as one of the result digits and the rest act as the carry for the next step. Initially the carry is taken to be zero.
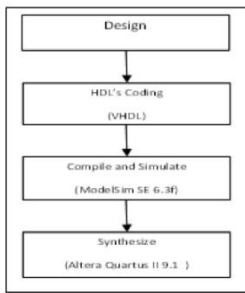
Fig.7: Design Flow

As shown in the project design flow, firstly design the project with the appropriate information. Then the next step will be of VHDL coding. After HDL designing, the code will simulate and its functionality will verified using simulation software on ModelSim SE 6.3f simulator. ModelSim is a verification and simulation tool for VHDL, Verilog, SystemVerilog, and mixed language designs. The code is simulated and the output is tested for the various inputs. If the output values are consistent with the expected values then we proceed further else necessary corrections are made in the code. Simulation is a continuous process. Small sections of the design should be simulated and verified for functionality before assembling them into a large design. After several iterations of design and simulation the correct functionality is achieved. Once the design and simulation is done then another design review by some other people is done so that nothing is missed and no improper assumption made as far as the output functionality is concerned. And finally we will synthesize and analyze the VHDL design on Altera Quartus II 9.1. The Altera Quartus II design software provides a complete design environment that easily adapts to your specific design requirements.

4. PROPOSED WORK

A prime feature of Rijndael is its ability to operate on varying sizes of keys and data blocks. It provides extra flexibility in that both the key size and the block size may be 128, 192, or 256 bits. Since Rijndael specifies three key sizes, this means that there are approximately 3.4 x 1038 possible 128-bit keys, 6.2 x 1057 possible 192-bit keys and 1.1 x 1077 possible 256-bit keys The Sub key and the Key Schedule The sub keys are derived from the cipher key using the Rijndael key schedule. The cipher key is expanded to create an expanded key and the sub key is created by deriving a 'round key' by round key. The required round key length is equal to the data block length multiplied by the number of rounds plus 1. Therefore, the round keys are taken from the expanded key. To maintain a secure system, the expanded key is always derived from the

cipher key. This method ensures that the expanded key is never directly specified, which would open Rijndael up to several cryptanalytic attacks against its key generation methods. Recall that the security of this system depends entirely on the secrecy of the key, as the design of the algorithm itself is public and contains no secrecy. Whole Byte operations There are several mathematical preliminaries that define the addition and multiplication operations within a finite field and with matrices. When performing finite mathematics, the bytes are treated as polynomials rather than numbers, which can allow different and occasionally allows for more simple implementations

5. CONCLUSION

The RSA algorithm is important to network security because they are the components (i.e. encryption and decryption key) which interact with the security system, without them the system will be useless as RSA are used to fire a particular encryption and decryption keys process because of which security system is build. The RSA algorithm has the same importance as of the system in the cryptography over network security. Since RSA are used to provide the authentication and privacy to whole system. The main advantage of RSA algorithm is enhanced security and convenience. Using public key encryption is also an advantage of this algorithm. Only the RSA lacks in encryption speed because of its mathematical calculation and to prevent this, the multiplier based on Vedic mathematics is used which is one of the fast and low power multiplier. Employing this technique in the algorithm which reduces the complexity, execution time, power etc. Urdhva tiryakbhyam sutra is the most efficient sutra, giving minimum delay for multiplication of all types of numbers, either small or large and it eliminates unwanted multiplication steps as compared to conventional multiplication. So the RSA algorithm is implemented using the high speed multiplier sutras exhibits improved efficiency in terms of speed. And in this paper the RSA algorithm using Vedic mathematics will be prototype using VHDL and its analysis will be base on the FPGA

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An Investigation Into The Convergence Of Decision Sciences, Database Management, And Knowledge Technology To Assist Managers In Making Informed And Accurate Decisions

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ABSTRACT

Over the recent years, a great interest has appeared in studying "knowledge warehouse (KW), decision support system (DSS), data mining (DM), and knowledge discovery process in database (KDD)", taking into consideration that each of these fields is related to and influenced by the others. In order to manage enterprise resources, there is a necessary need to build a DSS which helps the manager or the decision maker in the decision making and managing processes. While the primary goal of a (KW) is to provide the decision-maker with an intelligent analysis platform that enhances all phases of the knowledge management process , the (KDD) process should be applied to discover knowledge and build (KW) , where (DM) technique is considered the most important step in the process (KDD).So in this paper , the researcher merged the concepts of data warehouse (DW) and knowledge warehouse (KW) proposing and building a system of kind (knowledge-driven DSS) which depends on KW for managing (storing and retrieving) the knowledge for improving the process of decision making and management of the market resources (items), where this study includes an application on a DW of marketing building resources (items).This study uses the data mining technique specifically its functionality (Association Rules Mining) in the knowledge discovery process and building KW. Eventually, the designed system was constructed and executed by using (C# version 2008) which is a visual and object oriented programming language. Good system results (knowledge) were obtained in a very little time taking two minutes approximately. This proves the efficiency of the proposed algorithms and our knowledge-driven DSS system in the supporting the market manager or decision maker to take accurate and right decisions for managing the market items in a perfect way.

Keywords: Decision Support System, Data Mining, Knowledge Discovery, Knowledge Warehouse, Data Warehouse.

1. INTRODUCTION

Decision Support Systems (DSS) increasingly become more critical to the daily operation of organizations [1]. Decision Support System (DSS) is an equivalent synonym as management information systems (MIS). Most of imported data are used in solutions like data mining (DM). Successfully supporting managerial decision-making is critically dependent upon the availability of integrated, high quality information organized and presented in a timely and easily understood manner [2]. Since the mid-1980s, data warehouses have been developed and deployed as an integral part of a modern decision support environment [1]. Therefore Data Warehouse provides an infrastructure that enables businesses to extract, cleanse, and store vast amounts of corporate data from operational systems for efficient and accurate responses to user queries [3]. Data Warehouse (DW) is one of the solutions for decision-making process in a business organization. But it only stores data for managerial purpose and it has no intelligent mechanism for decision making. This raises the issue of knowledge storage in organization for high capability decision support [4]. Knowledge in the form of procedures, best practices, business rules, expert knowledge, facts within a context and processed data can be stored in logical structures accessible by computers. The logical structures in the knowledge warehouse to store knowledge are analogous to the system of tables that implement data storage in the data warehouse. Knowledge is applied through a layered representation that is readable by both humans and machines this representation is also a system executable that is portable and can be run on a computer to help make decisions and take actions [5]. The enterprise-wide information delivery systems provided in a data warehouse can be leveraged and extended to create a knowledge warehouse (KW). A framework of knowledge warehouse is introduced, which is enhanced form of data warehouse to provide a platform/infrastructure to capture, refine and store consistent and adequate knowledge along with data to improve decision making in an organization [4]. The primary goal of a (KW) is to provide the decision-maker with an intelligent analysis platform that enhances all phases of the knowledge management process. Knowledge Warehouse (KW) architecture will not only facilitate the capturing and coding of knowledge but also enhance the retrieval and sharing of knowledge across the organization [3]. In order to understand, analyze, and eventually make use of a huge amount of data, Enterprises use mining technologies to search vast amounts of data for vital insight and knowledge. Mining tools such as data

mining, text mining, and web mining are used to find hidden knowledge in large databases or the Internet [6]. Data Mining (DM) is the process of identifying interesting patterns from large databases. Data mining has been popularly treated as a synonym of knowledge discovery in databases, although some researchers view data mining as an essential step of knowledge discovery [7]. In this paper , mining tools are automate software tools used to achieve decision making process by finding hidden relations (rules), and predicting future events from vast amounts of data.

2- THE KNOWLEDGE-DRIVEN DSS

A knowledge-driven DSS provides specialized problem solving expertise stored as facts, rules, procedures, or in similar structures and it suggests or recommends actions to managers [8]. A KD-DSS is a knowledge driven decision support system, which has problem solving expertise. The KD-DSS can give suggestions or recommendations based on several criteria's. These systems require human-computer interaction. Advanced analytical tools like data mining can be integrated with the KD-DSS to find hidden patterns. Knowledge Driven DSS is also called as Intelligent Decision Support methods, and it is analogues to the knowledge warehouse strategy work. We choose KD-DSS model, because it has capacity to self-learn, identify associations between the data, and perform heuristic operations, if required. These abilities turn the DSS system into intelligent, increase the capacity of problem solving and improve suggestion accuracy. It is important to mention that the Knowledge representation play key role in KD-DSS. Well-defined knowledge representations include rule-based systems, semantic web and frame systems. A rule-based system contains rules in the database [9].

3- KNOWLEDGE WAREHOUSE

Knowledge warehouse (KW) can be thought of as an "information repository". The knowledge warehouse consists of knowledge components (KCs) that are defined as the smallest level in which knowledge can be decomposed. Knowledge components (objects) are cataloged and stored in the knowledge warehouse for reuse by reporting, documentation, execution the knowledge or query and reassembling which are accomplished and organized by instructional designers or technical writers. The idea of knowledge warehouse is similar to that of data warehouse. As in the data warehouse, the knowledge warehouse also provides answers for ad-hoc queries, and knowledge in the knowledge

warehouse can reside in several physical places [10]. A knowledge warehouse (KW) is the component of an enterprise's knowledge management system. The knowledge warehouse is the technology to organize and store knowledge. The knowledge warehouse also has logical structures like Computer programs and databases to store knowledge that are analogous to the system of tables that implement data storage in the data warehouse [5]. The primary goal of a KW is to provide the knowledge worker with an intelligent analysis platform that enhances all phases of the knowledge management process [3] [1]. Like the DW, the KW may be viewed as subject oriented, integrated, time-variant, and supportive of management's decision making processes. But unlike the DW, it is a combination of volatile and nonvolatile objects and components, and, of course, it stores not only data, but also information and knowledge [11]. The KW can also evolve over time by enhancing the knowledge it contains [3]. Knowledge warehouse provides the infrastructure needed to capture, cleanse, store, organize, leverage, and disseminate not only data and information but also knowledge [4].

4-KNOWLEDGE DISCOVERY PROCESS

Knowledge discovery in databases (KDD) is a rapidly growing field, whose development is driven by strong research interests as well as urgent practical, social, and economical needs. The term KDD is used to denote the overall process of turning low-level data into high-level knowledge. A simple definition of KDD is as follows: Knowledge discovery in databases is the nontrivial process of identifying valid, novel, potentially useful, and ultimately understandable patterns in data [12]. Knowledge Discovery has also been defined as the 'non-trivial extraction of implicit, previously unknown and potentially useful information from data'. It is a process of which data mining plays an important role to extract knowledge from huge database (data warehouse) [13]. Data mining is the core part of the knowledge discovery in database (KDD) process as shown in the figure 1 [13].
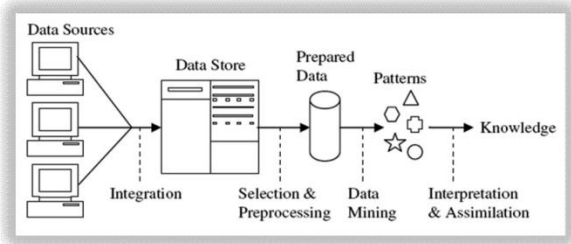
Figure 1 Typical Knowledge Discovery Process [13]

The KDD process may consist of the following steps: 1) data integration, 2) data selection and data pre-processing, 3) data mining as it will be explained in section 5; 4) interpretation & assimilation. Data

comes on; possibly from many sources therefore it is integrated and placed in some common data store like data warehouse. Part of it is then selected and pre-processed into a standard format. This 'prepared data' is then passed to a data mining algorithm which produces an output in the form of rules or some other kind of 'patterns'. These are then interpreted to give new and potentially useful knowledge. Although the data mining algorithms are central to knowledge discovery, they are not the whole story. The pre-processing of the data and the interpretation of the results are both of great importance [13].

5- DATA MINING TECHNIQUE

Data mining (DM) is one of the most important techniques that are used to discover required knowledge for intended enterprise. Data mining derives its name from the similarities between searching for valuable information in a large database and mining rocks for a vein of valuable ore. Since mining for gold in rocks is usually called "gold mining" and not "rock mining", thus by analogy, data mining should have been called "knowledge mining" instead [14]. Data mining
is the knowledge discovery process by analyzing the large volumes of data from various perspectives and summarizing it into useful information [15]. Data mining is the process of discovering interesting knowledge, such as patterns, associations, changes, anomalies, and significant structures from large amount of data stored in databases, data warehouse, or other information repositories [16]. Data mining refers to discover useful, previously unknown knowledge by analyzing large and complex" data sets. Data mining is defined as the extraction of patterns or models from observed data [12]. Data Mining, also popularly known as Knowledge Discovery in Databases (KDD), refers to the nontrivial extraction of implicit, previously unknown and potentially useful information from data in databases. While data mining and knowledge discovery in databases (or KDD) are frequently treated as synonyms, data mining is actually part of the knowledge discovery process [14]. The goal of data mining is to allow a corporation to improve its marketing, sales, and customer support operations through a better understanding of its customers. Data mining, transforms data into actionable results [17].Other similar terms referring to data mining are: data dredging, knowledge extraction and pattern discovery [14].

6- THE PROPOSED AND DESIGNED SYSTEM

In this paper, we proposed a knowledge-driven DSS and it consists of several phases as shown in the figure 2. These phases are:

1- Collect data from different sources, these sources can be different files such as (Excel, Access, Word, Text files, etc.)

2- Data pre-processing

This phase consists of the following three steps:

a- Data integration

b- Data reduction

c- Data consistency

3- Loading the cleaning data after performing preprocessing steps into the data warehouse (DW)

4- Data selection for knowledge discovery phase

5- Knowledge discovery by applying Data Mining and association rule mining task in particular.

6- Interpret the association rules to discover and gain knowledge as output.

7- Represent the result which is knowledge using one of the visualization tools

8- Make decisions by investment and benefit from the output (knowledge) of the system through the DSS system interface.
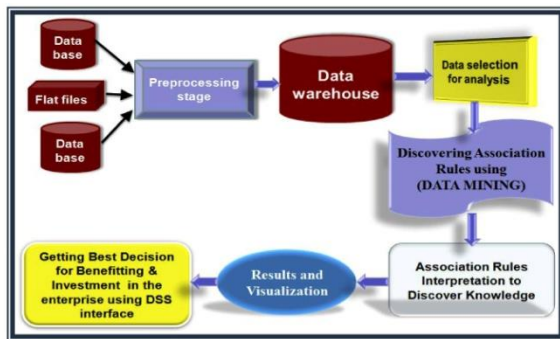
Figure 2 The Proposed knowledge-driven DSS System

In the first step of the proposed system which is Data Gathering and Integrating phase , we have collected data about items sales of a building items market from several sources and files such as (text file, excel, access, …etc) that have been existed in multiple sales departments of the market. Where collecting data from different sources usually presents many challenges, because different departments will use different styles of record keeping, different conventions, different time periods, different degrees of data aggregation, different primary keys, and will have different kinds of error. So the data must be assembled, integrated in to one unified file which is (Microsoft Access file) in our system to be ready for importing in to the C# environment for other data pre-processing techniques like resolving

inconsistency and reduction. In our proposed system, integration step led to emerging duplicated records (transactions) and inconsistent attributes which are processed in the data pre-processing phase by applying proposed algorithms of reduction and consistency techniques that are (Removing Duplication (Reduction) Algorithm) and (Resolving Inconsistency Algorithm). The cleaned and prepared data from pre-processing phase are loaded into the data warehouse (DW) which is a wide data store of the market that contains historical data and complete information about building items and has capability of modifying its data and ready for processing phase. In order to mine vast amounts of data in the data warehouse for discovering knowledge, part of the data should be selected and customized in the Data Selection phase, where we use the concept of data mart to select and customize the data for processing phase depending on the technique used for knowledge discovery. In Data Selection phase the set of items is selected for Data Mining and as input of the proposed (Index-based Apriori Algorithm) because the used technique is Data Mining and specifically the Association functionality. In the discovering knowledge phase, we use Data Mining and apply its Association functionality. The selected set of items is entered to the proposed algorithm (Index-based Apriori) for mining association rules. The number of mining association rules are different based on specified and entered min. count threshold for generating supported itemsets and min. confidence threshold for generating interesting association rules. The market manager to be able of taking decisions and managing the market resources, these rules must be interpreted for discovering knowledge to support the process of decision making. In the Association Rules Interpretation phase, we proposed and used an algorithm named (Association Rules Interpretation Algorithm) applying a simple statistical method which is represented by substituting and counting the items in the antecedent and consequent of the association rules. The results of this system represent the discovered knowledge which is the predicted ratios of items sales for the next year. The results and visualization phase which we explain and discuss in the next section, visualizes the results graphically using Line Chart tool to provide the decision maker or the market manager with conceptual values (knowledge) supporting him in managing the market easily and in a perfect way. Figure 3 has been shown below illustrates the flow chart of the proposed system.
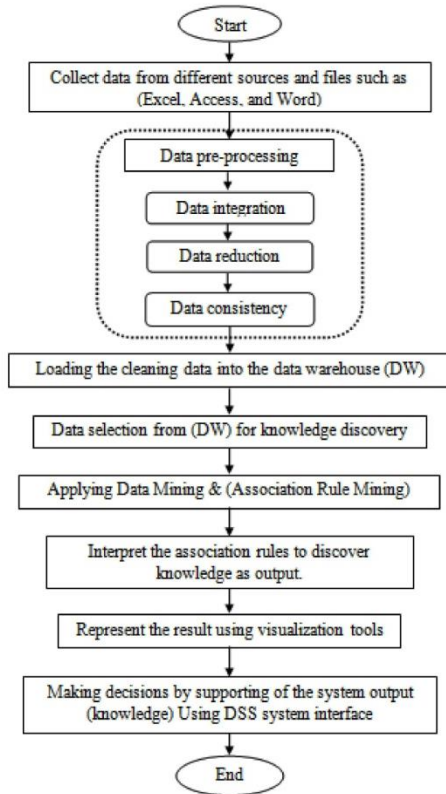
Figure 3 Flow Chart of Proposed System

7- IMPLEMENTATION AND RESULTS

The proposed and designed system has been executed by using (C# programming language). So the implementation of the system is performed on phases. The system includes several interfaces to execute it easily and to support the manager or decision maker in the process of decision making. The discovered knowledge in our system refers to the predicted ratios of sales for the items during a specified month in the next year based on statistic analysis applied on items' sales through the previous years that have been stored in our marketing Data Warehouse (DW). Figure 4 shows the discovered knowledge.

Figure 4 Results of the Association Rules Interpretation and Knowledge Discovering

The visualized results that have been illustrated clearly in figures 5, 6, 7 are for "January" of the next year.
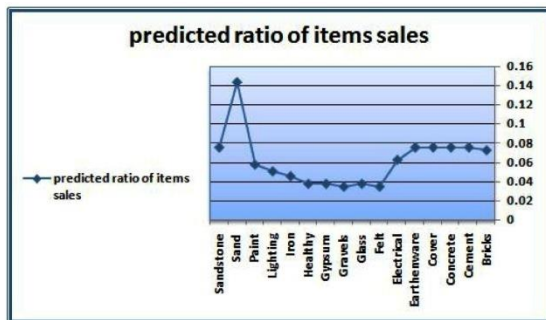
Figure 5 Discovered Knowledge by Using Index-based Apriori with
Itemset Threshold = 2100 and *Rule Threshold* = 60%

Figure 6 Discovered Knowledge by Using Index-based Apriori with
Itemset Threshold = 2150 and *Rule Threshold* = 80%
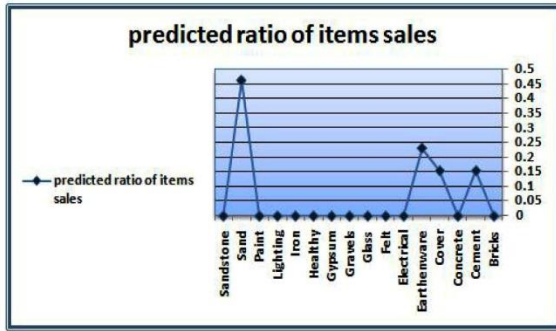
Figure 7 Discovered Knowledge by Using Index-based Apriori with
Itemset Threshold = 2200 and *Rule Threshold* = 100%

It is important to mention that these predicted ratios of items sales are being different by differing the min. count threshold and min. confidence threshold of the Index-based Apriori and according to the chosen specified month. Therefore, we executed our system and got various results (ratios) for "January" using three different min. count thresholds (2100, 2150, and 2200) and three min. confidence thresholds (60%, 80%, and 100%) as illustrated below in figures 5, 6, 7. We used three various min. count thresholds (2100 , 2150 , 2200) each of which with three various (lower, mid, higher) min. confidence thresholds which are (60% , 80% , 100%), (70% , 80% , 90%) , and (50% , 90% , 100%) for executing the system to generate various number of supported item sets and interesting association rules and getting various ratios of items sales , as shown below in table 1.

Table 1 show various system results for "January" of the next year according to different min. count thresholds for supported item sets and min. confidence thresholds for interested association rules.

Table 1 System Results According to Different Min. Count Thresholds for Supported Itemsets
And Min. Confidence Thresholds for Rules for "January"

Items	knowledge (predicted ratio of items sales)								
	count thr. / conf. thr. 2100 60%	count thr. / conf. thr. 2100 80%	count thr. / conf. thr. 2100 100%	count thr. / conf. thr. 2150 70%	count thr. / conf. thr. 2150 80%	count thr. / conf. thr. 2150 90%	count thr. / conf. thr. 2200 50%	count thr. / conf. thr. 2200 90%	count thr. / conf. thr. 2200 100%
Bricks	0.073	0.075	0.105	0.051	0.05	0.122	0	0	0
Cement	0.076	0.071	0.095	0.091	0.087	0.149	0.133	0.152	0.154
Concrete	0.076	0.071	0.086	0.056	0.053	0.054	0	0	0
Cover	0.076	0.071	0.076	0.091	0.091	0.081	0.178	0.152	0.154
Earthenware	0.076	0.071	0.067	0.131	0.119	0.23	0.222	0.333	0.231
Electrical	0.063	0.056	0.057	0.005	0.005	0	0	0	0
Felt	0.035	0.039	0	0.03	0.032	0	0	0	0
Glass	0.038	0.042	0	0.045	0.048	0	0	0	0
Gravels	0.035	0.039	0	0.025	0.027	0	0	0	0
Gypsum	0.038	0.042	0	0.051	0.053	0	0.022	0	0
Healthy	0.038	0.042	0.019	0.061	0.064	0	0.044	0	0
Iron	0.046	0.049	0.038	0.086	0.089	0.095	0.067	0	0
Lighting	0.051	0.053	0.057	0.04	0.043	0	0.022	0	0
Paint	0.058	0.06	0.076	0.025	0.027	0.027	0	0	0
Sand	0.144	0.144	0.21	0.167	0.164	0.243	0.289	0.364	0.462
Sandstone	0.076	0.075	0.114	0.045	0.048	0	0.022	0	0

8- CONCLUSIONS

After the implementation of our DSS system and through the execution of the Index-based Apriori algorithm for association rules mining, and Association Rules Interpretation algorithm and from obtained results, we concluded the following:

1- Through the execution of our system, it is become explicit that the knowledge warehouse (KW) is smaller, more accurate and more close-fitting than the data warehouse (DW) because the knowledge that has been stored in the (KW) in the form of rules or patterns or any other forms is discovered and gained from large amount of data stored in the (DW).

2- The accuracy of discovered knowledge depends on the specified and used thresholds in the Index-based Apriori algorithm. The knowledge accuracy increases by decreasing the min. count threshold and min. confidence threshold, because using lower thresholds increases the number of supported itemsets and interested association rules which lead to get more accurate knowledge and support the manager or decision maker to take accurate decisions.

3- Reducing number of itemsets will reduce the number of generating association rules and lead to gain low quality knowledge.

4- Reducing number of generating itemsets and association rules will lead to shorten run time and will reduce the used space in memory. In order to reduce the used space in memory and shorten run time without reducing the number of itemsets and association rules, we have used indexing method for fast access through applying the proposed Index-based Apriori algorithm.

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A Study on Advertisement effectiveness of cold drinks in Baramati City

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ABSTRACT

The objectives of all business are to makes profits and a merchandising concern can do that by increasing its sales at remunerative prices. This is possible, if the product is widely polished to be audience the final consumers, channel members and industrial users and through convincing arguments it is persuaded to buy it. Publicity makes a thing or an idea known to people. It is a general term indicating efforts at mass appeal. As personal stimulation of demand for a product service or business unit by planting commercially significant news about it in a published medium or obtaining favorable presentation of it upon video television or stage that is not paid for by the sponsor. On the other hand, advertising denotes a specific attempt to popularize a specific product or service at a certain cost. It is a method of publicity. It always intentional openly sponsored by the sponsor and involves certain cost and hence is paid for. It is a common form of non- personal communication about an organization and or its products idea service etc. that is transmitted to a target audience through a mass medium. In common parlance the term publicity and advertising are used synonymously.

Keywords : Advertising, Stimulation

1. Introduction

1.1 What is advertising?

The word advertising is derived from the Latin word viz, "advertero" "ad" meaning towards and "verto" meeting towards and "verto" meaning. "I turn literally specific thing".Simply stated advertising is the art "says green." Advertising is a general term for and all forms of publicity, from the cry of the street boy selling newspapers to the most celebrate attention attracts device. The object always is to bring to public notice some articles or service, to create a demand to stimulate buying and in general to bring loge the man with something to sell and the man who has means or desires to buy".

Advertising is any paid form of non – personal paid of presentation of ideas goods or services by an identified sponsor. In developing an advertising programmer, one must always start by identifying the market needs and buyer motives and must make five major decisions commonly referred as 5M (mission, money message, media and measurement) of advertising.

1.2 Basic Features of Advertising

On the basis of various definitions it has certain basic features such as :

1. It is a mass non-personal communication.

2. It is a matter of record.

3. It persuades buyers to purchase the goods advertised.

4. It is a mass paid communication.

5. The communication media is diverse such as print (newspapers and magazines)

6. It is also called printed salesmanship because information is spread by means of the written and printed work and pictures so that people may be induced to act upon it.

1.3 Functions of Advertising

Advertising is particularly effective in certain other spheres too such as :

i) When consumer awareness of products or service is at a minimum.

ii) When sales are increasing for all terms in an industry.

iii) When a product is new and incorporates technological advance not strong and.

iv) When primary buying motive exists.

It performance the following functions:

i) Promotion of sales

ii) Introduction of new product awareness.

iii) Mass production facilitation

iv) Carry out research

v) Education of people.

1.4 Types of Advertising:

Broadly speaking, advertising may be classified into two categories viz., product and institutional advertising.

A) Product Advertising

The main purpose of such advertising is to inform and stimulate the market about the advertisers' products of services and to sell these. Thus types of advertising usually promote specific, trended products in such a manner as to make the brands seam more desirable. It is used by business government organization and private non-business organizations to promote the uses features, images and benefits of their services and products. Product advertising is sub-divided into direct action and indirect action advertising, Direct action product advertising wages the buyer to take action at once, ice he seeks a quick response to the advertisement which may be to order the product by mail, or mailing a coupon, or he may promptly purchase in a retail store in response to prince reduction during clearance sale.

B) Institutional Advertising:

It is designed to create a proper attitude towards the sellers to build company image or goodwill rather than to sell specific product or service. Its purpose is to create a frame of mind and to implant feeling favorable to the advertisers company. Its assignment is to make friends for the institution or organization.

It is sub-divided into three categories: patronage, public, relations and public service institutional advertising.

i. In patronage institutional advertising the manufacturer tells his prospects and customer about himself his policies and lives personnel. The appeals to the patronage motivation of a buyers. If successful, he convinces buyers that his operation entitles him to the money spent by them.

ii. Public relations institutional advertising is used to create a favorable image of the firm among employees, stock-holders or the general public.

C) Other Types:

The other types are as follows:

i) Consumer advertising

ii) Comparative advertising

iii) Reminder advertising

IV) Reinforcement advertising.

1.5 Advertising Objectives:

The long term objectives of advertising are broad and general, and concern the contribution advertising should make to the achievement of overall company objectives. Most companies regard advertising main objective as hat of proving support to personal selling and other forms of promotion. But advertising is a highly versatile communications tools and may therefore by used for achieving various short and long term objectives. Among these objectives are the following:

1. To do the entire selling job (as in mail order marketing).

2. To introduce a new product (by building brand awareness among potential buyers).

3. To force middlemen to handle the product (pull strategy).

4. To build brand preference 9by making it more difficult for middleman to sell substitutes).

5. To remind users to buy the product (retentive strategy).

6. To publicize some change in marketing strategy (e.g., a price change, a new model or an improvement in the product).

7. To provide rationalization (i.e. socially acceptable excuses).

8. To combat or neutralize competitors advertising.

9. To improve the moral of dealers and/or sales people (by showing that the company is doing its share of promotion).

10. To acquaint buyers and prospects with the new uses of the product (to extend the PLC).

1.6 Why & When to Advertise:

Advertising as a tool to marketing not only reaches those who buy, but also those whose opinions or authority is counted for example a manufacturer of marble tiles and building boards advertises not only to people who intend to build houses but also to architect and engineers. While the manufacturers of pharmaceuticals products advertise to doctors as well as to the general public. At time it is necessary for a manufacturer or a concern to advertise things which it does not sell but which when sold stimulates the sales of its own product. There are concerns like electric heaters, iron etc. because the use of these increases the demand for their products.

Advertising should be used only when it promises to bring good result more economically and efficiently as compared to other means of selling. There are goods for which much time and efforts are required in creating a demand by sending salesman to prospective buyers than by

simply advertising them. In the early days of the cash register in America it was sold by specially trained salesman who called on the prospective users and had the difficult task of convincing them that they could no longer carry on with the old methods, and that they urgently needed a cash register. In our country certain publishers have found it less costly to sell their books by sending salesman from house to house among prospective buyers than to advertise them. In these two examples the cost of creating demand would be too high if attempted by advertising alone under such circumstances advertising is used to make the salesman acceptable to the people they call upon to increase the confidence of the public in the house. Naturals when there are good profits competitors will be attracted and they should be kicked out as and when sufficient capital is available by advertising on a large scale. Immediate result may not justify the increased expenditure but it will no doubt secure future sales.

LITERATURE REVIEW

Advertising effectiveness By Jerry W. Thomas: Barriers to Great Advertising states that, Advertising testing could provide a reliable feedback loop and lead to much better advertising, but many obstacles stand in the way. Most of us believe, in our heart-of-hearts, that we know what good advertising is and that there is no need for any kind of independent, objective evaluation. Agencies and clients alike often think that they know how to create and judge good advertising. Besides, once agencies and clients start to fall in love with the new creative, they quickly lose interest in any objective evaluation. No need for advertising testing.

Isabelle Albanese Published: April 2009, The author outlines her 4Cs of Truth in communications process to explain how it can help frame and inform ad research projects. Marketers can use the concepts of comprehension, connection, credibility and contagiousness to make sure their ads resonate with consumers.

Harold Spielmen Published: March 2000, A study using findings from the application of MSW Group's ADVANTAGE / ACT system shows the value of ad pre-testing. Advertising management has the major task of protecting a company's brands, increasing profitable sales , and maximizing the efficiency of the media budget. Certainly, a complex task made even more challenging by the fact that producing effective TV advertising is quite difficult. In the short span of 30 or 15 seconds, the producing agency must:

1) attract attention and hold the viewer;

2) establish the brand name;

3) communicate pertinent information and/or create a mood or feeling;

4) bring about a change in state of mind or attitude;

5) Persuade to behave in a prescribed way (e.g., buy the brand).

A research analyst chronicles his quest to find a simple and flexible way to measure and define advertising effectiveness. Assuming that your measurement tool is similar to the one we are using, this is what we have measured and that's where we need to start. Simply put, the "one number" starts by calculating the percentage of the potential audience that plans to act. This can be done by multiplying the advertiser's desired outcome percentage by the percentage of those that saw the advertisement. This is the number, or outcome-based ad effectiveness percentage (OB-AEP), you'll use for comparing and indexing. This secret is pretty disappointing, isn't it?

RESEARCH METHODOLOGY

The research Methodology used to script the advertisement effectiveness was based on the basic processes of research has shown below.

Research Statement:

Problem identified here was to study the Advertisement effectiveness of cold drinks in Baramati city, on the basis of which research objective to study the advertisement effectiveness on different customer at different situations in Baramati market were formulated. Also to provide a clear vision about advertisement effectiveness of cold drinks and to know about the scope for improvement in advertisement.

Objectives:

The objectives of the project focus on following point:

1. To know the most effective media of advertisement.

2. To find out the reasons for liking the advertisement of cold drinks.

3. To find out the most popular slogan of advertisement regarding cold drinks.

4.3 TYPES OF RESEARCH DESIGN

Descriptive research is used to describe the characteristics of a population or phenomenon being studied. It does not answer question about how /when/ why the characteristics occurred. Rather it addresses what question (what are the characteristics of the population or situation being studied?) the characteristics used to describe the situation or population are usually some kind of categorical scheme also known as descriptive category. Discover how effectively advertisement works on customers' mindset and identify its reasons.

Data Collection :

PRIMARY DATA : The data is original in nature and it is collected at first time for a specific purpose is called as 'Primary Data'. Primary data has been gathered specifically on project hand. Primary data was collected using survey method by choosing retailers on one specific Geographical cluster at random and a brief interview using Questionnaire was conducted to find out the advertisement effectiveness of cold drinks. Based on the survey finding a data interpretation for performed to represent the current position of advertisement effectiveness of cold drinks in the Baramati city.

INSTRUMENT FOR DATA COLLECTION

Questionnaire Method: In this method, here, all the necessary information required is collected and studied it. Questions were asked through a questionnaire, specifically designed for this study. Questions were asked about company practices and procedures with regards advertisement Promotions. This way the requirement was fulfilled. A structured Questionnaire was prepared with both closed ended Multiple choice questions and open ended questions for suggestions. This questionnaire was used to take feedback of customers.

Sampling:- "A sample is a particular segment or a part of market and it is focus for taking decisions which can be applied to the entire market" **- MANHEM**.

Sampling Methods:- Sampling design is a definite plan of obtaining some items from the whole population. The sample design is used in this project is Convenience sampling.

Convenience Sampling: This type of sampling is chosen purely on the basis of convenience and according to convenience.

Sample Frame: - Retailers form different geographical areas of Baramati city.

FINDINGS

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Researcher reached on some findings:

Maximum of the respondents are the aware about the advertisement of the cold drink and they have seen the advertisement on TV. TV is presenting the advertisement is necessary for the sale of the cold drink. Mentioned cold drinks are available in the market and respondents prefer the brand because of Flavor and Brand. Advertisement should not be too expensive, because the advertisement leads and increase the prize of the product. Media should be selected according to the types of customers. In rural areas media should be according to the convenience of the people. For the sale of cold drink to give more attention in making the advertisement and its effectiveness. Price should be decreased so as to attract the consumers to use product more. To give attention on the weak media of advertisement so that the consumer comes to know about the product. It should be attractive one so that people are attracted toward the advertisement.

Conclusion

In last Researcher conclude that majority of the respondents said that TV is the most effective media for advertisement of cold drinks and the slogans and the theme in the advertisement effect the consumers.

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A Study on Competency Mapping For The Employees

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ABSTRACT

In the modern competitive world, the business managers are required to improve the efficiency and effectiveness of their business operation. Competency mapping helps to develop objective system for recruitments, Promotions, training & development, and performance diagnostics. Success of any organization depends largely on its competent employees and the extent to which the knowledge is shared in that organization. Competency Mapping is a process through which one assesses and determines one's strengths as an individual worker ad in some cases as a part of an organization whereas Knowledge acquisition involves complex cognitive processes: perception, learning, communication, association and reasoning. Hence, competency mapping and management of knowledge and its resources play a significant role in growth and development of the organization. Competency is sometimes thought of as being shown in action in a situation and context that might be different the next time a person has to act. In emergencies, competent people may react to a situation following behaviors they have previously found to succeed. To be competent a person would need to be able to interpret the situation in the context and to have a list of possible actions to take and have trained in the possible actions if this is relevant. Regardless of training, competency would grow through experience and the extent of an individual to learn and adapt.

Keyword : Competency Mapping, Competent, Cognitive

INTRODUCTION

Competencies provide a common language and method that can integrate all the major HR functions and services like Recruitment, Training, performance management, Remuneration, Performance appraisal, Career and succession planning and integrated Human resource

management system. Competencies are becoming a frequently-used and written-about vehicle for organizational applications such as:

- Defining the factors for success in jobs (i.e., work) and work roles within the organization
- Assessing the current performance and future development needs of persons holding jobs and roles
- Mapping succession possibilities for employees within the organization
- Assigning compensation grades and levels to particular jobs and roles
- Selecting applicants for open positions, using competency-based interviewing techniques

Managers are required to improve the efficiency and effectiveness of their business operations. As there are several factors that affect the efficiency and effectiveness of operations, the improvement is required to be carried out in every factor. They are required to bring every factor in synchronization with other factors. TQM, TPM, BPR and other similar initiatives provide direction to improvement in business operations.

Good managers are generally aware about different qualities a person must possess to do a job effectively, and they make use of their knowledge to select and train their subordinates. Competency mapping helps to develop objective system for recruitment, Promotions, training & development, and performance diagnostics.HR professionals are entrusted with the responsibility for selection, training, and development, administration, deployments support, performance appraisal and performance diagnostics of the employees. The most important part of theseresponsibilities is assessment of the individual fo r their suitability for different functional tasks, and development of their potential to be effective and excel in assignedtasks.HR functions entrusted with the responsibility to find right person for every job and development of the employed person to do the assigned job effectively, have found competency mapping and assessment as a very effective tool.

DEFINITION:-

Competency for a job can be defined as a set of human attributes that enable an employee to meet and exceed expectations of his internal as well as external customers and stakeholders. Competency mapping helps to develop objective system for recruitments, Promotions, training & development, and performance diagnostics. Organizations of the future will have to rely more on their competent employees than anyother resource. It is a major factor that determines the success of an organization. Competencies are the inner tools for motivating employees, directing systems and processes and guiding the business towards common goals that allow the organizations to increase its value.

REVIEW OF LITERATURE

The Handbook of Competency Mapping: At the heart of any successful activity lies a competence or as kill. In today's competitive world it is becoming particularly important to build on the competitive activities of business. There has been much thinking about business strategy over the last three decades, particularly regarding what competencies a business needs to have in order to compete in a specific environment. Top management has been identifying corporate core competencies and has been working to establish them throughout the organization. Human Resource Development (HRD) builds competency-based models that drive business results.

"Competency Mapping " by R.K. Sahu, Excel Books Pvt. Ltd: This book covers all the dimensions of competencies including developing a competency model for the organization, identification of competencies, assessment of competencies and application vis-à-vis inter-relation of competencies with other HR processes like recruitment, placement, training and development, performance management, career planning, succession planning, reward systems and job redesign.This book is a result of author`s vast experience in the areas of Human Resource Management and Development while working for more than 360 companies as Management Consultant and Trainer.

- **PROCESS OF COMPETENCY MAPPING**

1. **Introduction:** The facilitator will discuss about the objective of the program and explain about the concept and practice of competency mapping and assessment.

2. **Overview of organization, organizational design and job:** Here the facilitator will briefly present and discuss:

- Business, market, customer and customer requirements
- Organizational structure
- Technical processes
- Business and Management processes

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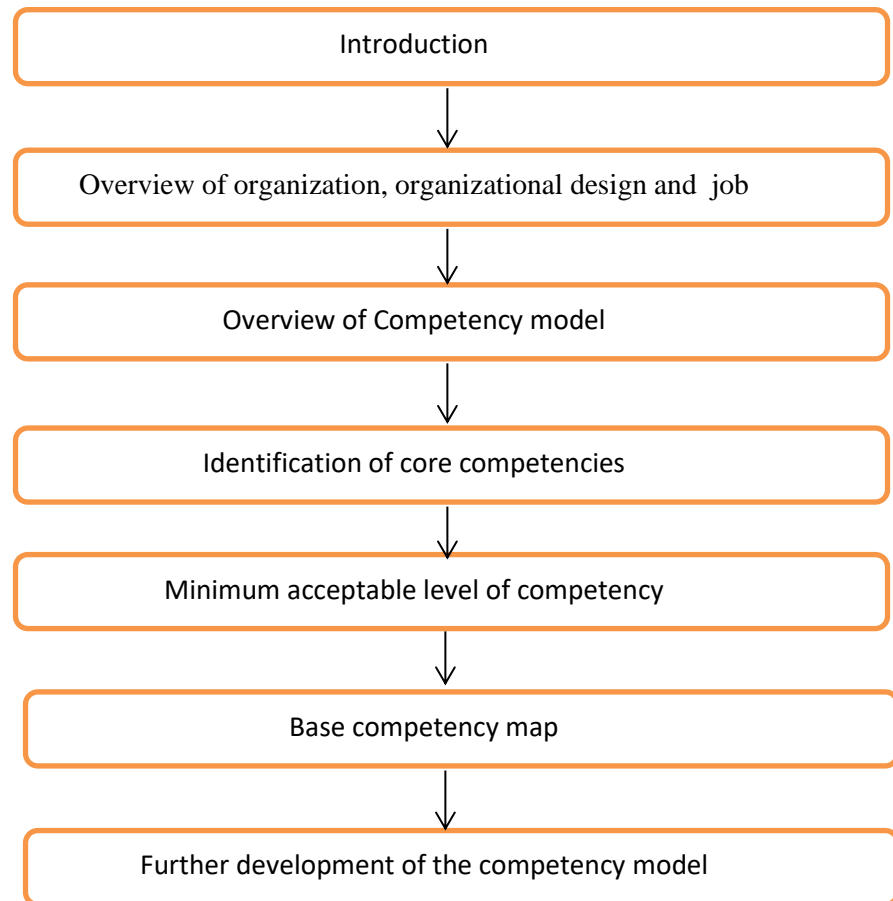
3. **Overview of Competency model:** The facilitator will briefly discuss about the competency model. They should explain different competencies and their behavioral

indicators. Facilitator should provide examples of relationships between competencies and business process requirements like elemental competency of influencing ability and sales process, Competency of team working & interpersonal effectiveness and production process etc. Facilitator will answer the questions that participants may have, to clear their doubts. This will complete the orientation of the program.

4. **Identification of core competencies:** Facilitators will every job its duties and responsibilities, processes participated, critical factors for performance and criticality of the job etc., and will facilitate discussion among participants with respect to the job factors. The objective is to identify up to ten most important 10 element competencies for each of the job from the list of 20 elemental competencies and divide them into two groups: core competencies and supporting competencies.

5**. Minimum acceptable level of competency:** To decide minimum acceptable level of each of the competency.

6. **Base competency map:** Prepare a table of competency and their minimum acceptable level of each of the job position in the organization. This may be called as Base competency map for the organization.

7. **Further development of the competency model:** The Base competency map based on the model provides broad requirements for each of the job. This map helps to establish basic requirements for a competency based performance and potential appraisal system. For performance diagnostic applications the model needs to be further refined with in-depth job studies for each of the job.

The overall competency requirement for a job needs to be understood in terms of elemental competencies which depend upon education, knowledge, training, experience, technical and non-technical skills, attitude, personal image etc., and some of these attributes are difficult to objectively assess and measure. Competency mapping and assessment is a very important development for HR function. It provides much needed objectivity to HR activities. With the help of tool like Competency mapping, role of HR has changed from support function to core

function. With Competency based HR systems and programs, HR function can directly contribute to organization effectiveness.

An Empirical Study on Competency Mapping (With Special Reference to Farida Classic Shoes Private Limited, Ambur by R. SUGUMARI and S. RUPA (ALIAS) ANDAL (2014), Human resource management is a process of bringing people and organizations together so that the goals of each other are met. Through proper competency mapping high skilled and knowledge based jobs are increased. Human resource development aims at constantly assessing competency requirements of different individuals to perform the job assigned to them effectively and provide opportunities for developing these competencies to prepare them for future roles in the organization. Hence an attempt has been made to analyse the link between competency mapping and human practice in the organization. Further efforts have also been made to know the impact of competency mapping on individual and team and to know the impact on training provided to the employees.

A Study On Mapping Of Employees' Competency By Krishnaveni.J, The study aims to assess the competency of the employees of Meenakshi Mission Hospital and Research Centre, Madurai, India. It evaluates various aspects of employees' competency such as ability to mutual relationship, communication, adaptability, leadership and overall task proficiency. This study may help the organization to identify the men of incompetence among the employees, and to take remedial measures to improve their performance.

A study on competency mapping for the employees inindo shell cast private limited, coimbatore by t.manivel -In this modern competitive world, managers are required to improve the efficiency and effectiveness of their business operations. As there are several factors that affect efficiency and effectiveness of operations, the improvement is required to be carried out in every factor. They are required to bring every factor in synchronization with other factors. TQM, TPM, BPR and other similar initiatives provide direction to improvement in business operations. Good managers are generally aware about different qualities a person must possess to do a job effectively, and they make use of their knowledge

to select and traintheir subordinates. Competency mapping helps to develop objective system for recruitments, Promotions, training & development, and performance diagnostics.

A Study on Competency Mapping of Employees in Hero Best Motors With Special Reference to Malappuram District by S. Bhuvaneswary -The current globalization of economy necessitates innovative approaches in managing the work force. The fast changes happening in the demography and social systems thereof have given breathing space for various HR practices enhancing the employee productivity and growth. And one of the most commonly used HR practice is competency mapping for development of the employees. Identifying and development of the competencies in organization enable better performance management as well as reward and recognition systems leading to career and succession planning programs. Also competency mapping is a strategic HR frame work for monitoring the performance.

According to MRS. B. R. CELIA; MR. M. KARTHICK, A competency contains knowledge, skills and behaviors that staff members or members of a specific category need to demonstrate in order to carry out their task and responsibility successfully. Competencies are the foundation for effective performance in any job or position. A competency profile can include core competencies, which identify those core values that all staff members should demonstrate, managerial competencies, relevant for management positions and functional/technical competencies that are specific to functional areas. Competency is the ability of an individual to perform a job properly. Some scholars see ―competence‖ as a combination of knowledge, skills and behavior used to improve performance; or as the state or quality of being adequately or well qualified, having the ability to perform a specific role.

According to Maria T. & Afonso C. (2002) analyzed the consequences of processes of formation of product chains and networks on the development of competencies at the firm level. The study was carried out for Brazil Plastic industry and results indicated that a very strong relationship exists between the competencies that are mastered by any given firm and its positioning in the various productive chains or networks.

Tobias Ley & Albert D. (2003): presented a formalization for employee competencies which was based on a psychological framework separating the overt behavioral level from the underlying competency level. On the competency level, employees draw on action potentials which in a given situation produce performance outcome on the behavioral level. The Skills Management approach was suggested to ensure that employee competencies are managed in line with the future needs of an organisation. In the process of Skills Management, required individual competencies are defined in terms of required skills and knowledge, management skills and social and personal skills which were derived from job requirements and were influenced by the core competencies. As a result, a number of job profiles, sometimes also called 'competency models', are obtained.

RESEARCH STATEMENT

Competency mapping is a process which identifies an individual's strength and weakness in order to help them to better recognize themselves. The research objective states the type of information needed to solve the problem. Here, the research is done for awareness and knowledge of competency. Also to identify employee competencies and proper mapping of their skills with their tasks and to find out ways to achieve various competency mapping purposes (Job efficiency, promotion, record keeping).

OBJECTIVES

1. To know about the level of awareness about the competency mapping among the employees.
2. To identify competencies of employees in the organization.
3. To analyze the techniques to implement the competency mapping challenges.
4. To find out the ways to use competency mapping techniques to achieve various purposes.(Job efficiency, promotion, record keeping)

RESEARCH METHODOLOGY

The process used to collect information and data for the purpose of making business decisions. The methodology may include publication research, interviews, surveys and other research techniques, and could include both present and historical information.

Research design is the arrangement of conditions for the collection and analysis of data in the manner that aims to combine relevance to research purpose with economy in procedure.

Descriptive research method is used for the study of competency mapping as an effective tool for HR. The search for answer to research question is called collection of the data. Data are fact, and other relevant materials, past and present, serving as bases for study and analyses. There are two types of data collection namely primary data collection and secondary data collection. **Primary Data** is collected mainly by Structured questionnaire and observing the employees in the organization and by research study supported by questionnaire. Primary sources are original sources from which the researcher directly collects data that have not been previously collected.

<u>FINDINGS</u>

- Employees having awareness about the concept is most important and here, more than 50% are aware about the competency mapping. Necessity for competency mapping is there in every organization competency mapping helps to improve overall performance. Competency mapping helps the employees to do the best job possible and mostly all employees agree with it.

- Competency mapping as an assessment tool helps organization to avoid problems. Employees have assessed competency mapping in the past and Many employees in the company undertake self-development activities which is a good sign.

- The techniques used for analyzing competency mapping are analysed between recruitment, further development need, succession planning & promotion, and organizational development.

- The employees agree that the organization includes appropriate people in the decision making process of the organization but also there is some level of dissatisfaction which can be reduced through appropriate measures. Various methods are used for competency mapping by the organization such as projects, assignments, events, special responsibilities etc,   Almost all employees accept that established goals are accomplished through

competency mapping which is a good percentage. There are various ways used to access competency such as personal interview, psychometric test, written test and group discussion. Some employees are satisfied with the fact that feedback is taken from the working team in the organization but few employees are not satisfied which is not a good sign.

CONCLUSION

The organization should create awareness about the Competency mapping and their uses among the employees through various programs. The organization should enhance the employee's competencies through various programs. After finding their skills, they can provide the initiatives to the employees to excel as a potential employee with specific skill. And also they can enhance the multiple skills among the employees. Competency mapping and assessment provides clear indication of employee developmental needs. Candidate weakness with respect to the required competencies discovered in the assessments shows opportunity for development for the candidate At present scenario, Competency mapping is essential for every organization. Only thing that if the organization used it effectively means, they will definitely get benefit. The employee's competencies can be enhanced through conducting various training and development program, assigning projects, to involve all the employees in decision-making process etc.

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5. Employee Development through Competency Mapping:A way ahead for Organizational Growth

Gesture Recognition Using CNN Algorithm for Human Interaction

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Abstract-Hand gesture recognition has gained significant attention in recent years due to its wide range of applications in human-computer interaction, sign language interpretation, and virtual reality. Deep learning algorithms, particularly Convolutional Neural Networks (CNNs), have proven to be highly effective in achieving accurate and robust hand gesture recognition. This paper presents a novel approach for hand gesture recognition using a CNN algorithm.

The proposed CNN-based hand gesture recognition system consists of three main stages: data preprocessing, feature extraction, and classification. In the data preprocessing stage, hand gesture images are collected and preprocessed to enhance their quality and reduce noise. Various techniques such as image resizing, normalization, and background removal are employed to improve the input data.

Next, the CNN architecture is utilized to extract meaningful features from the preprocessed hand gesture images. The CNN model consists of multiple convolutional layers followed by pooling layers, which help in capturing hierarchical features at different levels of abstraction. Additional layers such as fully connected layers and dropout layers are incorporated to further enhance the model's performance and prevent overfitting.

Keywords — Deep Learning, classification, Convolutional neural network, feature extraction.

I. INTRODUCTION

Hand gesture recognition has emerged as a prominent research area in the field of computer vision and human-computer interaction. The ability to interpret and understand human hand gestures plays a crucial role in developing intuitive and efficient interfaces for various applications, including virtual reality, robotics, and sign language interpretation. Deep learning algorithms, particularly Convolutional Neural Networks (CNNs), have demonstrated exceptional performance in image classification tasks, making them an ideal choice for hand gesture recognition.

Traditional methods for hand gesture recognition often relied on hand-crafted feature extraction techniques, which required extensive domain knowledge and manual feature engineering. However, these approaches often struggled to capture complex spatial patterns and variations in hand gestures, leading to limited recognition accuracy. The advent of deep learning has revolutionized the field by allowing automatic feature learning directly from raw input data, mitigating the need for explicit feature engineering.

1. Development of a CNN-based hand gesture recognition system: We present a comprehensive pipeline that incorporates data preprocessing, feature extraction using CNNs, and gesture classification. This pipeline is designed to extract meaningful and discriminative features from hand gesture images, enabling accurate classification.

2. Evaluation on publicly available datasets: To assess the performance of our proposed approach, we conduct extensive experiments on widely used hand gesture datasets. These datasets cover various hand gestures and provide a benchmark for comparison with existing methods.

3. Comparative analysis: We compare the performance of our proposed CNN-based approach with other state-of-the-art hand gesture recognition methods. This analysis demonstrates the superiority of our approach in terms of recognition accuracy and robustness.

CNN(Convolutional Neural Network)

CNNs are made up of a number of layers, each serving a particular purpose.

1.Input Layer: The CNN's initial layer, known as the input layer, is in charge of taking in input images.
2.Convolutional Layer: A collection of filters are applied to the input image by the convolutional layer, which aids in the extraction of features from the image. A feature map is created after each filter has been applied to the input image.
3.ReLU Layer: Rectified Linear Unit (ReLU) activation functions are applied to each component of the feature maps in the ReLU layer, which aids in the network's introduction of non-linearity.
4.Pooling Layer: By combining the maximum or average value from each small region of the feature maps, the pooling layer minimises the spatial size of the feature maps.
5.Fully Connected Layer: This layer incorporates the results of the preceding layer into a conventional neural network in which every neuron is linked to every neuron in the layer above it.
6. Output Layer: The ultimate output of the CNN is created by the output layer, which often results in a class label or a probability distribution over all possible classes.

II.   LITERATURE SURVEY

1. Li, Y., & Zhang, H. (2018). IEEE Access.
This study proposes a hand gesture recognition system using a CNN architecture. The authors collect a large-scale hand gesture dataset and train a CNN model to learn discriminative features from hand gesture images. Experimental results demonstrate the effectiveness of the proposed approach in achieving high recognition accuracy.
2. Mitra, S., & Acharya, T. (2019). Hand Gesture Recognition using Convolutional Neural Networks. International Conference on Intelligent Sustainable Systems.
The authors propose a CNN-based hand gesture recognition system that incorporates depth information along with RGB images.
3. Zhou, L., & Wang, Y. (2020). Dynamic hand gesture recognition using a two-stream CNN model. Multimedia Tools and Applications.
This study introduces a two-stream CNN model for dynamic hand gesture recognition. The model consists of spatial and temporal streams, which capture spatial appearance and motion information of hand gestures, respectively.
4. Nair, S. N., et al. (2020). Hand Gesture Recognition Using Convolutional Neural Networks: A Review.
This review paper provides a comprehensive overview of hand gesture recognition using CNNs. It discusses various CNN architectures, training strategies, and datasets used in hand gesture recognition research
5. Cao, L., et al. (2021). A Survey. IEEE Access.
This survey paper provides an extensive overview of hand gesture recognition techniques using deep learning approaches, including CNNs. It covers different aspects of hand gesture recognition, such as dataset acquisition, data preprocessing, feature extraction, and classification. The paper also discusses the applications, challenges, and future directions in this field.

III.   OBJECTIVES

The objective of using a CNN algorithm for hand gesture recognition in deep learning is to accurately and robustly classify hand gestures from input images. The primary goals of this objective are as follows:

1. Accurate Classification: The CNN algorithm aims to correctly identify and classify different hand gestures based on the input images.

2. Robustness to Variations: Hand gestures can vary in terms of hand shape, orientation, lighting conditions, and background clutter.

3. Real-Time Performance: For practical applications, real-time performance is often a crucial requirement. The CNN algorithm aims to achieve efficient processing and inference times to enable real-time hand gesture recognition.

4. Generalization: The CNN algorithm should generalize well to unseen hand gesture examples and be able to recognize gestures beyond the training dataset.

5. Adaptability to Different Gesture Sets: Hand gesture recognition systems may need to adapt to different sets of gestures based on specific application requirements.

6. Scalability: As the field of hand gesture recognition evolves, the CNN algorithm should be scalable to accommodate larger datasets, more complex gesture classes, and potentially incorporate multi-modal input (e.g., RGB and depth images).

By achieving these objectives, the CNN algorithm for hand gesture recognition aims to facilitate natural and intuitive human-computer interaction, enabling applications such as gesture-based control systems, sign language interpretation, virtual reality, and augmented reality experiences. physical barriers.

IV. ARCHITECTURE
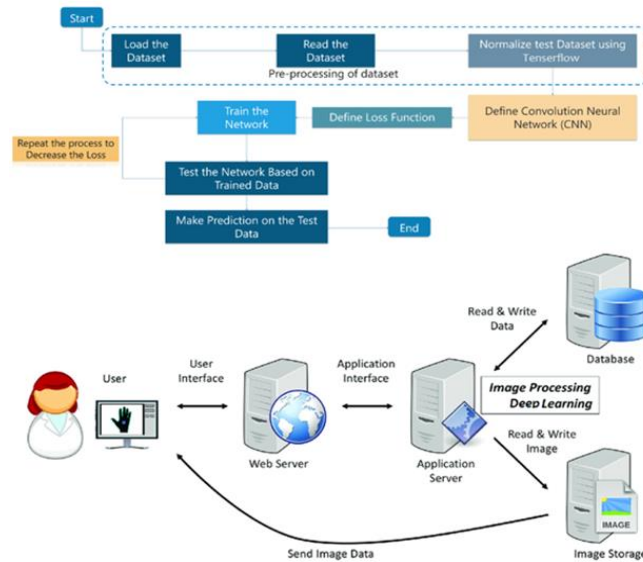
Fig1: System Architecture

1. Input Layer:
The input layer receives the hand gesture images as input. The images are typically represented as matrices with pixel values representing the intensity or color information.

2. Convolutional Layers:
Convolutional layers are the key components of a CNN architecture. They consist of a set of learnable filters that perform convolutions on the input image. Each filter slides over the input image, computing element-wise multiplications and summations to produce a feature map. Convolutional layers are responsible for capturing local spatial patterns and hierarchical features in hand gestures.

3. Activation Functions:

Non-linear activation functions such as ReLU (Rectified Linear Unit) or Leaky ReLU are commonly used after each convolutional layer. Activation functions introduce non-linearity into the network, allowing it to learn more complex relationships between the input and output.

4. Pooling Layers:

Pooling layers are used to down-sample the feature maps obtained from convolutional layers. Max pooling is a popular choice, where the maximum value within a local region is retained, discarding the remaining values. Pooling helps reduce spatial dimensions while preserving the most important features, making the network more robust to translations and improving computational efficiency.

5. Fully Connected Layers:

Fully connected layers are typically added toward the end of the CNN architecture. They serve as a classifier by taking the flattened feature maps from the preceding layers and mapping them to the output classes.
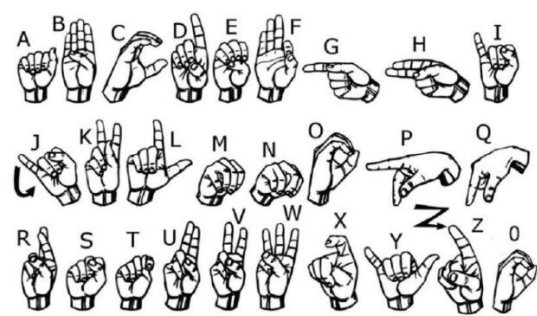
Fig 2: Hand Gestures

V. RESULT

The result of project is significant in that it enables the generation of a text output that can identify the name of a Gesture Image. This outcome is the product of dedicated system, which has been developed to achieve this specific objective. The ability to accurately identify gestures through automated means has numerous applications, such as in the fields of Healthcare, Automotive industry, Robotics and automation. This innovative solution provides a convenient and efficient method for Gesture Recognition & Identification, which could prove valuable in varioussettings.
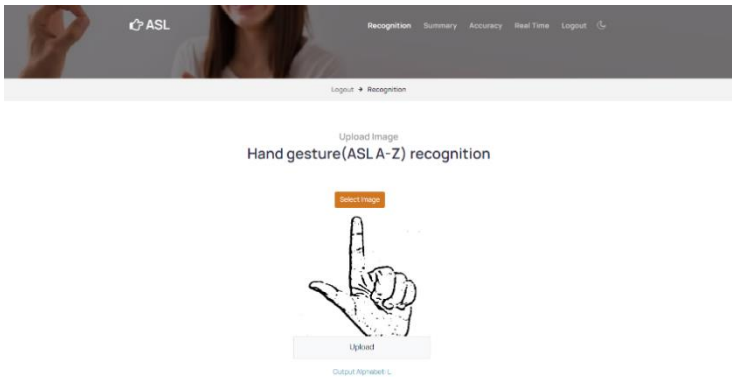
Fig 3: Result

VI. CONCLUSION

In conclusion, hand gesture recognition using CNN algorithms in deep learning has emerged as a powerful and effective approach for accurate and robust gesture classification. The utilization of CNN architectures allows for automatic feature learning from raw input data, reducing the need for manual feature engineering and improving recognition performance. Through this paper, we presented a comprehensive overview of hand gesture recognition using CNN algorithms, highlighting its significance in various fields. The proposed CNN-based approach offers several advantages, including high recognition accuracy, robustness to variations, real-time performance, adaptability to different gesture sets, and scalability for future advancements. The evaluation of the hand gesture recognition system based on CNN algorithms involves assessing recognition accuracy, analyzing the confusion matrix, evaluating precision, recall, and F1-score, examining ROC curves, and comparing results with baseline or existing methods. These evaluation metrics provide valuable insights into the system's performance, its strengths, and areas for improvement. The applications of hand gesture recognition using CNN algorithms span across multiple domains. It finds utility in human-computer interaction, virtual reality, robotics, sign language interpretation, gaming, healthcare, automotive, surveillance, and security. The ability to interpret and understand hand gestures enables more natural and intuitive interactions between humans and machines, enhancing user experiences and opening doors to innovative applications.
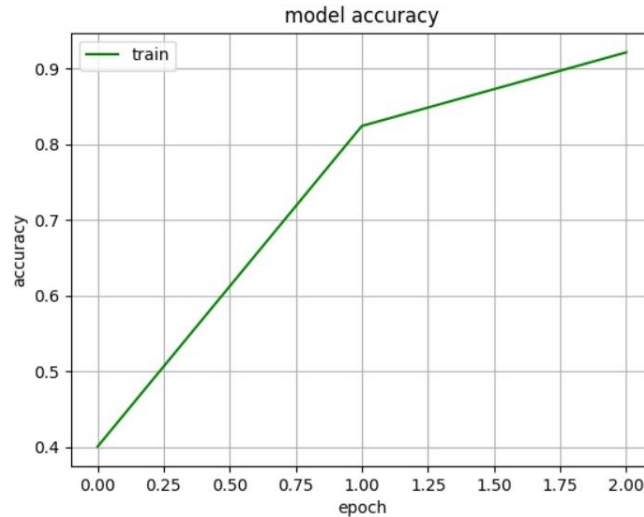
Fig 4: Model Accuracy

As the field continues to advance, there are opportunities for further research and development. Future work can focus on addressing challenges such as real-time performance optimization, handling complex gesture sets, improving robustness to environmental variations, and exploring multi-modal input integration. Overall, hand gesture recognition using CNN algorithms in deep learning holds great promise and has the potential to revolutionize various industries and domains.

ACKNOWLEDGMENT

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A Study of Visionary Leadership and Organization Performance with reference to Higher Education Institutions in Maharashtra

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ABSTRACT

This study examines how organisational values and visionary leadership affect how higher education institutions manage developments brought on by the National Accreditation Board's accreditation standards. The research uses an integrated hybrid methodology by conducting quantitative surveys of staff members at one of the leading higher education institutes in Maharashtra and qualitative conversations with leadership individuals. The study's results show that organisational culture and visionary leadership have a big impact on an organisation's capacity to adapt to change. The research illustrates the beneficial effects of visionary leadership at the chosen university in Maharashtra and emphasises the critical need for an encouraging organisational culture for successfully managing change.

The study also looks at how organisational culture and visionary leadership impact higher education institutions' effectiveness. The results indicate that institutions are more likely to produce higher performance outcomes when they follow visionary leadership practises and support a good organisational culture than when they do not. According to the research's findings, collaborative organisational culture and visionary leadership are crucial elements in handling transformation and enhancing organisational effectiveness in HEI. These insights may help institutions create effective tactics for handling transformation and raising organisational performance by guiding strategic choices.

 Keywords: Organisational culture, Visionary leadership, Higher education institutions, Change management, Accreditation standards and Organisational effectiveness

INTRODUCTION

 Life's inevitability of transition has varied effects on people, groups, and other things. While some modifications may be the result of deliberate action, others might be the outcome of outside forces like technological developments rate action, others might be the outcome of outside forces like technological developments. Both people and organisations may be significantly impacted by these developments. Person changes may also affect organisational changes, especially when the person plays a key role, while modifications to the organisation can also have an effect on people inside the organisation.

According to ministry and HEI regulations, HEIs in India are now obliged to adjust to new regulations in the Institutional Quality Assurance Framework. The National Standards for Higher Education are also outlined in regulations framed by the Maharashtra State Ministry of Higher Education, which mandate that institutions continuously enhance their performance. HEIs in India will be significantly impacted by these policies, and they will need to adjust to the infrastructure's shifting environment to guarantee quality.

Among the decisive elements of the transition, according to Yukl, following are mentioned: [1]

Social difficulties or events that cause specific groups of people's values to alter might lead to transformations within particular communities. These modifications may occur as a result of societal unrest or other relevant problems. Numerous facets of society and daily life have changed as a result of technological advancements.

There has been a noticeable change in consumer behaviour, with more consumers choosing to make digital purchases. Thanks to the ease offered by technological advances in communication and information, this has resulted in the development of online consumer behaviour. Social developments are influenced by economic changes as well. The lives of Indians evolve along with their financial levels. For instance, the majority of metropolitan areas today have their own modes of transportation, such as automobiles and motorcycles. Personal modifications may have a significant influence on their environment as well. For instance, entrepreneurs may provide new employment prospects and so benefit society. A competent leader will work to implement reforms that are in line with their organisation's vision, purpose, goals, and objectives. The adjustments are intended to increase the organisation's quality as well as quantity, resulting in maximum revenues for for-profit businesses and compassion for non-profit organisations.

Wahab [2] asserts that the following are the primary factors causing modification:

Different facets of human existence have changed as a result of technological improvements, particularly the growth of technology for communications and information. The study of politics, financial markets, technological advances, and socio-cultural factors are additional influences with the capacity to transform an organisation.

The phases that follow may be used to describe the transformation procedures: Causes for accepting or avoiding shifts, the phases of transformations, and responses to each phase of transformation.

The following are the phases of transformation, according to Lee [3]: Management identifies the problem, i.e., a problem that needs to be looked into. Evaluation looks for gaps between the actual situation and the ideal circumstances that ought to be present inside the organisation. Assessment looks for resources or devices to close those gaps. Designing the setting has been completed.
Developing: create the framework that needs to be changed, along with the necessary materials for amenities and structures.
Execution: carry out the strategy that was previously established.
Assessments: Consider a method to monitor and gauge the success of the transformations.

People often respond to change in either of the following ways: by embracing it or by rejecting it. Experts have shown that emotional intelligence and personality are the two key variables that affect these responses.

People might have either positive or negative attitudes towards change. According to research, an organisation's growth and development may be favourably impacted by an upbeat disposition towards modifications, whereas a negative attitude might work against the organisation's success.

The way a person reacts to alterations within an organisation may be greatly influenced by their character traits. Some people may manage change better than others, depending on their personality types.

Overall, being upbeat and adaptable are crucial traits for successful organisational performance. In order to successfully navigate transitions while contributing to the achievement of their organisation, people must be conscious of their unique character characteristics and psychological intelligence.

OBJECTIVES OF THE STUDY

➤ Examine the effect of visionary leadership on the administration of changes brought about by accredited requirements in Maharashtra's HEIs.
➤ Investigate how the organisational environment influences the flexibility of HEIs. Analyse the effects of organisational culture and visionary leadership on the efficiency of HEIs.
➤ Examine the way cooperative organisational atmosphere and visionary leadership are essential for managing change and improving organisational efficiency at HEIs.
➤ Give advice and suggestions on how to handle evolution effectively and improve the organisational efficiency of HEIs.

Transformations being put into practise

The subsequent phases are often followed while implementing transitions:

Prioritising transformations that will have the biggest effects on the organisation's constituent parts is crucial when an organisation undergoes transformation. For instance, if a third-party organisation introduces a new policy, it's important to relate the modifications to the strategy's goals and determine what areas need rapid consideration. Implementing change successfully depends on having an in-depth comprehension of the organisational characteristics inside the organisation. A healthy organisation relies more on its established structure than just its employees. Changes may be managed successfully if a framework is established, regardless of the leader. All employees, not just the CEO, should share the duties of executing transformation. Each employee of the company, from the highest levels of executives down to the ground-level workers, must specify their roles in the implementation and reaction to changes. It's crucial to take implementation speed into account while making adjustments. The resources that are available to the organisation have a significant impact on how quickly things change. Changes may be made efficiently and rapidly if there are enough resources.

Yukl offers advice on how to successfully execute change inside an organisation in his work [1]. This advice is intended to guarantee that the adjustments made are intentional, quantifiable, and, in the end, result in organisational growth. To put the modifications into effect, Yukl advises the following actions [1]:

Make the requirement to make improvements seem more urgent.
Make the advantages of the shift vision clear.
Determine who supports the change and who opposes it, and learn why they oppose it (such as perceived inefficiency, impossibility, or clashing values.
Create supportive alliances to bolster the change effort.
Use task groups to direct the change's implementation.

Make sure the right people with the required skills are participating in the change process. Encourage knowledgeable people to help with the organising and carrying out of the change. To support the change effort, implement symbolic modifications that have an influence on the task.

B. Institutional Developments in HEI

Developments in social science, educational, and humanities studies, including alterations to requirements from the 8 previous requirements to a minimum of 24 requirements, are now causing transformations in HEI in Maharashtra.

The eight outdated norms are:

1) Graduate competence requirements: The competence requirement for graduates serves as an evaluation framework for awarding degrees to students. For instance, if established standards are employed, a value of 85 is needed to get an A.

2) The strategies regarding HEI define the subject matter standard as an educational programme utilised in institutions. Plans, environments, and standards for instructional and educational activities that are designed to accomplish the objectives of higher education are included in this curriculum. For their individual study programmes, each institution bases its academic programme on the National Standards of HEI, which place an emphasis on the development of intellectual and cognitive ability, moral character, and talents. The execution of the academic programme in higher education seeks to create individuals who have outstanding and distinguishing characteristics as well as national values that are in line with the demands of national development. In order to fulfil the needs of the Industrial Revolution, or Industry 4.0, which is characterised by fast change, graduates must also possess a high degree of information and communication technology expertise.

3) Process requirements are a collection of rules that specify the steps that must be taken throughout the educational procedure at institutes of higher learning in order to meet the intended graduate competence levels, as stated in the National Regulations of HEI in Maharashtra. The course outline, semester plans for learning, instructional materials, and teaching techniques are the main components of these prerequisites.

4) For institutions to maintain a high level of instruction, they must maintain high standards for their administration and teaching personnel. This criterion calls for a sufficient number of administrators and lecturers to assist with the teaching process. Additionally, there must be an adequate balance between instructors and learners. The professors must also meet the necessary requirements for their operational and teaching jobs. Additionally, it's critical that each professor have a high degree of expertise in their specialised disciplines.

5) The tangible assets made available by the institution of learning are included in the infrastructure and amenities requirement. The aforementioned assets may consist of academic structures or complexes with sufficient and effectively equipped educational settings, libraries, labs, canteens, and sporting facilities, as well as lecture rooms and other pertinent areas. The requirement may also apply to resources made available for student usage, including computer equipment, library books, and other necessary supplies. The goal is to make certain that the educational facility has the amenities and facilities necessary for the best possible results in learning as well as instruction, which will eventually result in satisfied students.

6) Higher education's administration standards cover all administrative and managerial processes as well as the administration of numerous extracurricular and academic endeavours. The administrative structure is divided into many levels, including university, faculty, department, bureau, and supporting entities. These levels are in charge of administering and supervising different areas of the HEI to make sure they function properly and efficiently in order to get the intended results.

7) The financing standard relates to how universities are funded, and there are two sorts of universities: public colleges and universities and universities that are privately owned. While private colleges are often supported by a community foundation, public institutions are primarily subsidised by the government. Private institutions sometimes depend on tuition fees from students and additional funding for their financial support.

8) The purpose of the accepted norm of assessment is to offer direction for the assessment procedure used to gauge student performance. This standard attempts to guarantee that evaluations are impartial and compliant with legal requirements. For the purpose of gauging student success, the assessment method must also provide precise and reliable outcomes.

C. 24 (Twenty-Four) National Regulations for HEI

In accordance with the Ministry of Higher Education in Maharashtra, the new national requirement for attaining the national educational requirements has been set with a minimum of 24 topics that are defined by government policies. Higher education institutions with greater resources, however, are able to go above and beyond these minimal standards.

IWU introduced four new criteria, increasing the overall number to 32 standards, to go above and beyond the minimal needs. These comprise the initial eight government-set standards in addition to an extra eight standards for research activities and an additional eight requirements for volunteering in the community. In addition, there are four regional standards for requirements for alumni studies: academic climate, international relations collaboration, and information technology.

- ➤ The HEI will alter both numerically and subjectively as a result of the shift in criteria. Quantitative adjustments consist of:
- ➤ The quantity of executive management
- ➤ the total number of HoDs and study programmes;
- ➤ the number of executives;
- ➤ the quantity of division leaders; the quantity of academics; and
- ➤ the quantity of managerial employees
- ➤ The number of classrooms, labs, libraries as a whole, and similar spaces
- ➤ Library's collection of publications, among other things

Higher education must fundamentally develop in conformity with the specified quality goals, incorporating advances like:

- ➤ Doctorate training for lecturers
- ➤ Formal educational job of instructor
- ➤ Training aptitude
- ➤ Capacity for researching
- ➤ The capacity to engage in volunteer work

> ➤ The capability of producing scientific publications

D. Handling Fluctuations in HEI

A leadership style with special traits is required to handle the changes taking place in institutions, notably at an HEI in Maharashtra. They involve being adaptable to outside developments, planning ahead, having a global perspective, comprehending and using ICT, thinking strategically, defending the interests of stakeholder groups, and being aware of the nuances of HEI in Maharashtra. The researchers propose reorganising the institution's top leadership in order to include capable people who can lead in accordance with the organisation's vision, purpose, goals, and objectives.

As the most suitable method of leadership for the existing HEI in Maharashtra, the author suggests visionary leadership. This type of management entails planning ahead, possessing an unambiguous goal and successfully conveying it to others, being self-assured and organised, working as a change agent with the potential for imagination and motivation, and displaying intelligence and prominent capacity. A strategy and written approach that is tactical, imaginative, creative, has unique optimism and goals, empathises with others, and has great mental judgement and sound judgement may be used to apply this inspirational style.

METHOD

The hybrid multidisciplinary strategy used in this research combines quantitative and qualitative techniques. The research includes 40 participants—35 academics and 5 employees—and a single significant witness, the president of HEI in Maharashtra. Indirect surveillance of leadership conferences and unofficial get-togethers among the president and colleagues, as well as an assortment of questions directed at the key witness, were used to acquire qualitative data. A questionnaire that relied on the findings of the qualitative study was used to collect quantitative data. With visionary leadership and organisational culture acting as independent factors and responsiveness to change acting as the dependent variable, structural equation modelling based on partial least squares was used to analyse the data in the second stage of the research. The reliability and accuracy of the questionnaire were confirmed using Pearson correlation and Cronbach's alpha. The qualitative study examined many facets of visionary leadership, including vision, confidence, knowledge of and empathy for subordinates, functioning as an improvement substance for managerial abilities, creative thinking about the future, and inspiring traits. The research also looked at methods of approaching and thinking about issues connected to strategic transformation as well as whether the leader's vision affects followers.

The HEI's vision, purpose, and long-term objectives as a means of legally adhering to present federal laws concerning the accrediting of HEIs

> ➤ What exactly are the establishment's aspirations and goals for the coming years?
> ➤ Which are the best practises for managing organisational transformation?

A mixed-methods strategy is used in the study, integrating qualitative as well as quantitative methods of research. A single source, the rector of the selected HEI, and 40 respondents—35 academics and 5 employees—are included in the subjective stage. The dean's leadership

meetings and casual contacts with employees are observed and directly observed to get the qualitative data. On the other side, the quantitative step entails giving participants a questionnaire containing queries generated from the interviewees' findings. Using structural equation modelling using partial least squares, the study examines how visionary leadership, organisational culture, and reaction to change are related. The use of Pearson correlation and Cronbach's alpha ensures the validity and reliability of the questionnaire. The qualitative portion emphasises the rector's vision, self-assurance, compassion, leadership skills, creativity, and position as an inspiration in the face of upcoming changes. In the quantitative phase, the variable that is dependent, assessed by positive and negative attitudes, is reaction to transformation, whereas the determining factors are visionary leadership and organisational culture. Figure 1 provides an illustration of the study's paradigm.

Visionary leadership and organisational norms have a substantial impact on how well an organisation responds to shifting circumstances, according to the study hypothesis (H1).

Fig. 1. Quantitative exploration Paradigm
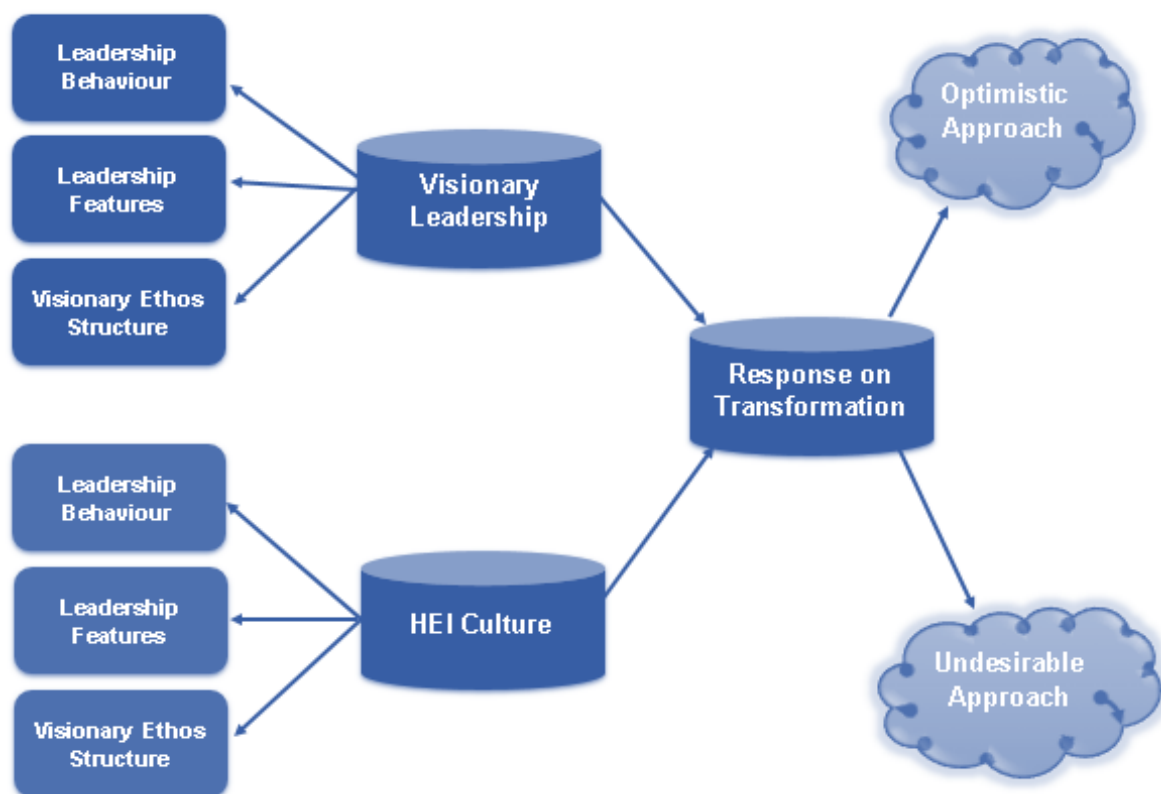
RESULTS AND DISCUSSION

Qualitative Exploration Consequence

The outcomes of the interviews may be summed up as follows:

The senior official of HEI responds to the recent federal strategy on Higher Education Institution Accreditation (HEIA) by recognising the significance of following the rules for the benefit of pupils, graduating individuals, and the governing body. Regardless of any difficulties that might arise, the organisation will make every effort to secure institutional accreditation.

The leader anticipates that HEIA adoption will result in greater quality goals for pupils and strengthen the university's global perspective. They think that adapting to the modifications constructively and aggressively will have a beneficial effect.

HEI would implement the "pick up the ball" technique to manage the organisational transformation, which entails proactive identification of required changes, their design and execution with qualified employees, and ongoing monitoring and evaluation of the administration. The assessment findings will subsequently be used to strengthen the new system's flaws and weak points.

Despite the following immediately pertaining to the observational findings:

➢ The present rector of HEI emits a strong sense of self-assurance, which is probably a result of her varied professional experiences in local, national, and international organisations.
➢ As seen by her weekly supply of a personal budget for staff lunches and delivery of quarterly certifying fees to those who are still waiting for them, the rector has a profound understanding and empathy for her employees. She also offers extra food for meetings in addition to what the institution officially provides.
➢ The rector has shown her ability as a change agent by implementing various internal and external improvements at HEI. Her well-known status in the Maharashtra region has also contributed to the university's increased visibility among other institutes of higher learning and governmental organisations.
➢ The university has undergone major transformations thanks to the rector's leadership, including enhancements in education, scholarship, and community service; fulfilment of lecturer-student ratios; growth in academic positions and the number of faculty members with doctorates; and better physical facilities.

Future-focused thinking and innovation: The Chancellor's mother's life lessons have given her a lot of creativity when it pertains to increasing the quality and advancement of HEI. She offers creative answers to issues that develop inside the company, such as motivating instructors who have trouble with scientific assignments by sharing inspirational tales that encourage them to triumph over their challenges.

Role modelling and inspirational leadership: As a highly ranked leader, the Chancellor inspires her staff, especially when it comes to their active engagement in critical, time-sensitive duties. She intervenes personally to provide direction and assistance to her staff members, ensuring that they successfully, swiftly, and precisely execute their jobs.

Analytical thinking as well as problem-solving abilities: The Chancellor has the capacity to successfully address the organisation's strategic difficulties thanks to methodical, strategic, and smart thinking abilities developed through time. She sets priorities for strategic issues and makes sure that tasks are carried out methodically. Any problems are dealt with in an intelligent and timely manner.

The effect of visionary leadership on followers: The Chancellor's leadership has significantly impacted her followers, increasing staff motivation and creating a stronger sense of loyalty to HEI as a whole. Loyalty and engagement among employees at work have increased as a result, and a friendly environment that encourages informality and companionship has been created. These elements have helped to create a workforce that is more effective, productive, and committed to promoting the organisation's goals and objectives.

Quantitative Study Outcome

Dependability and validity of the questionnaire: The dependability of the survey used to gather data is shown by the Pearson correlation coefficients exceeding 0.3 for each question. The Cronbach's alpha rating for every question over 0.6 further supports the questionnaire's dependability.

Path coefficients and R square (R2): Path coefficients are used to assess the influence of organisational culture and visionary leadership on responsiveness to change, the dependent variable. The computed values for these coefficients are shown in Figure 2.

How visionary leadership affects how people react to change: With a t value of 4.012 > 1.96 (t table), the relationship between visionary leadership and the response to change has an impact of 0.315 and is statistically noteworthy. As a result, the response to change will rise by 0.315 when the value of visionary leadership grows by one unit.

Organisational culture's effect on how people react to change A t value of 6.900 > 1.96 (t table) indicates that the relationship between organisational culture and response to change is statistically significant and has a value of 0.676. As a result, the response to change will rise by 0.676 when the value of organisational culture improves by one unit.

The square root of R is (R2): The uncorrelated variables of visionary leadership and organisational culture may account for 72.8% of the variation of the dependent variable, Responding to Transformation," according to the R square value of 0.728. Other factors not covered by this research must be used to account for the remaining 27.1%.

The t values are Under the given circumstances; the t-observations principles will be utilised as parameters for the hypothesis testing.

With a value of 0.316, visionary leadership has a favourable impact on the response to change. Given that the t-value (to) of 4.012 is higher than the threshold t-value of 1.96 (t table), this impact is statistically significant. This translates to a boost of 0.315 units in Respond to Change for every unit of visionary leadership that is added.

With a coefficient of 0.676, organisational behaviour also has a favourable impact on the response to change. Due to the fact that the t-value (to) of 6.900 is higher than the crucial t-value of 1.96 (t table), this impact is likewise statistically significant. In other words, a change in organisational culture leads to a change in the response to change of 0.676 units for every unit increase.

With an R-squared of 0.728, it is clear that the uncorrelated variables of visionary leadership and organisational culture can account for 72.9% of the variation in the response to change.

Other variables beyond the scope of this research are responsible for the remaining 27.1% of the variation.

The t-values derived from the data will be used for testing hypotheses. These numbers, which are acquired under certain circumstances, are crucial in establishing whether or not the study's findings are statistically significant.

Refuse H0 and approve H1 if the t observations are greater than the t table.
Approve H0 and refuse H1 if the t observations equal the t table.

The value of the t table was calculated using a two-sided hypothesis test with a degree of freedom (DF) of n-2 or 98 (because the population sample size was 40) and a tolerance error of 5%. The t-table value that resulted was 1.96.

Hypothesis testing

The impact of visionary leadership on how people react to change
H0: The visionary leadership has no discernible impact on the transformational responses.
H1: Visionary Leadership Substantially Influences the Transition's Responses

Utilise the following guidelines:

Refuse H0 and approve H1 if the t observations are greater than the t table.
Approve H0 and refuse H1 if the t observations equal the t table.

The null hypothesis (H0) asserts that there is no discernible impact of visionary leadership on the reaction to change. The alternative hypothesis (H1) contends that visionary leadership has a substantial impact on how people respond to change. We reject H0 and accept H1 because the observation's t value, which is 4.012, is higher than the t table value, which is 1.96. Therefore, it can be said that visionary leadership has a big impact on how people react to change.
b) How organisational culture affects how people respond to change

The null hypothesis (H0) claims that organisational culture has no discernible influence on the response to change. The alternative hypothesis (H1) contends that organisational culture has a substantial impact on the response to change. We reject H0 and accept H1 because the t value from the observation is 6.900, which is higher than the t table value of 1.96. Therefore, it can be said that organisational culture has a big impact on how people react to change.

Validity and Reliability of the Model: Several variables may be used to evaluate the reliability and validity of the research model. In this instance, the X1, X2, and Y variables' Cronbach's alpha, composite reliability, and community values are all greater than 0.6, demonstrating the validity and reliability of the model.

Inference of Hypothesis

 The research demonstrates that organisational culture and visionary leadership have a major impact on how people respond to change. Based on the results of Cronbach's alpha, composite reliability, and community, the study's model is valid and dependable. However, it is crucial to

keep in mind that the remaining 0.270 of unresolved variation in the R square value suggests that there may be more variables not included in this study that also influence the outcome of transformation.

TABLE I. Validity & Reliability Of The Paradigm

	Composite Reliability	Cronbach's Alpha	Communality
x1	0.893	0.823	0.738
x2	0.910	0.851	0.770
Y	0.757	0.796	0.714

DISCUSSIONS

By generating and expressing present-day desires and expectations, visionary leadership is characterised by its capacity to motivate followers to make a commitment to a better future [8]. The HEI's rector has shown this skill by being empathic and sensitive to the needs of subordinates. The rector has been successful in inspiring employees to finish the job at hand, notably in completing the HEIA form, by presenting the organisation's vision, purpose, and objectives in a distinctive, family-oriented manner and taking into consideration the hearts of subordinates. The community of educators at HEI has been inspired, and their work ethic has grown as a result of this.

A visionary leader additionally has to be able to transform his or her ideas into workable plans, objectives, and goals. The organisation won't benefit from the vision if it is absent. The HEI's rector has successfully translated and put into practise his ideas in a way that is suitable, stylish, and family-friendly. Positive effects have been obtained, and the stiff and formal work environment has been changed into an accommodating and unstructured one that has increased employee job productivity.

Another crucial trait of a visionary leader is empathy [7]. The rector of the HEI has adopted a personal strategy that demonstrates her understanding of subordinates by arranging lunch, providing refreshments during meetings, and allocating allowances to others. Empathy for your employees has motivated them to work hard and achieve their goals.

CONCLUSIONS

According to the study's results, it can be said that the rector of HEI has shown visionary leadership in a special and efficient way, leading to favourable consequences for those who teach at HEI. Under the present administration, HEI has gained more public awareness, with several regional and national organisations praising its development. The HEI academic community now has an optimistic outlook on the future thanks to its visionary leadership.

Furthermore, the research has demonstrated that visionary leadership has a significant impact on how people react to change. Although change is inevitable, organisations can successfully navigate it with the aid of effective change management techniques. Visionary leadership is essential to enabling an effective reaction to the quality standard changes in education, which have both quantitative and qualitative effects on organisational changes.

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Financial Reporting for Environmental Issues

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Abstract:
This paper presents the research on how accounting techniques can be developed for environmental issues. Here researcher has tried to find out the solutions with the help of following questions:
What does an environment mean to us? How does it help us in our living? How do we disturb environment from doing so? What is its impact on environment? How does it affect on our living? How can we measure costs of these effects? What are the techniques to reduce these costs? How can environmental accounting be one of the techniques? How to define Assets and Liabilities in Environmental Accounting? How should be its reporting?
The analysis took as a starting point the standard accounting system followed by innovations in accounting system. As we all know traditional accounting system is responsible for only generation of profit out of the cost incurred for the same. Hence most of the industries try to earn more to show their healthy position to the investors. Here they neglect employee values and environmental values. This results in unhealthy society and environment at large. It results in the research in HR Accounting and Environmental Accounting.

Section I: Introduction

> *"Vrukshavalli amha soyare vanachare, pakshi hi susware alavitee"*
>
> Saint Tukaram

"Interest is growing in modifying national income accounting systems to promote understanding of the links between economy and environment." [1]

The quotes mentioned above very well define the subject of the research work. The first one is by Saint Tukaram, who told us the importance of nature conservation through his poems (*Abhang)* around 400 years back. We also can find the same from *Dnyaneshwari* written by Saint Dnyaneshwar. According to him, before constructing a town we need to build up forests so that we can live a healthy life.
In this changing era of global economy, it is very important for us to know the changing economic trends and its effect on the environment. As every organization, from accounting perspective, is aiming to earn more and more profit, actually from economic perspective they are trying to make satisfactory profit. The former has concern with short term business activity whereas latter has concern with long term existence. Now the question that every organization asks themselves is what all things they need to consider while planning for their business activities so as to make satisfactory profit. The expected answers may be keeping price low, quality control, employee satisfaction, after sales service etc. Here we think primarily about our responsibility towards customers and then our employees. But one important factor we normally forget which directly or indirectly help us in achieving our organizational goal. That is Environment. We can not achieve our goals without the help of nature and environment. So we need to identify our responsibility toward environment and also show their effect in our financial statements. Here the need comes for Environmental Accounting.

Before the discussion begins for environmental accounting, firstly we need to know the basic concepts of accounting.

B) Existing Branches of Accounting:
1. Financial Accounting
2. Cost Accounting
3. Management Accounting

C) Upcoming branches of accounting:
1. HR Accounting
2. Environmental Accounting

HR Accounting: It deals with the accounting of Human Resource that every organization has or need to perform the activities of an organization to achieve the desired goal.

Environmental accounting (EA):
It is a systematic study of the relation between organizational structure and the environmental costs and implementation of the strategies so as to bring equality in the costs of these two.

One may define EA, in simple words, as a process of assigning liability towards environment and suggesting/finding and implementing solutions to convert liability in to assets. "Mechanism that enable enterprises to measure, analyze, and announce the cost for environmental conservation in business activities and the effects quantitatively (monetary units or physical quantity units) as much as possible - effects that were achieved by the activities - for promoting the tackling of environmental conservation efficiently and effectively while maintaining the friendly relationship with the society in order for sustainable development." It defines the important elements which are necessary in the accounting can be identified. Those may be environmental costs and its effective measurement in monetary terms. These costs and its measurement are discussed in section II (E) and Section III (A) respectively. Now let us see how the need for accounting of environmental issues comes in the picture.

Section II: Origin of the research problem

Whenever we talk about environment the discussion begins with Water. Let us discuss water cycle/ water vapour cycle first.

A) Water cycle:
  The Earth's water is always in movement, and the water cycle, also known as the hydrologic cycle, describes the continuous movement of water on, above, and below the surface of the Earth as shown in the figure 3 above. Since the water cycle is truly a "cycle," there is no beginning or end. Water can change states among liquid, vapour, and ice at various places in the water cycle, with these processes happening in the blink of an eye and over millions of years. Although the balance of water on Earth remains fairly constant overtime, individual water molecules can come and go in a hurry, but there is always the same amount of water on the surface of the earth. [2]

B) Nature cycle: This cycle is related to the various seasons. In India there are three seasons- summer, monsoon and winter each having four months duration one after another.
  Still these cycles are there but its duration has changed over the time. In India water vapour cycle takes around one year to complete. i.e. every year we expect Monsoon on 7th June and ends in October. But in recent years, picture has changed. We can not assume the same period for Monsoon. Also on one year we face heavy rain fall and on another no rain at all.

Why this change has occurred? Who is responsible for it? How we can cope up with this? Is there any solution to bring this cycle back? We need to be very serious to find out the answers of these questions.

C) Reasons for change in the cycle

Throughout early history, life on Earth existed in a natural environment with abundant water supplies from rain, unpolluted springs, streams, rivers and wells. Water was relatively pure, containing only moderate amounts of naturally occurring substances. Since the Industrial Revolution, and especially since World War II, we have dumped all kinds of chemicals into the environment, almost universally contaminating our precious, life-sustaining water supplies. The function of water is impaired when these toxic chemicals are introduced into our system. Our health declines as our body becomes a chemical cesspool.

If we think the water we are drinking is just H2O, there is need of thinking it again. According to some studies, an astonishing 75,000 chemical compounds have been found in our water, yet the EPA has established enforceable safety standards for only 87. Many of these chemicals are potentially harmful and can spawn health problems. According to the Center for Disease Control in Atlanta, nearly one million people get sick from drinking contaminated water each year with about 1,000 cases tragically ending in death. [3]

Human activities that alter the water cycle include:
  i. agriculture
  ii. alteration of the chemical composition of the atmosphere
  iii. construction of dams
  iv. deforestation and afforestation
  v. removal of groundwater from wells
  vi. water abstraction from rivers
  vii. urbanization (industrialization, creating infrastructure and other comfort products)

D) Effects of change in the cycle on climate

The water cycle is powered from solar energy. 86% of the global evaporation occurs from the oceans, reducing their temperature by evaporative cooling. Without the cooling effect of evaporation the greenhouse effect would lead to a much higher surface temperature of 67°C, and a warmer planet.[4]

E) Price of pollution and Costs for human being due to these changes:

A study on price of pollution in India made by World Bank officials for 1992 (M. Balachandran 2002) shows the impact of the major problems in terms of cost. They have calculated that damage environment costs India about Rs. 34,000 cr per year, about 9.5 per cent of gross domestic product. [5]

Environmental Expenditures/Costs: "Environmental costs are actual expenses incurred by industries, households and the government to avoid environmental degradation or to eliminate the effects after degradation has taken place. They include all those goods and services that are, or are used as, an immediate response to environmental degradation caused by production units, government and households. They do not cover activities included to mitigate effects borne, in particular by households". [6] Environmental Expenditures/Costs are those costs which incurred to protect the environment or natural resources like water, air, land and atmosphere. It also includes the cost for physical as well as psychological destruction of living creatures. These costs may incur after or before the effect (destruction) take place. We can classify these costs in to following categories as per their nature.

1. Pre-costs: It includes the costs which help in preventing us from all such destructions. Here we assume the costs well before its occurrence and we make the necessary arrangements to protect the

environment. E.g. installing water purifier, plantation and equipments to reduce noise/vibration and air pollution etc.

2. **Post-costs**: It includes those costs which have incurred in anticipation of the incurred environmental losses due to the organizational/human activities e.g. government funds the farmers due to natural disasters, Social campaigning after knowing the environmental and psychological destructions etc. Further we can classify these costs as per their useful life which, again, is going to help us in their accounting effects.

3. **Capital expenditure:** These are the expenses, the benefit of which is derived over number of years. E.g. installing water purifier, plantation and equipments to reduce noise/vibration and air pollution etc.

4. **Revenue expenditure:** These are the expenses, the benefit of which is derived during an accounting period. E.g. social campaigns, depreciation on the capital assets etc.

5. **Deferred revenue expenditure:** These are the revenue expenses but the benefit of it is derived over few accounting years. E.g. Research and development expenses, huge social campaigning etc.

F) Who is responsible?

The answer of above question can better explained with the help of the following cycle.

1. We Try to earn more money to satisfy our needs
2. We Try to reduce cost
3. We use cheap and less costly inputs to reduce cost of production
4. We use shortcuts to get work done as quick as possible
5. Water waste, air pollution, noise pollution etc.
6. Unhealthy atmosphere (water, air, food etc.)
7. Increase in physical as well as psychological deceases
8. Increase in medical expenses
9. Increasing insurance and other health/risk related expenses
10. We need more money as our expenses increased

And cycle continues…….

Section III: Accounting for Environmental Issues

A) Defining liability toward environment…..Process:

1. **Study of external environment (nature):** Every organization need to study the nature. As everyone thinks what they can get from the nature, we need to think what we are giving to the nature. We need to see whether sufficient greenery is available to absorb the air pollution as well as water waste. For such analysis study of environmental science is required.

2. **Study of internal environment (process, layout etc.):** Internal environment includes the employees, organizational structure, plant layout and the processes. Creating healthy work conditions is as important as earning profit. Making employees aware about their responsibility toward environment as well as deciding proper layout to carry all processing efficiently will lead to reduce the wastes.

3. **Study of kinds of harmful elements:** Every organization should conduct the in-depth study to know the existing as well as possible harmful elements which are been used during the production process and which comes out with the finished product, may be as a part of it or as a waste. Here studying the amount of these elements is very important factor.

4. **Comparing those with the environmental arrangements/assets:** Once we come to know the harmful elements and the amount of their output, we need to compare those elements with the external as well as internal environment to know the discrepancy/ variance.

5. **Computing variance:** in environmental accounting variance means the discrepancy between the environmental arrangements/assets and the total output of harmful elements. If former is more than the later the difference will be known as favorable variance. This also may be treated as idle Asset.

In opposite condition the result will be adverse variance which in turn will be treated as our Liability toward environment.

E.g. A manufacturing unit's output (harmful elements) is CO_2 and the amount of output is 1000 units per day. Now the environmental arrangements needed are plants that can absorb this much CO_2. The existing arrangement includes 700 trees which are expected to absorb 700 units @1unit of CO_2 per tree per day. Here the variance of 300 units is the net environmental liability (NEL) of that organization and to reduce it, they need to make arrangement of 300 trees.

In other case suppose for same level of output (harmful elements), arrangement of 500 trees is there which can absorb 1500 units @3 units of CO_2 per tree per day. Here the variance of 500 units is the net environmental Asset (NEA) which can be expressed in terms of trees as 500/3=167 trees.

B) Selecting proper strategy/ies

We can adopt the following strategies to reduce the environmental liability.

1. **Changing location:** If existing location of an organization is not extendable to create sufficient environmental arrangements that organization may reduce its liability by shifting the unit to the place where these arrangements exists or there is scope for its creation.
2. **Changing Plant layout:** If there is waste due to improper material handling or improper plant layout, organization need to make certain changes in it.
3. **Changing Product/ product-mix:** Every organization produces multi-products. If any product is harmful to the living creatures in the long run, organization need to stop the production of such product and try to find out better and healthy alternative.
4. **Defining Input alternative:** This is very important strategy among all. As discussed earlier, the main problem begins with human desire to earn more and to make more profit. To achieve it, we try to use cheap and less costly inputs to reduce the cost of production. As a result output of harmful elements increases. This, in turn, increases our liability. So we need to select best alternative which will reduce such liability.
5. **Training:** It can reduce the waste and output of harmful elements due to improper material handling, casual working. So training at regular intervals is required.
6. **Creating assets:** It means to make environmental arrangements/assets.

   This includes:

   Water pollution- installing water purifier and waste water treatment facilities for water waste, Air pollution- plantation, catalytic converters, Noise/vibration- equipments, Land- construction work for nature conservation, land reclamation, land improvement and erosion control.

   Here plantation plays and important role in reducing pollution. Everyone should prefer this alternative because it is a natural source. Few trees like Banyan tree *(Kalpvruksha)* and *Kagzi* lime *(Kadu-limb)* and *Tagitus erecta (Zhendu)* for clean and healthy atmosphere as these trees have more capacity to absorb CO_2.

   Computation of assets will be as mentioned in computation of variances.
7. **Social cause campaigning:** For the organization who are in the production of habitual products e.g cigarettes, tobacco, alcohol or even tea and soft drinks, it is necessary for them to do social campaigning to create awareness about the effects of their product on our health. Social campaigning doesn't only mean to print warnings on the packing of the product but to create awareness among those who are not using these products.

Section IV: Financial Reporting

Following things are important while reporting the results of environmental accounting

1. All equipments purchased to reduce environmental destruction should be shown as fixed asset at its book value less/add depreciation/appreciation. Its capacity to reduce environmental destruction, in monetary terms, should be shown in inner column. This means if an asset is purchased for Rs.10,00,000 less annual depreciation of Rs. 1,00,000 equals Rs.9,00,000 should be shown in outer column and the monetary value of its annual capacity in terms of protecting environment from destruction is Rs. 2,00,000 should be shown in inner column. The value of this capacity installed is shown in the table 1 with the '####' sign. Asset Appreciation is applicable only for trees (plantation) which have planted for the purpose of protecting environment.

2. All environmental costs can be measured in monetary terms based on the environmental destruction and that will be shown as liability. Here the calculation of net environmental liability (NEL) will be:

NEL= Annual Environmental cost – Annual capacity installed

LIABILITIES	AMT	AMT	ASSETS	AMT	AMT
OWNER'S EQUITY			**FIXED ASSETS**		
Share capital		xxxx	Land and Building		xxxx
Reserves and surplus		xxxx	Machinery		xxxx
			Furniture		xxxx

Here annual capacity installed means the value of the assets which we are showing in inner column. If the answer is positive then one effect should be, showing it as liability and second effect should be at debit side of Profit and loss account. If it comes negative it should be shown as an indirect gain in Profit and loss account and second effect should be, showing it as additional asset in balance-sheet.

3. For revenue expenditures like social cause campaigning, advertisements etc. effects should be on debit side of Profit and loss account

4. For deferred revenue expenditures like R&D, heavy advertisement, expenses at primary stage (preliminary expenses) etc. the balance amount should be shown in the balance sheet asset side under the head Miscellaneous Expenses and the amount written-off should be shown at debit side of Profit and loss account.

Balance-sheet as on 31st March _____.

			Equipments for:		
OUTSIDER'S LIABILITY			Water conservation	####	xxxx
			Chemical impact reduction	####	xxxx
			Pollution control	####	xxxx
Loan: Secured	xxxx				
Unsecured	xxxx	xxxx			
Net Environmental Liability			**INVESTMENTS**		xxxx
Water waste	xxxx				
Chemical waste	xxxx				
Pollution	xxxx				
Psychological effects	xxxx	xxxx			
CURRENT LIABILITIES		xxxx	**CURRENT ASSETS**		xxxx
			MISCELLANEOUS EXP.		xxxx
Total		**xxxxxx**	**Total**		**xxxxxx**

Table 1. Financial Reporting

Section V: Discussion

Though study is going on from last 20 years on the same issue, the implementation part is lacking.

(i)International Status: The focus on the corporate or business entity makes corporate environmental accounting different to the environmental accounting undertaken by organizations, such as the *Australian Bureau of Statistics,* which attempt to develop monetarised and physical statistics on the state of environmental and natural resource assets at the regional or national level.

Corporate environmental accounting is an emerging and dynamic field. Internationally, the *United Nations Division for Sustainable Development*, national governments, professional accounting bodies and leading companies are undertaking a range of corporate environmental accounting initiatives. Most of these initiatives have to date looked at the area of *Environmental Management Accounting.*

For most environmentally conscious companies an environmental audit is very important. The concept was first developed in the United States where corporations, through Environmental Accounting (EA), used to check on compliance with environmental laws (Cairncross, 1992). After the Bhopal disaster these corporations were anxious to ensure that their overseas subsidiaries met the same standards as their parent corporation. American multinationals started to audit abroad since then. In Europe, environmental liabilities are less severe and companies see environmental auditing as a way of discovering how they could improve their environmental performance as to demonstrate their environmental responsibilities to the outside world.

ISO 14000 is a family of standards related to environmental management that exists to help organizations (a) minimize how their operations (processes, etc.) negatively affect the environment (i.e., cause adverse changes to air, water, or land); (b) comply with applicable laws, regulations, and other environmentally oriented requirements, and (c) continually improve in the above.

The **Global Reporting Initiative** (GRI) is a non-profit organization that promotes economic sustainability. It produces one of the world's most prevalent standards for sustainability reporting — also known as ecological footprint reporting, environmental social governance (ESG) reporting, triple bottom line (TBL) reporting, and corporate social responsibility (CSR) reporting. GRI seeks to make sustainability reporting by all organizations as routine as, and comparable to, financial reporting.

(ii)National Status: In India, Gazette Notification on Environmental Audit has been issued by the Ministry of Environment & Forests on 03.03.1992 (Amended vide Notification GSR 386 (E) dated 22.04.1993). Also, Companies Bill, 1997 Section 173 had proposed that every company should disclose, through its Board of Directors' Report, the measures taken for protection of environment. But the practice has not yet become popular as it's not mandatory in India. Then also few Indian companies, who are players in international market, vis. TISCO, ITC and few others, have been conducting EA periodically.

ITC Limited: ITC has been 'Carbon Positive' nine years in a row (sequestering/storing twice the amount of CO_2 than the Company emits). It also has been 'Water Positive' twelve years in a row (creating three times more Rainwater Harvesting potential than ITC's net consumption). Close to 100% solid waste recycling for the last seven years. 38% of ITC's total energy consumption is from renewable sources. ITC's Social and Farm Forestry initiative has greened 1,63,000 hectares. All Environment, Health and Safety Management Systems in ITC conform to the best international standards. [7]

Though companies are taking initiatives, it is the fact that most of the companies disclose the environment information in descriptive manner rather than to financial type i.e. no account is made for the degradation of natural capital when calculating corporate profits. Here we may require government intervention to make environmental accounting compulsory to all organizations and further to the households as well. This is the only solution we may get to make our beloved Earth happy again.

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Management Perspectives on changing Socio Economic Environment: Vision and Challenges for the Women

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Abstract: This paper attempts to analyze the status of Women Empowerment in India and highlights the Issues and Challenges of Women Empowerment. Today the empowerment of women has become one of the most important concerns of 21st century. But practically women empowerment is still an illusion of reality. We observe in our day to day life how women become victimized by various social evils. Women Empowerment is the vital instrument to expand women's ability to have resources and to make strategic life choices. Empowerment of women is essentially the process of up liftmen of economic, social and political status of women, the traditionally underprivileged ones, in the society. It is the process of guarding them against all forms of violence. The study is based on purely from secondary sources. The study reveals that women of India are relatively disempowered and they enjoy somewhat lower status than that of men in spite of many efforts undertaken by Government. It is found that acceptance of unequal gender norms by women are still prevailing in the society. The study concludes by an observation that access to Education, Employment and Change in Social Structure are only the enabling factors to Women Empowerment.

Keywords: Women Empowerment, Social Structure

Introduction:

Across the different India regions women have stood up to take important roles in the socio economic development of their societies. The contribution made by Indian women in the provision of both financial and social facilities is equal.

Empowerment of women is a socio –political ideal envisioned in relation to the wider framework of women's rights .It is a process that leads women realize their fun potential their rights to have accesses to opportunities by their recourses and choice with the achieved only when advancement in the conditions of women is accompanied by their ability to influence the direction of social change gained through equal opportunities in economic social and political spheres of life.

Increasing the number of women entrepreneurs involved in starting new business. In addition to their economic and income generating activities, women assume multi faceted roles in society.i.e. As bread winner of a family, unpaid family workers, service providers in the communities and mother \care taker

of the family, In spite of their important contribution to socio economic development, women suffer from various constraints. Which inhabit them from fully realizing their potential for development?

The Indian society believes that no matter how well a woman works .She can't be consider as being equal to a women. The historical background of Indian society reveals that in Vedic times a woman was given a high status. It is an old saying "Where women are honored gods reside there. She knew as Arandhangini one half of husband's body". Women constitute almost 50% of the world's population but India has shown disproportionate sex ratio whereby female's population has been comparatively lower than males. As far as their social status is concerned, they are not treated as equal to men in all the places. In the Western societies, the women have got equal right and status with men in all walks of life. But gender disabilities and discriminations are found in India.

Even today. The paradoxical situation has such that she was sometimes concerned as Goddess and at other times merely as slave.

'The global community must renew its attention to women's economic empowerment and increase investments in women…Increased women's labour force participation and earnings are associated with reduced poverty and faster growth; women will benefit from their economic empowerment, but so too will men, children and society as a whole…'. **(World Bank's Gender Equality Action Plan 2007-10)**

1. **Objective of :-**
   ❖ To study role of women contribution of Social or Economic changes.
   ❖ To study analyze the factors influencing the economic empowerment of women.

3. Research Methodology:-

An analytical method is used for conducting the study. The study is based on primary data collection consist of originally collective information for specific purpose at hand by interviewed people it is the first hand information journals, books, periodicals, newspapers and websites. The data and information have been arranged logically in order to draw certain conclusions.

"It is impossible to think about the welfare of the world unless the condition of women is improved. It is impossible for a bird to fly on only one wing".

Swami Vivekananda.

India's vision of women's empowerment

The vision and mission of CARE India guide us towards our goal of overcoming poverty, and ensuring a life of dignity and security for the marginalized populations. We focus on women and girls to enable

them to realize their rigths, avail resources and opportunities, fight social injustice, develop leadership capabilities and build a better future for them.

4. **Why Need of Women Empowerment?**

Reflecting into the "Vedas Purana" of Indian culture, women are being Worshiped such as LAXMI MAA, goddess of wealth; SARSWATI MAA, for wisdom; DURGA MAA for power. The status of women in India particularly in rural areas needs to address the issue of empowering women. About 66% of the female population in rural area is unutilized. This is mainly due to existing social customs. In agriculture and Animal care the women contribute 90% of the total workforce. Women constitute almost half of the population, perform nearly 2/3 of its work hours, receive 1/10th of the world's income and own less than 1/ 100ththe world property. Among the world's 900 million illiterate people, women out number men two to one. 70% of people living in poverty are women. Lower sex ratio i.e. 933, the existing studies show that the women are relatively less healthy than men though belong to same class. They constitute less than 1/7th of the administrators and mangers in developing countries. Only 10% seats in World Parliament and 6% in National Cabinet are held by women.

5. Need for Women Empowerment: Women are deprived of

> Access to Education
> Access to Employment
> Freedom of Movement
> Exposure to Media
> Domestic Violence
> Decision Making Power

Table no: 1

S/N	Name	Percentage
1	Women decide themselves	22%
2	Women decide jointly with their husband	71%
3	Husband/father/Brothers	4%

	& others decide for them	
4	Any other family members decided	2%
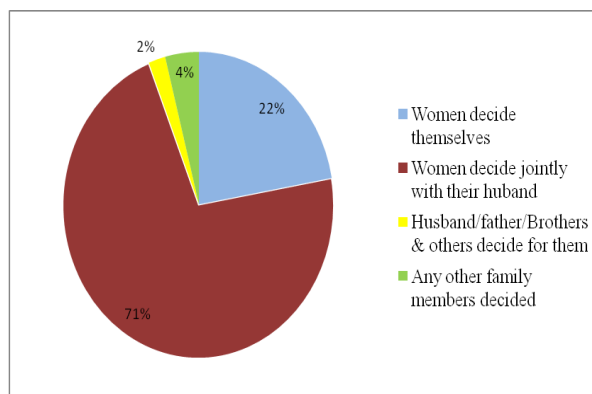
Chart No: 1 Decision Making Powe

6. Ways to Empower Women:

- Changes in women's mobility and social interaction
- Changes in women's labor patterns
- Changes in women's access to and control over resources and
- Changes in women's control over Decision making
- Providing education
- Self employment and Self help group
- Providing minimum needs like Nutrition, Health, Sanitation, Housing
- Other than this society should change the mentality towards the word women
- Encouraging women to develop in their fields they are good at and make a career

Government Schemes for Women Empowerment:

The Government programs for women development began as early as 1954 in India but the actual Participation began only in 1974. At present, the Government of India has over 34 schemes for women operated by different department and ministries. Some of these are as follows;

1. RastriaMahilaKosh (RMK) 1992- 1993

2. MahilaSamridhiYojana (MSY) October, 1993.

3. India MahilaYojana (IMY) 1995.

4. Women Entrepreneur Development program given top priority in 1997-98.

5. MahilaSamakhya being implemented in about 9000 villages.

6. Swayasjdha

7. Swa Shakti Group.

8. Support to Training and Employment Program for Women (STEP).

9. Swalamban.

10. Crèches/ Day care centre for the children of working and ailing mother.

11. Hostels for working women.

12. Swadhar.

13. National Mission for Empowerment of Women.

14. Integrated Child Development Services (ICDS) (1975),

15. Rajiv Gandhi Scheme for Empowerment of Adolescence Girls (RGSEAG) (2010).

16. The Rajiv Gandhi National Crèche Scheme for Children of Working Mothers.

17. Integrated Child Protection scheme (ICPS) (2009-2010).

18. Dhanalakahmi (2008).

19. Short Stay Homes.

20. Ujjawala (2007).

21. Scheme for Gender Budgeting (XI Plan).

22. Integrated Rural Development Program (IRDP).

23. Training of Rural Youth for Self Employment (TRYSEM).

24. Prime Minister's RojgarYojana (PMRY).

25. Women's Development Corporation Scheme (WDCS).

26. WorkingWomen's Forum.

27. IndiraMahila Kendra.

28. MahilaSamitiYojana.

29. Khadi and Village Industries Commission.

30. IndiraPriyadarahiniYojana.

31. SBI'sSreeShaki Scheme.

32. SIDBI'sMahilaUdyamNidhiMahilaVikasNidhi.

33. NGO's Credit Schemes.

34. National Banks for Agriculture and Rural Development's Schemes

7. Challenges

There are several challenges that are plaguing the issues of women's right in India. Targeting these issues will directly benefit the empowerment of women in urban area:

❖ **Education:**

While the country has grown from leaps and bounds since independence where education is concerned. the gap between women and men is severe. While 82.14% of adult men are educated, only 65.46% of adult women are known to be literate in India. The gender bias is in higher education, specialized professional trainings which hit women very hard in employment and attaining top leadership in any field.

❖ **Poverty:**

Poverty is considered the greatest threat to peace in the world, and eradication of poverty should be a national goal as important as the eradication of illiteracy. Due to this, women are exploited as Domestic helps.

❖ **Health and Safety:**

The health and safety concerns of women are paramount for the wellbeing of a country
And is an important factor in gauging the empowerment of women in a country. However there are
Alarming concerns where maternal healthcare is concerned.

❖ **Professional Inequality:**

This inequality is practiced in employment sand promotions. Women face countless handicaps in male customized and dominated environs in Government Offices and Private Enterprises. Ask the women's for the professional or family support: Support for balance between work & non work activities given by

Table no: 2 Support to working / Professional women

S/N	Name	Percentage
1	Spouse/ Partner	70%
2	Friends	15%
3	Other Family members	7%
4	Others	2%
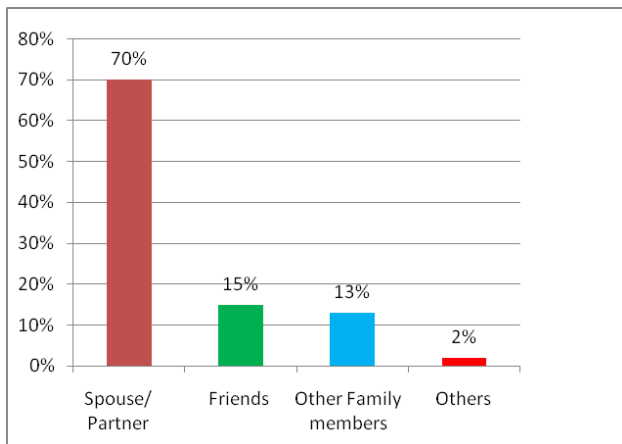
Chart No: 2 Support to working / Professional women

❖ **Morality and Inequality**:

Due to gender bias in health and nutrition there is unusually high mortality rate in women reducing their population further especially in Asia, Africa and china.

•

• **Perception among women on being treated differently by their spouse or family members?**
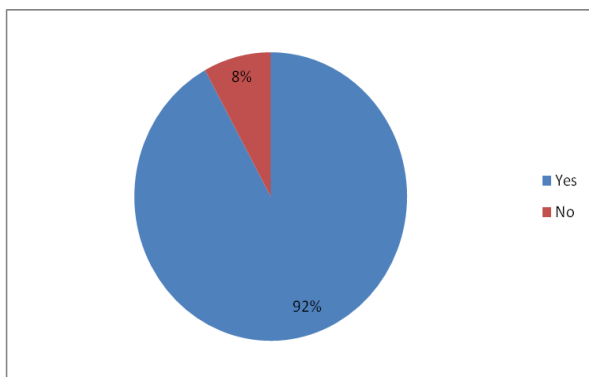
Chart No: 3 Percentage of women's treated by others.

Ask by women's which are the factors influencing of women's, treated differently by others in society.

Which problems do you think is the most important problem faced by Women's in the society?

Table no: 3 Problems faced by women's

S/N	Name	Percentage

1	Gender problem	82%
2	Freedom	7%
3	Financial Instability	8%
4	Culture	3%
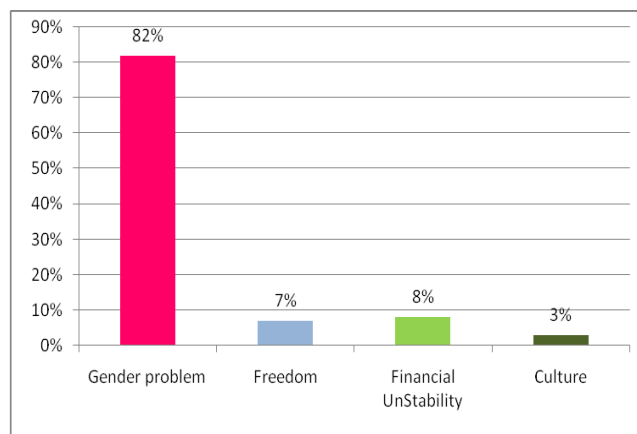
Chart No: 4 Problems faced by women's

❖ **Household Inequality:**

Household relations show gender bias in infinitesimally small but significant manners all across the globe, more so, in India e.g. sharing burden of house hold inequality.

8. Constitutional Provisions for Empowering Women in India:

❖ Equality before law for all persons (Article14)

.

❖ Prohibition of discrimination on grounds of religion, race, caste, sex or place of birth (Article 15(I).However, special provisions may be made by the state in favors of women and children Article 15(3)

.

❖ Equality of opportunity for all citizens relating to employment or appointment to any office under the state (Article 16)

.

❖ State policy to be directed to securing for men and women equally the right to an adequate means of livelihood (Article 39(a); (v) equal pay for equal work for both men and women (Article 39(d)

.

- ❖ Provisions to be made by the state for securing just and humane conditions of work and maternity relief (Article 42)

.

- ❖ Promotion of harmony by every citizen of India and renouncement of such practices which are derogatory to the dignity of women Article 51A(e)

.

- ❖ Reservation of not less than one third of total seats for women in direct election to local bodies, viz;
- ❖ Panchayats and Municipalities (Articles 343(d) and 343 (T).

9. Findings of the Study

1. Globalization, Liberalization and other Socio-Economic forces have given some respite to a large Proportion of the population. However, there are still quite a few areas where Women empowerment in India is largely lacking.

2. There needs to be a sea –change in the mind set of the people in the country. Not just the women Themselves, but the men have to wake up to wake up to a world that is moving towards equality and equity. It is better that this is embraced earlier than later for our own good.

3. There are several Government programs and NGOs in the Country, there is still a wide gap that exists between those under protection and those not.

4. Poverty and illiteracy add to these complications, The Empowerment of Women begins with a guarantee of their health and safety.

5. Empowerment of Women could only be achieved if their economic and social status is improved. This could be possible only by adopting definite social and economic policies with a view of total development of women and to make them realize that they have the potential to be strong human beings.

Conclusion

Indian women play an important role in initiating socio economic progress of the country .the hand that rocks the cradle rules the world women should be empowered so that they can lead to glory.

Our women entrepreneurs' Social welfare works scientist, politicians & economist are leading the way for a bright future .Women in urban & rural areas should be given access to good opportunities so that they can bring about to the growth of the country bring about positive social change & contribute to the growth of the country.

Women play crucial role in initiating the advancement & growth of any society in nations across the world. India

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ption to this rule.

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A Study on Mutual Fund with Respect to Investors Portfolio Management

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Abstract:

This study aims to provide a comprehensive understanding of the multifaceted relationship between mutual fund and portfolio management. It explores the different type of mutual fund available, ranging from equity funds to fixed -income funds, and examines how they can be strategically integrated into investor portfolios. Additionally, it investigates the performance of mutual fund in varying market conditions, shedding light on their ability to mitigate risk and enhance returns. Furthermore, is research delves into the impact of investor behavior on mutual fund performance and portfolio management. Behavioral biases, such as herding, overconfidence, and loss aversion, can significantly in players investment decisions. Understanding how these biases manifest within mutual fund investment and their consequence on portfolio outcomes is a critical aspect of this study.

The objective of this research encompasses through analysis of mutual fund dynamics including their historical performance, risk factors, and the alignment of mutual fund strategies with investors long term goals. Additionally, it seeks to identify best practices in incorporating mutual fund within a diversified portfolio, optimizing asset allocation, and managing effectively.

Keywords: Mutual Fund, Investors, Diversified Portfolio, Investors Portfolio Management.

Introduction:

A mutual fund is just the connecting bridge or a financial intermediary that allow a group of investors to pool their money together with a predetermined investment objective. The mutual fund will have a fund manager who is responsible for investing the gathered money in the specific securities (stock or bonds). When you invest in a mutual fund, you are buying unit or portions of the mutual fund and thus on investing becomes a shareholder or unit holder of the fund.

Portfolio management's meaning can be explained as the process of managing individuals investment so that they maximum their earnings within a given time horizon. Furthermore, such practices ensure that the capital invested by individuals is not exposed to too much market risk. Investment portfolio management involves building and overseeing a selection of assets such as stock, bond and cash that meet the long-term financial goals and risk tolerance of an investor. Portfolio management requires the ability to weigh strength and weakness, opportunities and threats across the full spectrum of investment.

In today's complex financial landscape, constructing and maintaining a well-diversified investment portfolio is no trivial task. Investors face the challenge of navigating through a myriad of investment options, each with its own set of risk and potential rewards. Mutual funds offer a compelling solution to this challenge. They allow investors to pool their resources and benefit from the expertise of professional fund managers, who make informed decision about assets allocation, security selection and risk management.

Objectives of Study:

Following objectives are delineated for the study:

1. To know the various options available for investment in mutual fund.

2. To find the best option for investment in mutual fund.

3. To evaluate the various sources of investment in mutual fund.

Scope of Study:

This study helps identify the portfolio management of mutual fund investors among IRENICBIZ investors and advisors. It also provides various investment options for mutual fund customers. It helps the organization to focus on portfolio management of clients while making investment decisions and suggesting better investment strategies to maximize returns in mutual funds. IRENICBIZ deals with both trading and investment but the conceptual scope of the research is limited to the study of investment in mutual funds.

Significance of Study:

A study on mutual funds will examine the role of mutual funds in helping investors diversify their portfolios and achieve their financial goals with respect to the importance of portfolio management to investors.

Research Design:

A research design is the arrangement of conditions for collection and analysis of data in manner that aims to combine relevance to the research purpose with economy in procedure. Here for this study, research as collected data in schedule technique format from clients of IRENICBIZ investors therefore to study the mutual fund the study is mainly designed as a descriptive work based on both primary and secondary data.

Primary Data:

The primary data would be collected first hand for research purpose is data for this study, Researcher has collected the data of clients of IRENICBIZ educational services using schedule. Also while making mutual fund investment clients are discussing with proprietor for strategy and risk factors to gain maximum returns. Therefore researcher tried to analyse and find out the best for investment in mutual fund.

1. Structured schedule.

2. Discussion with Proprietor and Clients

Sample and Sample Size:

• Population:

Definition by Will Kenton, A population is the entire pool from which a statistical sample is drawn. A population may refer to an entire group of people, object, events, etc. A population can thus be said to be an aggregate observation of subjects grouped together by a common feature

Sample Unit: IRENICBIZ have 1200 clients who are doing investment on regular basis for short & long-term purpose. Therefore total population for this study is 1200

Considered for study: A sample of few respondents will be selected from differ age group, qualification and income growth of the organisation

Sample Size: As a thumb rule, is of 10% of total population (10% of 1200 is 120) Therefore Sample size is of 120 clients.

Sampling Method: Simple Random Sampling Method is used

Sample Frame: List of investors (IRENICBIZ Educational Services, Baramati)

Data Analysis & Interpretation:

The collected data is tabulated and analyzed using descriptive statistics.

Table No: 5.1 Analysis of Age

Table No: 5.1

Age(in years)	No of Respondents	Percentage
Below 30	10	8
31-40	33	28
41-50	54	45
Above 50	23	19
Total	120	100

(source: primary data)

Interpretation:

From the Table 5.1 it is found that out of the total survey of 120 clients. 45% Of investors belongs to the age group of 41-50, 28% belongs to the age group of 31-40, 19% belongs to the age group of above 50 and remaining 8% represents the age group below 30.

Table No: 5.2 Analysis of Gender

Table No: 5.2

Sex	Frequency	Percentage
Male	94	78.3
Female	26	21.7
Total	120	100

(Source: Primary data)

Interpretation:

Form the Table 5.2 it is found that the analysis of gender displays the frequency result of Gender. It is clear that majority of the investors are 78.3% are Male, 21.7% are Female, As the Financial responsibilities in India mostly rely on males.

Table No: 5.3 Analysis of Marital status

<div align="center">**Table No: 5.3**</div>

Marital Status	Frequency	Percentage
Married	92	76.7
Unmarried	28	23.3
Total	120	100

(Source: Primary Data)

Interpretation:

Form the Table 5.3 it is found the analysis of Marital Status displays the frequency results of the Marital Status of the investors are 76.7% are married, 23.3% are Single.

Table No: 5.4 Analysis of Education Background:

<div align="center">**Table No: 5.4**</div>

Education	Frequency	Percentage
SSC	06	05
HSC	16	13.3
Graduate	61	50.8
Post Graduate	24	20
Other	13	10.8
Total	120	100

(Source: Primary Data)

Interpretation:

It was found that 61 (50.8%) of the individual investors covered in the study are graduates, 24 (20%) investors are the post graduates and 22 (18.35%) of the investors are the investors are under-graduates, and 13 (10.8%) investors are categorized as others who are either illiterates, had less education than under-graduates or who are more qualified than post-graduates.

Table N0: 5.5 Analysis of Occupation:

<div align="center">**Table No: 5.5**</div>

Regular (Monthly)	Seasonal (Periodical)

Occupation	No. of Respondents	Occupation	No. of Respondents
Student	11	Non pension	02
Housewife	10	Contractual	05
Pension	14	Business	27
Salaried /Job/Professional	42	Retired	09
Total	77	Total	43

(Source: Primary Data)

Interpretation:

The above table clearly shows the investors occupation, it was noticed that out of 120 respondents. 77 (64.16%) were doing regular occupation in which 42 respondents were form Salaried/Job/Professional, whereas 43 (35.84%) were doing seasonal (periodical) occupation in which 27 respondents were from businessman.

Table N0: 5.6 Approximate investment of client in the mutual fund

Table No: 5.6

Parameter	Frequency	Percentage
Less than Rs.10,000	37	31
Rs.10,001-20,000	42	35
Rs.20,001-30,000	17	14
Rs.30,001-40000	13	11
Above Rs.40000	11	9
Total	120	100

(Source: Primary Data)

Interpretation:

The above table shows that the 35% of clients have made their investment between 10-20k of amount in the mutual fund, 31% of clients made their investments between less than 10k in mutual fund following by rest. This reveals that clients of IRENICBIZ has invested satisfactory amount in the mutual funds.

Table No: 5.7 Frequency of investment in mutual fund.

Table No: 5.7

Parameter	Frequency	Percentage
Monthly	42	35
Quarterly	28	23
Half yearly	14	12
Yearly	36	30
Total	120	100

(Source: Primary Data)

Interpretation:

Due to the busy life schedule, many of the investors are not able to spend time in monitoring their investments, only 35% of the investors are monitoring their investment monthly, 30% of the investors are monitoring on a yearly basis, 35% of the investors are monitoring their investment quarterly & half yearly. Many of them who have invested in safe investment avenues do not bother about their investments, some of them forget about the investments for many years.

Table No: 5.8 Investors purpose behind investment.

Table No: 5.8

Short term /Ongoing	Frequency	Percentage	Long term	Frequency	Percentage
Children education	15	22.4	Retirement plan	12	22.6
Children marriage	14	20.9	Wealth creation	10	18.9
Health care	12	17.9	Earn returns	09	17
Tax saving	13	19.4	Future expenses	20	37.7
Tours and travelling	13	19.4	Others	02	3.8
Total	67		Total	53	

(Source: Primary Data)

Chart No.5.8 (a)
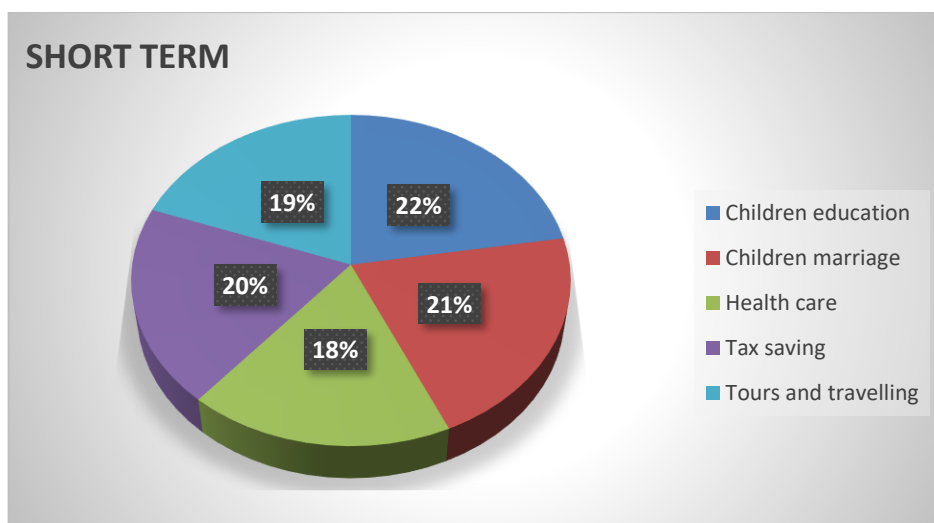
Interpretation:

The above table 5.8 (a) interprets out of 120 investors, 67 clients invest for short term. Investment in short term is more than long term. Because short term investment is important to investors. 22.4% & 20.9% clients are investing with the purpose of children education and children marriage planning 19.4% clients are investing with the purpose of tax savings and for Tours & Travelling.

Chart No.5.8 (b)
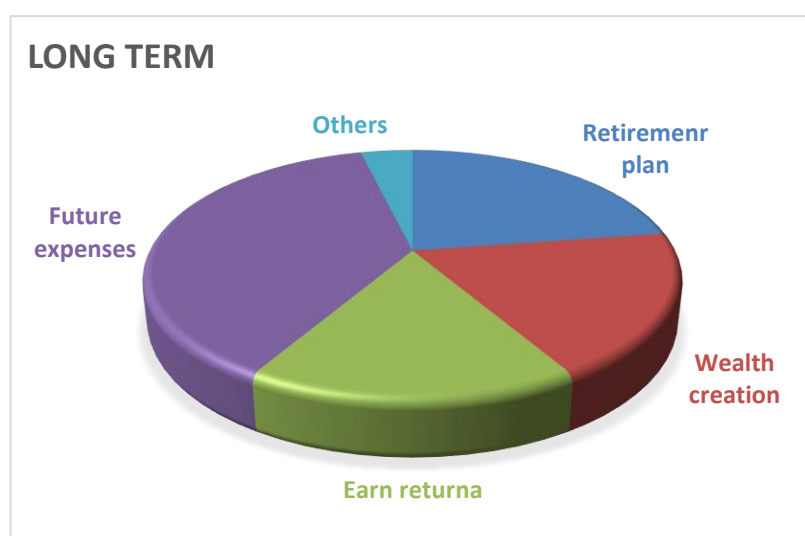
Interpretation:

The above chart 5.8(b) interprets that out of 120 investors, 53 clients invest in long term. 37.7% investors invest for Future expenses, where as 22.6% clients are investing for Retirement plans.

Table No: 5.9 The type of funds preferred by investors to invest in mutual fund.

<div align="center">Table No: 5.9</div>

Parameter	Frequency	Percentage
Equity fund	11	9
Debt fund	16	13
Hybrid fund	10	8
Income fund	14	12
Liquid fund	12	10
Growth fund	09	8
Tax saving fund	05	4
Money market fund	10	8
Sector specific fund	04	3
Sip	12	10
Lum-sum	15	13
Any other	2	2
Total	120	100

Interpretation:

Debt fund 13%, income fund 12% and liquid fund 10% in these funds have less risk and are for short term so more investment in these funds. 13% is invested in lum-sum as the amount is invested only once. The least amount of investment has been made in specific sector because investors feel more risk in investing in a single sector. Those who have monthly income invest in SIP. 4% investment is in tax saving only those investors who have high income and it gets cut in tax invest in tax saving.

Table No: 5.10 Investment avenues most preferred by the clients.

Table No: 5.10

Low Risk Investment Avenues			High Risk Investment Avenues		
Parameter	Frequency	Percentage	Parameter	Frequency	Percentage
Saving account	22	18.5	Real Estate	07	5
Bank FD	15	12.67	Equity Shares	44	36.83
PPF	07	5.6	Gold/Silver	13	10
Government Securities	03	2.5	Commodity market	04	3.33
Any other	02	1.67	Any Other	03	4.22
Total	49	40.94	Total	71	59.38

(Source: Primary Data)

Chart No.5.10(a)
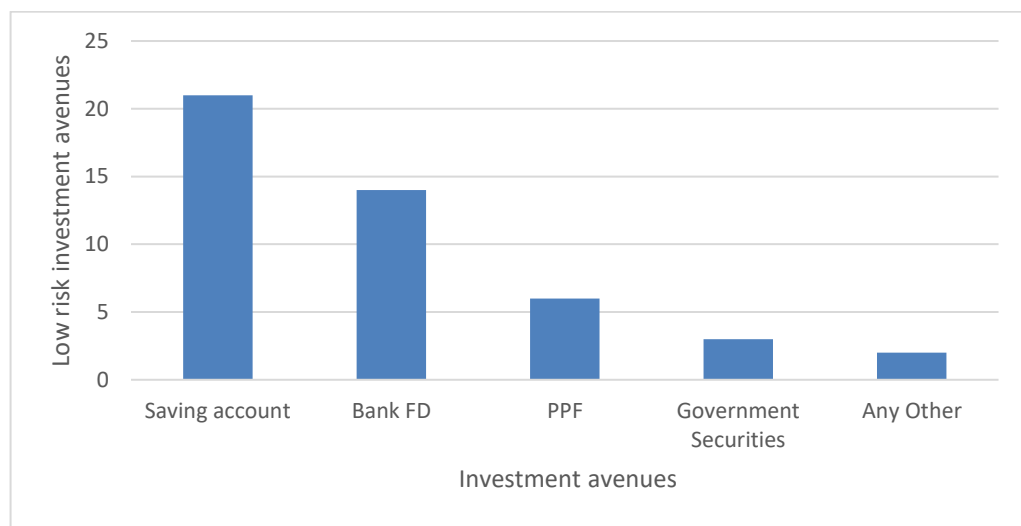
Interpretation:

From the above table 5.10(a) it was also observed that 40.94% clients invest in low risk investment avenues, generally these investors are from salaried group who choose to keep their funds safe and enjoy a nominal interest rate of returns. 18.5% &12.67% respondents choose to invest their fonts in Saving account and Bank FD's.

Chart No.5.10(b)

90
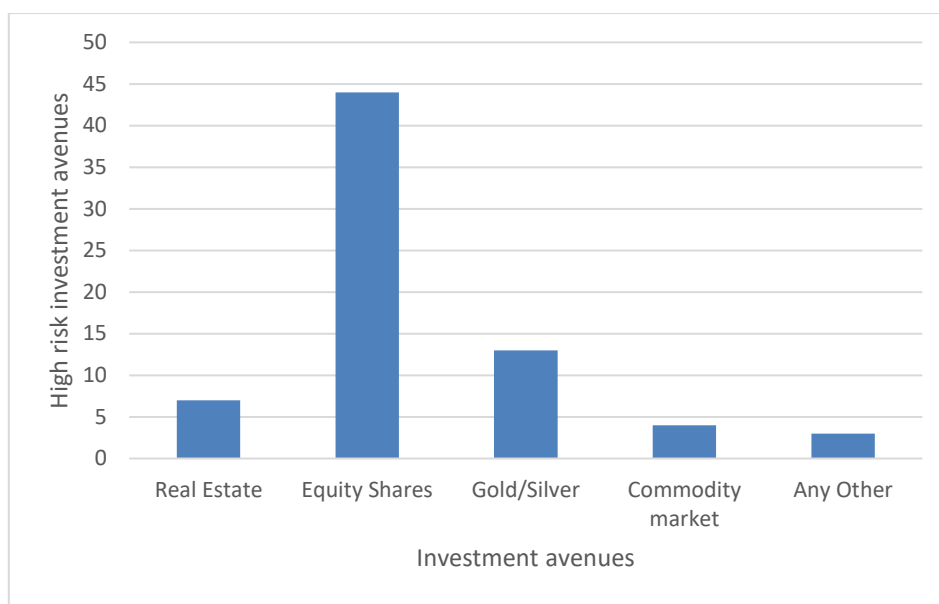
Interpretation:

From the above table 5.10(b) it can be clearly observed that 59.38% clients invest in high risk investment avenues, generally these clients belongs to the high income group. Out of 120 respondents 44 respondents invest in equity share market, 13 clients invest in gold/silver generally female investor's make investment in this avenue.

Table No: 5.11 Portion of amount that clients invest in mutual fund from their total savings.

Table No: 5.11

Parameter	Frequency	Percentage
10-20%	37	31.1
20-40%	42	35.3
40-60%	31	26.1
60-80%	06	4.1
80-100%	04	3.4
Total	120	100

(Source: Primary Data)

Interpretation:

The above table & chart interprets that out of 120 investors invest some portion of in the mutual fund according to their income 42 respondents invest 20-40% from their total

91

savings in the mutual fund, 37 respondents invest 10-20% from their total savings in the mutual fund, and 31 respondents invest 40-60% from their total savings in mutual fund and remaining above 60% of the total savings in the mutual fund.

Table No: 5.12 Duration of investment by investors in mutual fund schemes.

Table No: 5.12

Parameter	Frequency	Percentage
Less than 3 years	33	28.3
3-5 years	26	22.2
5-10 years	37	31.4
Above 10 years	24	20.1
Total	120	100

(Source; Primary Data)

Interpretation:

31.4% of investors have the highest investment tenure of 5-10 years. We will make this investment for children's education and marriage. 28.3% investment is for a minimum of 3 years. 22.2% of the investment is for 3-5 years which is for some other reason like business. The lowest term investment is above 10 years which is 20% and it is done for future plan.

Table No: 5.13 Investors expected rate of return from mutual fund investment

Table No: 5.13

Parameter	Frequency	Percentage
8-12%	16	13.3
12-16%	43	35.8
16-20%	36	30
More than20%	25	20.8
Total	120	100

(Source: Primary Data)

Interpretation:

The above table no 5.13 exhibits that out of 120 respondents, 43 clients expects the return between 12-16% on their investments decision, 36 clients expects to earn the returns between 16-20%, 25 clients expects returns more than 20% and remaining 16 clients expects returns between 8-12% on their investments.

Table No: 5.14 Source for purchase of mutual funds.

Table No: 5.14

Parameter	Frequency	Percentage
AMC	14	11.2
Online Investment platform	22	17.4
Financial Advisors	38	31.1
Bank and Credit Unions	27	22.1
Demat Account	13	10.1
Any other	06	4.1
Total	120	100

Interpretation:

The source of investment of 31.1% investors is financial advisor. Because they don't know where and how to invest, which mutual fund is good for them, they consult a financial advisor. 22.1% of clients invest through banks and credit unions. 11.2% and 17.4% of investors invest through direct asset management companies and online platforms. Only 10.1% clients open a demat account and invest in mutual funds with its information.

Table No: 5.15 Reasons for investing in mutual fund.

Table No: 5.15

Reasons	Frequency	Percentage
Professional Management	24	20
Diversification of Risk	17	14
High Return	10	8
Liquidity	13	11
Tax Examination	13	11

Prompt Service	20	17
Multiple option	23	19
Total	120	100

(Source: Primary Data)

Chart No.5.15
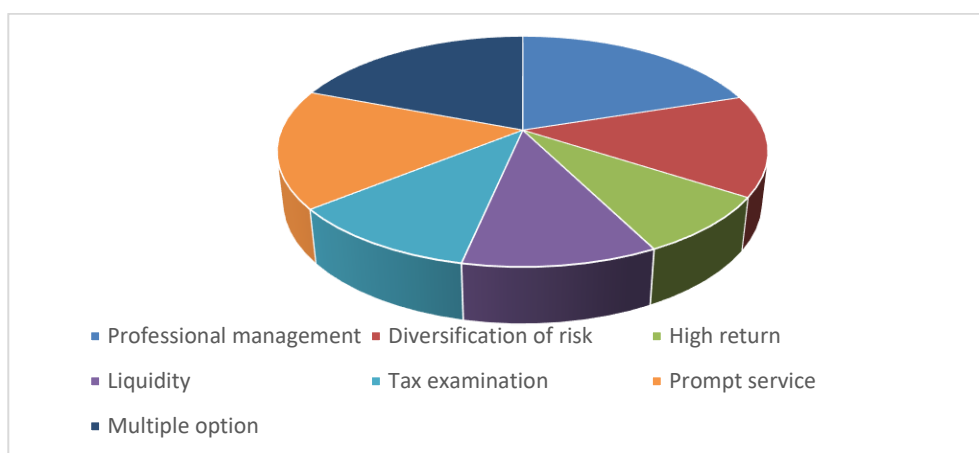
Interpretation:

As per the above analysis it can be seen that 20% respondents are doing professional management, 14% respondents are diversifying risk, 8% respondents are interested in high return investments, 22% respondents are checking liquidity and tax and 19% respondents are having multiple investment options. It is clearly noticed that the customers of IRENICBIZ are not high return investors, because few people are giving high returns.

Table No: 5.16 Analysis on what influences you while investing in mutual fund.

Table No:5.16

Sources	Frequency	Percentage
Friends & Relatives	41	34.7
Newspaper	37	30.5
Advertise	27	22.9

Mega Public Issue	23	19.5
Total	120	100

(Source: Primary Data)

Chart No.5.16
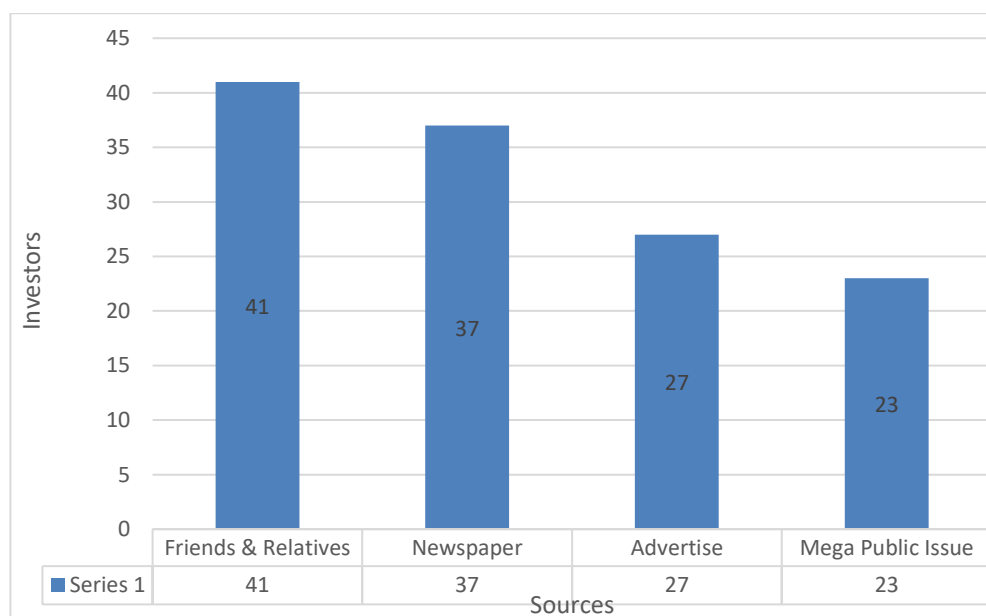
Interpretation:

The above graph clearly state that 34.7% clients are influenced by friends & relatives while making investments, 30.5% clients gets influenced due to newspaper, 22.9% clients are influenced by advertise and mega public issues influences 19.5%. It was noticed from the above graph that friends, relatives, newspaper influences the most before making investments.

45% of the respondents were among the age group of 41-50. And only 28% of the respondents were belonging to the age group of 31-40, hence it is important to spread awareness about making investments in mutual fund among the young ration According to the data have been collected among the recipients 94(78.3%) were male and the rest 26(21.7%) were female, from this it can be seen that investing is mostly a man's game although women are doing their investments in some way of another but they are very less doing it through financial instruments. (Table no.5.1&5.2)

In the above data analysis 76.7 of investors are married. (Table no.5.3)

It was also interesting to notice that 50.8% of the collect was very reliable for the study. (Table no.5.4)

Among the 120 respondents, 42 respondents were from salaried job professional category. It is necessary to make aware students and businessmen to start investing in the mutual fund (Table no.5.5)

From the study, it was found that 35% clients invest only up to 10k-20k in the mutual fund; this was because of the fear of high risk or due to less knowledge about mutual fund. Only 9% of clients invest more than above 40k generally these clients are from the high income group (Table no.5.6)

It was that 35% respondents who monitor their investments monthly. Generally there are salaried people. And 30% respondents make investments on yearly basis. (Table no.5.7)

According to the data that have been collected, it could be observed that 67 of the respondents invest for short term and 53 respondents invest for the long term. People with high income generally go for the long term investments with the view of wealth creations and future expenses; Whereas people with low income generally go for the short term investment with the view of Children's Education or Children marriage, Tax saving and Tours etc. (Table no.5.8)

From the study researcher observed that 54% of IRENICBIZ's clients preferred low risk mutual funds due to low risk-taking ability study. Whereas only 46% of respondents were interested in high risk mutual funds. (Table no.5.9)

From the data collected it was found that 59.38% clients prepare high risk investment avenues and 40.94% clients prefers low risk investment avenues. The study reveals that despite of high risky nature of equity share market 36.83% clients are making investment, as it gives higher returns than any other market. Almost 30.70% clients chooses saving account and FD as the best investment avenue, as it gives the fixed amount of returns on their investments. (Table no.5.10)

From the sample survey it was found that 66.4% clients of IRENICBIZ are not investing more than 40% of their savings in the mutual fund due to high risk involved. Only 33.6% clients are investing the huge amount of savings portion in the mutual fund. (Table no.5.11)

In the above data analysis that the 31.4% of clients have an investment of 5-10 years depending on the type of investment they want to invest. 28.3% of investors have a minimum of 3 years, 22.2% of investors have an investment of 3-5 years and the lowest is 20.1 clients. They do it for more than 10 years. (Table no.5.12)

In the above data analysis that the 36% of respondents have expected return on their investment are 12-16% and 30% of respondents between 16-20% respectively. (Table no.5.13)

31.1% of clients invest by taking the help of a financial advisor. 33.3% buy mutual funds through companies and banks. 31.6% invest in mutual funds themselves through online platforms or by opening a demat account (Table no.5.14)

Only 8% of the respondents mentioned high return investment as another 92% of the respondents invest in mutual funds for some needs. (Table no.5.15)

Researcher found that Friends, Relatives and Newspaper influences the most while making investment in the mutual fund. (Table no.5.16)

Conclusion:

The present study has important implications as it comes out with certain interesting facts of individual investor. The individual investor still prefers to invest in financial products which gives risk free returns. This confirms that Indian investors even if they are of high income, well educated, salaried, independent are conservative investors prefer to play safe. It is being general and obvious phenomenon that investment pattern and its magnitude mainly consider the age, knowledge level and source of income. An investor while investing observes how much he or she earns from the respective sources, assesses the investment alternative Available in the mutual fund. Different age levels have different requirements and responsibilities. Due to these factors the levels of investment get varied as per the age of the investor. Further the availability of income and availability of investment alternatives also plays a significant role in determining the attitude of investor towards the mutual fund.

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Assessment of Services in Educational Institutions in India

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Abstract: *Although manufacturing and other service sectors frequently experience service failures, academic settings, especially management institutes, must exercise extreme caution in the services they offer because students enrolled in these professional courses are only there for a two-year period. Therefore, "Do it right the first time" applies to management institutes. Here, teaching service failures can take the form of professors who are late for class or who are unavailable during office hours, who act indifferently toward students or treat them disrespectfully due to their position of authority, etc. Such Institutes may have unobserved service failures and unregistered complaints, which would limit the extent of the service recovery attempt. displeased student in the event that a service malfunctions;*

Keywords: *Service failure, Service recovery, disgruntled student, complaining behavior.*

Introduction: According to popular belief, a service failure occurs when a customer's expectations are not met, resulting in dissatisfaction on their part. The steps an organization takes to restore a service after it has failed are referred to as service recovery. Higher education is one service sector that stands to gain a great deal from the use of marketing ideas in the field of service recovery (Iyer & Muncy, 2008). According to Hemsley-Brown and Oplatka (2006), there is a need for additional research on the application of services marketing principles to the higher education service sector. When the customer's expectations are not met by the services, service failure happens (Park and Park, 2016). According to Berry and Parasuraman (1992), failure can also be seen positively. They contend that rather than always being an issue, poor service may actually be used to increase client pleasure and keep them from defecting. Even though things can go wrong, an organization can recover by using efficient recovery techniques. It is necessary to update the old proverb in the service industry: "To err is human; to recover, divine."

Research Problem: Service breakdowns are frequent in the manufacturing and other service sectors, but Management Institutes must exercise extreme caution in the academic and educational settings they provide because students enrolled in these professional courses are only there for a two-year period. Here, incompetent professors could arrive late for class or be unavailable during office hours; they could also be indifferent or treat students disrespectfully due to their position of authority and power, among other things. Such Institutes may have unobserved service failures and unregistered complaints, which would limit the extent of the service recovery attempt. Dissatisfied students who experience poor treatment may decide not to file a complaint but instead propagate negative rumors that could prevent the institute from accepting new applicants. As a result, one of the main principles of the relationship marketing strategy is service recovery.

Objectives:

1. To know the expectations of students concerning teacher's attributes.
2. To examine the predominant attribute possessed by the teacher that leads to student satisfaction.
3. To find out the attributes those predominately lead to student dissatisfaction.
4. To analyze the influence of student attitude towards complaining about service failure and recovery.

Scope of Study: The study is confined to only one MBA Management Institute. As the study is based on service failure and service recovery efforts of the Management Institute, only MBA II Year students of the Institute are included in the study. The study focuses only on the teaching service encounter. Other service encounters viz. administrative office functioning, library, computer lab, infrastructure, examination etc. at the Institute are not included in the study.

Research Methodology: For the present study, quantitative method of research was used to accomplish the study objectives. As the study describes the attributes of teachers that lead to student satisfaction & dissatisfaction and students attitude towards the complaining behavior, descriptive research design was used. The study involved use of cross-sectional design as the collection of information was done from only one sample of population i.e. MBA II Year students only. This information was collected only once.

Data Sources: The study utilized data from both the Primary and Secondary sources.

Secondary Sources: Database (JGate) Reference Books, Journals and Articles etc.

Primary Source: Students of MBA Institute (II Year only) were contacted through mail to collect the data.

Research Instrument: Primary data was collected using a structured questionnaire as a research instrument. The questionnaire was designed keeping in view the study objectives. The questionnaire was mailed to the respondents to get the information. The question format used is close-ended. This was done with a view so that students are able to understand and answer the questions easily. The questionnaire was based on five- point likert scale. Questions related to five attributes of teachers viz. active listening, professional competence, friendliness, approachability and empathy were covered in the study. Respondents (Students) were asked to rank the extent to which these attributes were related to expectations, satisfaction and dissatisfaction of services. Also questions related to the reasons for not complaining about a service failure and student satisfaction related to service recovery effort were also framed.

Sampling: The present study was carried out in Baramati taluka of Pune district, State of Maharashtra, India. As the study is confined to only one MBA Management Institute located in the heart of the city, only 90 students learning (MBA II Year only) in this Institute are considered for the study. But only 36 responses were generated, and after assessment and discarding of some responses (sample error), only minimum sample size of 23 responses was of statistical significance.

Sampling Frame: Students of Management Institute

Elements: Male & Female Students

Sampling Unit: As the study is more likely to focus on the service failure and service recovery effort, particularly MBA II Year students only will be considered as the sampling unit.

Sampling Technique: Convenience Sampling Technique (Non-Probability Sampling)

Sample Size: 23 Respondents

Data Analysis and Interpretation: The collected data is tabulated and analyzed using descriptive statistics, SPSS and percentage analysis.

Table 1: Expectations of students concerning teacher's attributes				
Attributes related to expectations by students	**Mean**	**Std. Deviation**	**N**	**Rank**
Active Listening: Teachers should listen to what their Students are saying with full attention and hear them out.	3.512	1.058	23	2
Professional Competence: Teachers should have necessary knowledge to provide solution to student problems.	3.608	.968	23	3
Friendliness: Teachers should be friendly. It means they should be easy to talk to and must have a positive tone of voice.	3.913	.926	23	5
Approachability: Students want teachers to be available during the working hours.	3.391	.887	23	1
Empathy: Teachers should understand students' perspective and must be willing to help students. Teachers should also respect students.	3.695	1.222	23	4

(Source: Primary Data)

The above table clearly depicts attributes ranked by the students. It shows that students expect their teachers to be friendly and empathetic. This can be seen by their highest Means i.e. 3.913 & 3.695 respectively. They opined that even they should be respected. According to the respondents under study, approachability attribute doesn't matter if the teacher is friendly and empathetic.

| Table 2: Predominant attribute possessed by the teacher that leads to student satisfaction				
Attributes leading to student satisfaction	**Mean**	**Std. Deviation**	**N**	**Rank**
Active Listening: Teachers should listen to what their Students are saying with full attention and hear them out.	3.869	0.946	23	5
Professional Competence: Teachers should have necessary knowledge to provide solution to student problems.	3.695	0.905	23	3
Friendliness: Teachers should be friendly. It means they should be easy to talk to and must have a positive tone of voice.	3.826	0.867	23	4
Approachability: Students want teachers to be available during the working hours.	3.695	1.195	23	2
Empathy: Teachers should understand students' perspective and must be willing to help students. Teachers should also respect students.	3.434	1.135	23	1

As the mean for the attribute active listening is the highest i.e.3.869, one can understand, students are more satisfied if they are actively listened. This is the major attribute students feel that lead to their satisfaction at the Institute followed by friendly behavior of a teacher (mean: 3.826)

Table 3: Predominant attribute possessed by the teacher that leads to student dissatisfaction				
Predominant Attribute that lead to student dissatisfaction	Mean	Std. Deviation	N	Rank
Active Listening: If teacher does not listen actively and do not give patient ear.	3.478	1.470	23	3
Professional Competence: If teachers do not have the ability to provide knowledge & solve students' problems.	3.000	1.179	23	1
Friendliness: If teachers are not friendly and are rude.	3.478	1.221	23	4
Approachability: If teachers are not available in the faculty room after classroom hours & are always unapproachable.	3.217	1.214	23	2
Empathy: If teachers do not understand students' views and show apathy i.e. disinterest in hearing students' problems and show disrespect to students because of their authority status and power.	3.521	1.137	23	5

The above analysis shows that the most predominant factor that leads to student dissatisfaction is apathetic behavior by the teacher (Mean: 3.521). Students opined that if they are treated well, professional competence of a teacher least matters to them (Mean: 3.000).
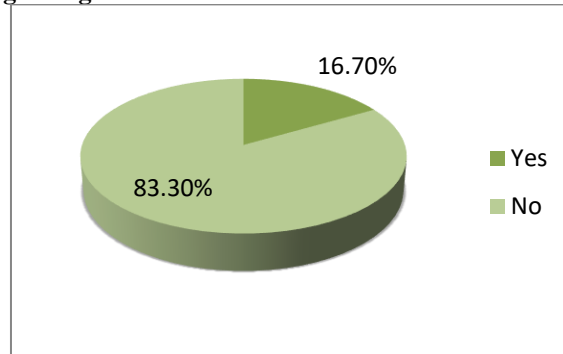
Chart No. 1: Students' Service Failure Experience regarding Teaching
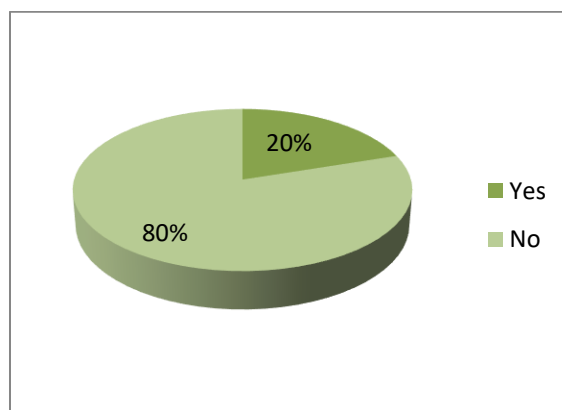
From the chart, it is evident that there are 20 % of the student respondents who have experienced service failure regarding teaching.

Chart No. 2: Complaints regarding Service Failure

16.70%

83.30%

■ Yes
■ No

(Source: Primary Data)

The above pie chart indicates 16.7% respondents have complained to the concerned authorities regarding service failure. Whereas it is evident that some of the complaints were not even registered because 20 % of the student respondents have experienced service failure.

Chart No. 3: Service Recovery Satisfaction

6.70%

94.30%

■ Yes
■ No
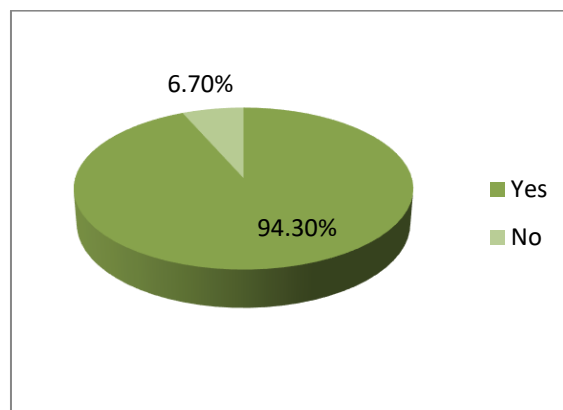
(Source: Primary Data)

It is clear from the above chart that out of the 16.7 % of the students who complained to the concerned authority only 94.3 % were satisfied by the service recovery measures taken by the Institute.

Table No. 4: Reasons for not complaining			
Reasons for not complaining	Mean	Std. Deviation	Rank
Fear of Reprisal (Punishment, less marks or act of vengeance)	3.875	0.780	3
I am neutral	3.666	1.154	2
I do not like to complain	3.111	1.72	1

(Source: Primary Data)

The above table indicates that fear of reprisal is the major reason for not complaining to the concerned authorities as the mean for the same is found to be 3.875 as ranked higher by the student respondents.

Findings:

1. Students expect their teachers to be friendly and empathetic.

2. Students are more satisfied if they are actively listened.

3. The most predominant factor that leads to student dissatisfaction is apathetic behavior by the teacher which is reflected in table no. 3.

4. 20 % of the student respondents have experienced service failure regarding teaching.

5. 16.7% respondents have complained to the concerned authorities regarding service failure.

6. 94.3 % were satisfied by the service recovery measures taken by the Institute.

7. It is found from the chart no. 2 that 83.3% did not complain service failure.

8. The major reason for not complaining was found to be fear of reprisal which is evident from table no. 4.

Conclusion:

The study provides comprehensive framework for service failure and service recovery in higher education. The present study has attempted to pave the way for enhancing student satisfaction through identifying attributes of teachers leading to service failure, student satisfaction and dissatisfaction. Students if not left disgruntled and if their problems are actively listened may lead to a positive word of mouth thereby building the goodwill of the Institute.

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A Study Based On Training Need Analysis Of Employees At Dairy Industry, Indapur

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Abstract:

Organization study helped to learn the new methods, technology used by the company. It enhances the knowledge about the company and its competitors and the techniques strategies adopted by them to beat their competition. Indapur Dairy and Milk Products LTD. has a well-established human resource management department, which looks after activities related to employees. There are different sub-divisions, which mainly deal with industrial relations, human resource development, welfare establishment and public relations.

In this research paper training need analysis and it's important are checked with reference to various objectives 81 as a sample size. employees are working in the organization from 1 to 5 year. of employees have received initial training according to their job description.

INTRODUCTION:

Training Need Analysis (TNA) is a step-by-step process of various inter-twined activities using which the training and development needs of employees in a corporate company are identified. The purpose of TNA is to find out how organization achieves their corporate objectives by systematic analysis of performance deficiencies and imparting the company workforce suitable training to increase the knowledge, efficiency and skills. A sincere effort is made to correlate and establish a link between corporate objectives and training needs for further common goal of success.

There are many benefits to an effective training need analysis. It leads to the development of a clear an agreed approach to training and designing of training solutions that matches required needs. It facilitates identification of pre-requisites to training and risk assumption that affect the training plan. It increases the likelihood of developing a culture of learning, enabling faster and more effective changes.

Training is the process of learning the skills that you need for a particular job or activity. Training constitutes a basic concept in human resource development. It is concerned with developing a particular skill to a desired standard by instruction and practice. Training is a highly useful tool that can bring an employee into a position where they can do their job correctly, effectively and conscientiously. Training is an act of increasing the knowledge and skill of an employee for doing a particular job. Training is the process of being conditioned or taught to do something, or is the process of learning and being conditioned.

According to Dale S. Beach: The organized procedure by which people learn knowledge and/or skill for a definite purpose. Training refers to the teaching and learning activities carried for the primary purpose of helping members of an organization acquire and apply the knowledge, skill, abilities and attitudes needed by a particular job and organization.

LITERATURE REVIEW

Phillips (2007) "training courses were based on management": The study portrays in a critical manner that the training was conducted mostly because the management wanted the training to be imparted but not because a proper need analysis was seriously thought through. It was said that value of the courses fails because companies do not consider training to be an essential part for growth and the proceeds of investment in training courses fetches negative results. When proper need analysis is not done, practical difficulties emerge in imparting training.

Boydell and Leary 1996, Reid and Barrington (1996) "Training needs analysis": The study stated that TNA is the very basis of all training undertakings. The study stresses on the importance of needs analysis which is important for imparting successful training matching the necessities of individuals and denotes proper value of money.

Wills (1998) "TNA is a step-by-step process of evaluations, alignments and assessments and needs compulsory development": The study lays down various steps in the process of TNA. It states that there are various steps including that of selecting the important underlying essentials of training, outlining the model for imparting training, proper preparation, executing and evaluation post training. It says that TNA is a mature process involving all the refined activities and need a professional outlook. TNA enables to showcase the desired results and substantiate the costs incurred in proportion to the realized results.

Herbert and Dover spike (1990) - "TNA needs theoretical clarity": After critical analysis from the impending literary sources it is quite evident that TNA is suppressed by different

approaches and methodologies for conducting training assessments. It was stated that there is substantial overlap of descriptive and prescriptive literature.

Potter et al., (2000) "Foremost step in the training need analysis is the identification of training targets": The study prescribes processes where managers and supervisors were asked instead of the employees who need training themselves.

RESEARCH METHODOLOGY

Research objective

1. To understand the various training needs of employees.

2. To identify satisfaction of employees regarding trainings provided by the organization.

Research Type

Descriptive research technique is used in research.

Research method

Quantitative research method is used for research.

Sampling Type

Simple random sampling type is used in research which is type of probability sampling.

Sample Size

Sample size of research is 80.

Population

There are 80 employees working in corporate office of SONAI.

Data Collection

Data collection is the systematic way of gathering and measuring information from a variety of sources to get a complete and accurate picture of an area of interest.

The data used for this study are-

1. **Primary data -** Primary data consisted of original information gathered for the specific purpose. Data collected for the research is from primary sources i.e. questionnaire was developed with the help of which personal interview were carried out.

2. **Secondary data -** Secondary data is second hand-based data. The secondary data are collected from company website, internet, newspapers, magazine, etc.

Scope of Study -

1. To find out whether the development programs conducted by SONAI Company helping the employees to achieving their goals.

2. To study the different methods of training at SONAI Company.

3. To study the relationship between performance and training.

Limitations:

1. Due to the sensitivity of the information, some company details were not made available for review. Hence the study and analysis is limited.

2. Many of the company employees did not properly submit answers for the questionnaire and their responses were incomplete. so we reduced the sample size.

Data Analysis

This study consists of a survey data collected from 80 respondents by employees of SONAI. It also includes demographic details like age group, educational qualification, type of work, etc. along with past and present training initiatives taken by the company and their understanding of the same.

Table No.1:-The following table indicates Employee Educational Qualification

Options	No.of responces	Percentage
Under Graduation	13	16
Graduation	34	44
Post Graduation	22	28
Other	11	12
Total	**80**	**100**

Education Qualification

Under Graduation · Graduation · Post Graduation · Other
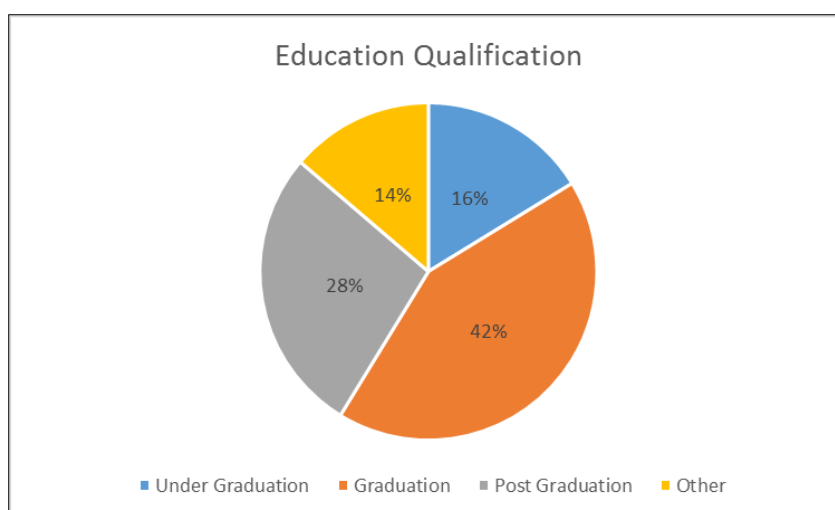
Interpretation: From survey it is inferred that majority of employees i.e. 44% of employees educated with graduation. While 28% of employees educated with post-graduation followed by graduation. And 16% of employees are under graduated, while 12% of employees educated with other specializations like diploma.

Table No.2:-The following table indicates employee working for this organization?

Options	No. of responses	Percentage
less than 1 year	32	40
1 to 5 year	39	48
5 to 10 year	6	8
10 to 20 year	3	4
20 and above	0	0
Total	**80**	**100**

Experience

less than 1 year · 1 to 5 year · 5 to 10 year · 10 to 20 year · 20 and above
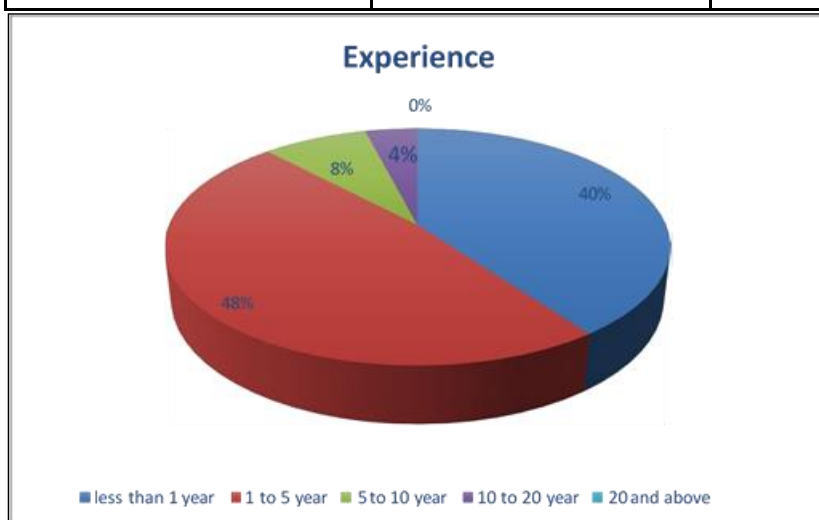
Interpretation:

From our survey 48% employees are working in organization for 1 to 5 years. There are 40% employees who are working for less than 1 year. There are 8% and 4% employees who are working in organization for 5 to 10 and 10 to 20 years respectively.

Table No.3:- The following table indicates your organization consider training as a part of organization strategy?

Options	No. of responses	Percentage
Yes	64	80
No	10	12
May be	6	8
Total	**80**	**100**

Training as a part of organizational strategy

Interpretation:

80% of employees believes that organization consider training as part of organizational strategy. 20% of employees don't think that organization consider training as part of organizational strategy because they were not satisfy with the current training programs, so organization could focus on such employees and give them proper training. 8% of employees are not sure about it.

Table No.4:-To whom training is given more in your organization?

Options	No. Of responses	Percentage
New staff	16	20
Junior Staff	21	28
Senior Staff	13	16
Based on Requirement	30	36
Total	**80**	**100**
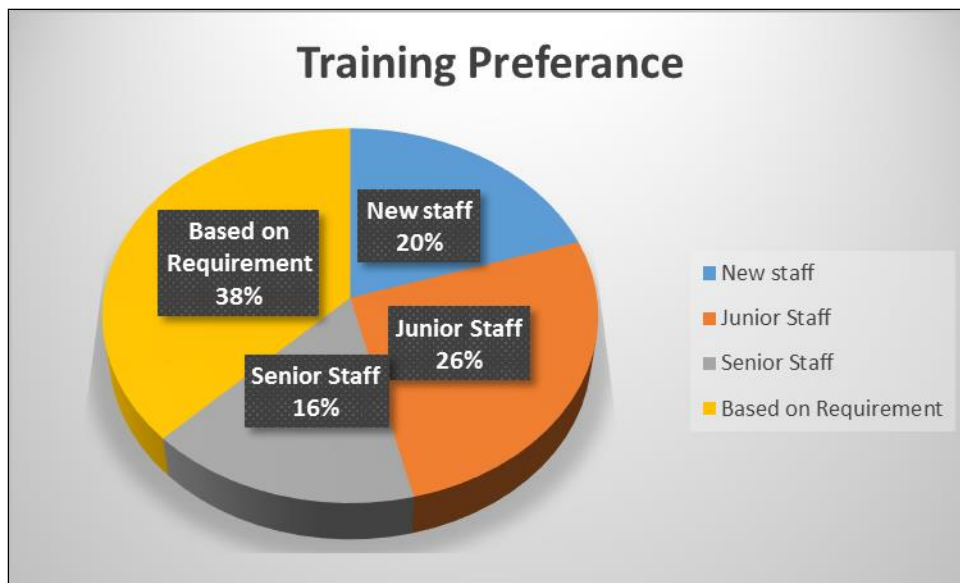
Interpretation:

According to above data out of 100% employees in SONAI Company: Training is given to 20% of new staff. Training is given to 28% of junior staff. Training is given to 16% of senior staff and Training is given to 36% of employees based on requirement.

Table No.5.:- Have you received any initial training according to your job?

A) Yes

B) No

C) May be

Options	No. Of responces	Percentage
Yes	37	48
May be	16	20
No	27	32
Total	**80**	**100**
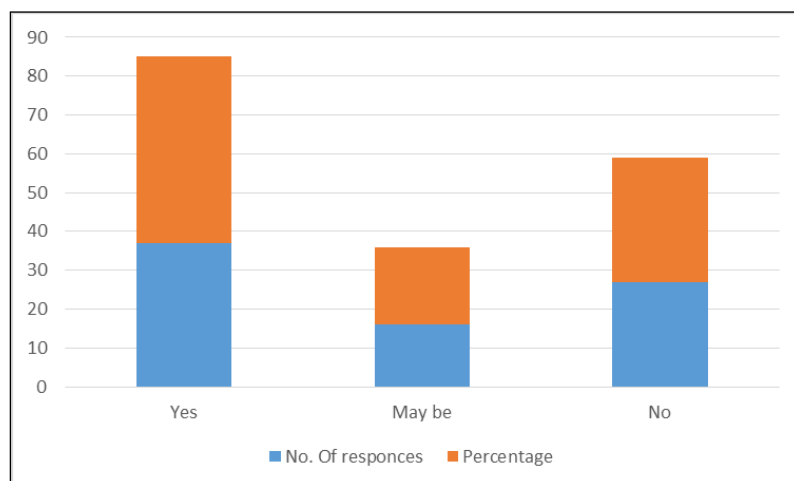
Interpretation: It can be analyzed from the picture that 48% of the respondents underwent initial training as per job profile, whereas 32% respondents state that they did not have any initial training while 20% are unaware if they have underwent any initial training.

Table No.6: The newly recruited employees undergo well-structured induction training to adapt with company set- up and work culture.

        A) Strongly Disagree

        B) Disagree

        C) Neutral

        D) Agree

        E) Strongly Agree

Options	No. Of responces	Percentage
Strongly Disagree	3	4
Disagree	6	8
Neutral	10	12
Agree	42	52
Strongly Agree	19	24

Total	**80**	**100**
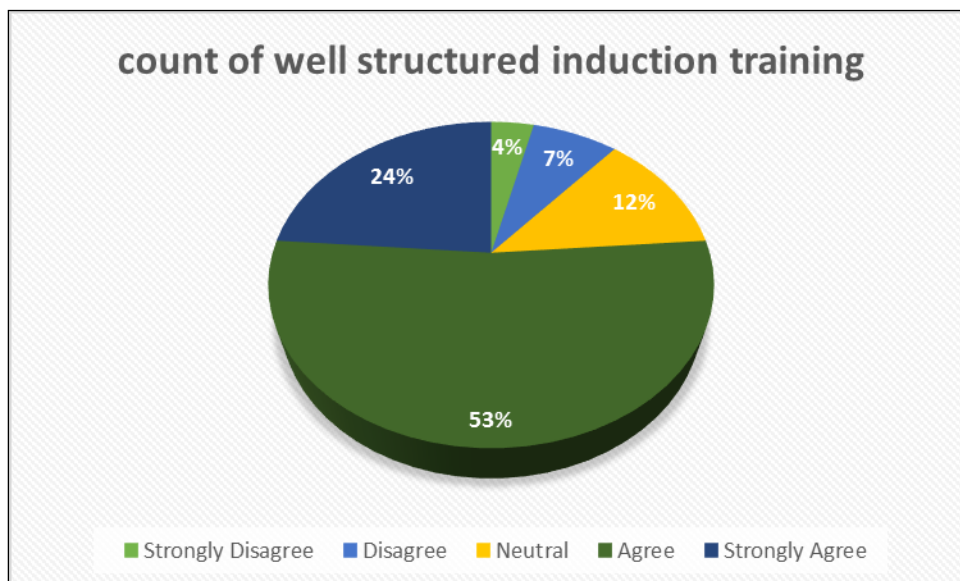
Interpretation: It can be analyzed from the table that 52% of the respondents agree that newly recruited employees undergo well-structured induction training to adapt with company set-up and work culture while 8% disagree. It can also analyzed that 12% respondents are neutral while 24% strongly agree and 4% strongly disagree.

Table No.7:- What are the ways to solve work related problems at your company?

A. Superior counselling
B. General discussion with colleagues
C. Training needed

Options	**No. Of responces**	**Percentage**
Supervisor counseling	9	12
general discussion with colleagues	13	16
Training needed	59	72
Total	**80**	**100**

Chart showing how work related problems are solved

- 11%
- 16%
- 73%

Legend:
- ■ Supervisor counseling
- ■ general discussion with colleagues
- ■ Training needed
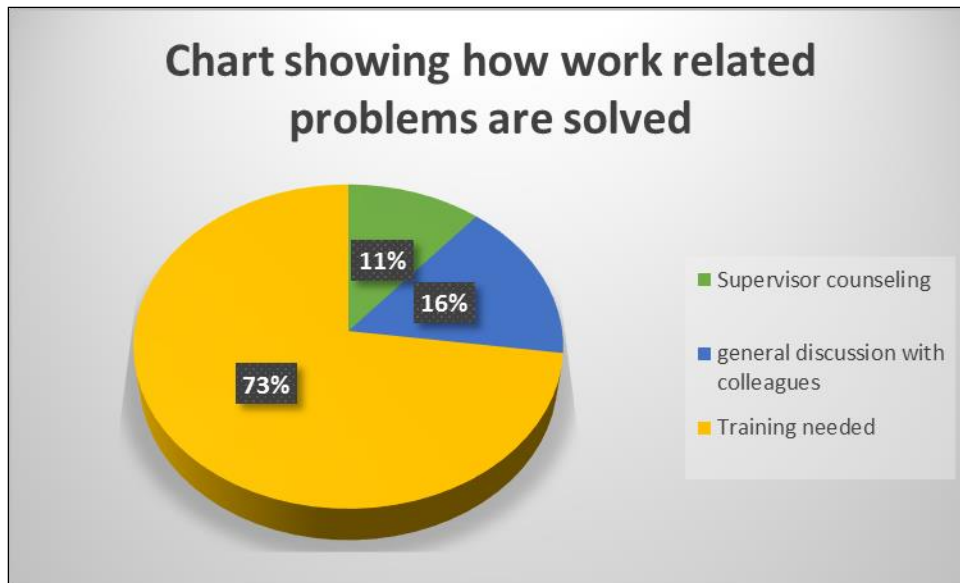
Interpretation: It can be analyzed that 16% of employees believe that general discussion with colleagues will lead to solving of work related problems whereas 12% of employees believe supervisor counseling to solve the work related problems and 72% of employees believe training is required.

Table No.8:- Rate your actual performance comparing to expected performance (1 being the lowest and 5 being the highest)

A. 1
B. 2
C. 3
D. 4
E. 5

Options	No. Of responces	Percentage
1	3	4
2	9	12
3	49	60
4	13	16
5	6	8
Total	**80**	**100**
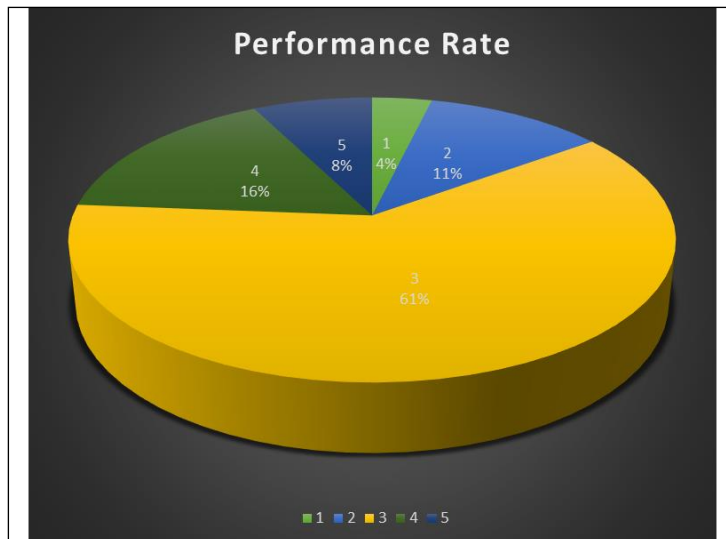
Performance Rate

Interpretation: From total employee number 60% of employees say that their performance is average which is against the expectation and only 24% of employees say that their performance is as per the expectations this indicates that there is huge gap between actual performance and expected performance which proves that there is need of training in the organization to improve employee's performance.

Findings and Suggestions:

- 44% of the employees who took the survey are graduated which shows that employees have basic knowledge of their field of work.

- It was found that majority i.e. 48% of employees are working in the organization from 1 to 5 year. Because of their expectations for competitive and better compensation, employees tend to leave organization in order to find better opportunities somewhere else. This shows that organization should focus on employee retention by various methods.

- 80% of employees believes that organization consider training as part of organizational strategy. This shows that organization is focusing on training their employees and is aware that if the productivity of employees increases it will benefit them.

- It is observed that 36% of employees are trained based on their requirement. In SONAI training is given to employees, which shows that company focuses on the training needs of employees. It was found that majority of the employees feel that management takes utmost care of the employee training needs.

- 48% of employees have received initial training according to their job description which was either in SONAI or at their previous workplace.

- It is found that most of the employees i.e. 36% agree that they face work related problems. This means they need proper training according to their level of understanding.

- It was observed that all the newly recruited employees under-go proper induction training to adapt to company set-up and work culture.

- It is found that 60% of employees rate their actual performance compared to expected performance as average, while only 24% of employees think they have good performance which is not good for the growth of the organization, as it should be vice versa. This shows that there is huge gap between actual performance and expected performance and needs more trainings for improvement.

Suggestions:

- There is a considerable difference between actual performance and expected performance, therefore various training initiatives- case studies, coaching, eLearning, interactive training, should be taken to achieve the expected performance.

- As the majority of the employees employed with the company are in the range of 0-1 years or 5 years and above, the company should focus on imparting training to the above two ranges as the new comers need to be trained effectively to understand the work culture and the employees employed for more than 5 years should be trained as knowledge becomes redundant over a period of time due to the changes and innovation in technology.

- As almost 32% of the employees feel they did not have any training as per their job profile, the training should focus on segregation of job profile and proper training should be imparted accordingly.

- HR department should conduct practical based workshop on some vital topics so that employees are always motivated and encouraged to work.

Conclusion:

The awareness of the employees should be raised by including training as a mandate. The company is very dynamic with various day-to-day changes. The trainer of the company not only needs to be dynamic but should also understand the dynamism of a highly evolving sector. Self-awareness is very much important if employees want to be successful in their career. The company should encourage self-awareness and distribution of knowledge among colleagues.

The company should try hard to mandate knowledge sharing by the heads of departments on a regular basis to avoid any gap.

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A Study Of Contract Labour Issue At Indapur Dairy And Milk Product Ltd, Indapur

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Abstract:

The employment of Contract labour is becoming a global phenomenon across all industries and services sectors. Engagement of contract labourers in India is regulated under the Contract Labour (Regulation & Abolition) Act, 1970. As per the provisions of this act "in cases where the contract worker perform the same or similar kind of work as the workmen directly employed by the principal employer of the establishment, the wage rates, holidays, hours of work and other conditions of service shall be the same as applicable to the workmen directly employed by the principal employer doing the same or similar kind of work Scope, problem statement, objective research design, tool and information gathered through the primary and secondary sources as well. Data analysis and interpretation of collected data are done by using percentage and graphs.

Introduction:

The contract labour are more insecure compared to regular worker. the given that permanent worker salaries are much higher than contract labour. The sonai dairy are in the hours of work are frequently longer as remuneration is linked to output & task completion. the contract labour has little bargeneing power, social security & often engaged in the organization with lesser facilities & security. The contract worker do not feel as much loyalty to the Company as regular Worker would, reduce employers incentive to invest in their training. Contract labour compromise on productivity, quality & good behavior since continuance of their service depend upon these factors.

Following are the major reasons of the immense increase in engagement of contract labour-

1. Contract labour system helps to absorb the ever-increasing population pressure on the labour market by creating new employment opportunities such as short term or fixed term work assignments and allied services to the main business activities.

2. It makes the availability of labour easy and flexible. It helps the employer to terminate the services of the labour as per the requirements of the business to sustain competitiveness.

3. It enables the employers to avoid their accountabilities under the different labour legislations such as compensation for lay-offs and retrenchments and social security schemes as contract workers are not practically accessible to these benefits, the claim for which is generally based on long term employer employee relationship.

4. It keeps the overhead costs low and relieves the employer from maintaining a big centralized establishment. The employers can avail the benefits of specialization.

5. Contract workers do not unite to fight for their causes. They are usually standing in competition with each other. They are often afraid of losing jobs. It weakens the labour solidarity in general. Employers justify it saying that it avoids industrial unrest and consequential losses

LITERATURE REVIEW:

Meenakshi Rajeev (2009) did research on **"Contract Labour Act in India":** The findings were that in India for a contract worker it is not only hard to prove his or her identity as worker under the labour law but employer employee relationship is also not easily to establish. It is observed that collusive agreements between various agents often result in the exploitation of the contract labour. However, to be able to do this it is necessary to make the workers aware of their rights and responsibilities so that they are able to detect violation of laws.

Saini, Debi (2010) did research on **"role of the contract worker":** The findings were that the rights conferred on the contract workers by the Constitution of India and various labour laws are poorly enforced. Since May 2007 the Indian Government has been talking to the need for inclusive growth mainly to counter act the above threats envisaged by the social scientists. It should be kept in mind that inclusive growth can be sustained only if it is built on the foundations of basic rights of the working people, especially the powerless people.

Y. Prakash (2008) did research on **"contract labour act":** The findings were that the Act applies to every establishment in which 20 or more workmen are employed or were employed on any day on the preceding 12 months as contract labour and to every contractor who employs or who employed on any day of the preceding 12 months 20 or more workmen. The contractor is required to pay wages and a duty is cast on him to ensure disbursement of wages in the presence of the authorized representative of the Principal Employer. In case of failure on the part of the contractor to pay wages either in part or in full, the Principal Employer is liable to pay the same. In case the contract labour performs same or similar kind of work as regular workmen, they will be entitled to the same wages and service conditions as regular workmen.

Das, Ashis, Pandey, Dhananjay (2004) did research on **"economic & social issues relating to the contract workers" :** The findings were that the Contract Workers (CWs) get minimum statutory wages with few instances where they receive higher wages for skilled work. Incidents of contractors deducting token money from CW's wages were reported from the cement and white goods companies. However, they get better deals if they have collective bargaining strength. Illiteracy, unscrupulous contractors and hazardous working conditions impose serious safety concerns for them. Longer working hours and job insecurity are other factors that such workers face. There is no social security for them except ESI. A majority of them live in slums or rented hutments with poor civic amenities. Employers and contractors to some extent fulfill their economic and social needs.

Paras Jain (2005) did research on "**facts of the contract labour (regulation& abolition) act1970**" : The findings were that the object of the (Contract Labour Regulation and Abolition) Act, 1970 is to prevent exploitation of contract labour and also to introduce better conditions of work. Contract Labour differs from Direct Labour in terms of employment relationship with the establishment and method of wage payment. Contract Labour, by and large is not borne on pay roll nor is paid directly. The Contract Workmen are hired, supervised and remunerated by the Contractor, who in turn, is remunerated by the Establishment hiring the services of the Contractor.

Dhiraj Ramchandani (2006) did research on **"actual position of the workers" :** The findings were that the practice of employing contract labour is prevalent in most of the industries in different occupation including skilled and semi-skilled jobs. A workman shall be deemed to be employed as contract labour when he is hired in connection with the work of an establishment by or through a contractor. The various studies conducted by commissions, committees and

Ministry of Labour shows that the situation has always been exploitative. The government has taken various initiatives to improve the situation of the contract.

RESEARCH METHODOLOGY

A research methodology can be defined as follows" research is the process of systematically obtaining accurate answer to significant and pertinent questions by use of the scientific method of gathering and interpreting information".

RESEARCH PROBLEM STATEMENT:

In Sonai Dairy, The contract labour work duration extention accuracy & availability of how many labour are work daily is find. they also need unskilled manpower and compliance for contract labour. contract labour are far more insecure compared to regular worker. hours of work are frequently longer as remuneration is linked to output and task completion. There are sometime contractor is pay the wages of the contract labour is not fix period of time, the exception of contract labour is timely task completion within period and time.

OBJECTIVES OF STUDY:

1) To study the engagement of contract labour in sonai.

2) To analyze the problems faced by labours in sonai.

3) To check the act was to stop exploitation of contract labour.

RESEARCH DESIGN: A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. For this research, researcher undergoes through descriptive type of research. Descriptive research type of design is adopted.

SAMPLING AND SAMPLE SIZE: Sonai has 700 employees which are working daily. Therefore, total population for this study is 700.

 Representative Sample: A sample of few respondents will be selected from different age group, qualification and income groups of the organization.

Sampling Method: Simple Random Sampling Method is used.

The total population of the organization is 700 employees in which 500 are the contract labour is the only **production department** are working. Researcher has taken entire 100 contract labour as sample. therefore **sample size is of 100 labours**

DATA ANALYSIS AND INTERPRETATION:

Table 1 following table indicates No. of month working in current organization.

Parameter	No of respondant	ƒrequency
2 months	15	15%
6 months	25	25%
11 months	60	60%
Total	100	100%
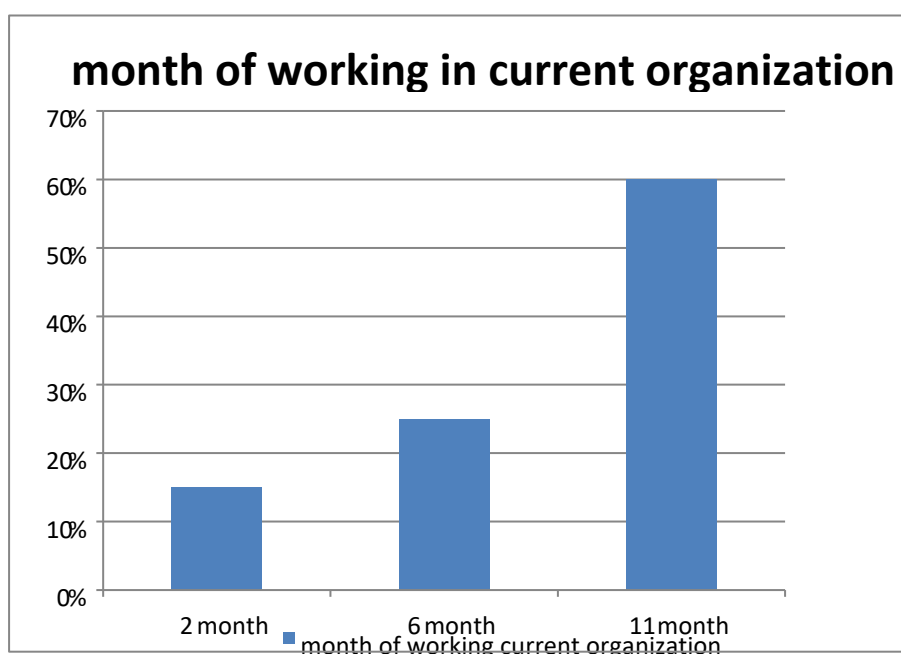
Interpretation: The above obtained graph 60% respondents are the 11month working in current organization whereas the 25% respondents are the 6-month working organization. and

15% respondents are the 2-month work duration in organization. Hence, we can conclude that, more than respondents are 11 months working in current organization.

Table 2: following table indicates Skill level of contract labour.

Parameter	No of respondent	frequency
unskilled	20	20%
Semi-skilled	40	40%
skilled	30	30%
Highly skilled	20	20%
Total	100	100%

Interpretation: In the above obtained graph 40% respondent semi-skilled of engagement contract labour.30% are skilled responses received for the same, whereas 20% are highly skilled responses with this statement. Hence, it can be concluded that, the labour are semi-skilled of engagement contract labour.

Table 3: following table indicates the various units of production department.

Parameter	No of respondent	frequency
Milk packing	20	20%

Ghee packing	10	10%
Bi product	30	30%
Powder plant	40	40%
total	100	100%

Various Units of Production
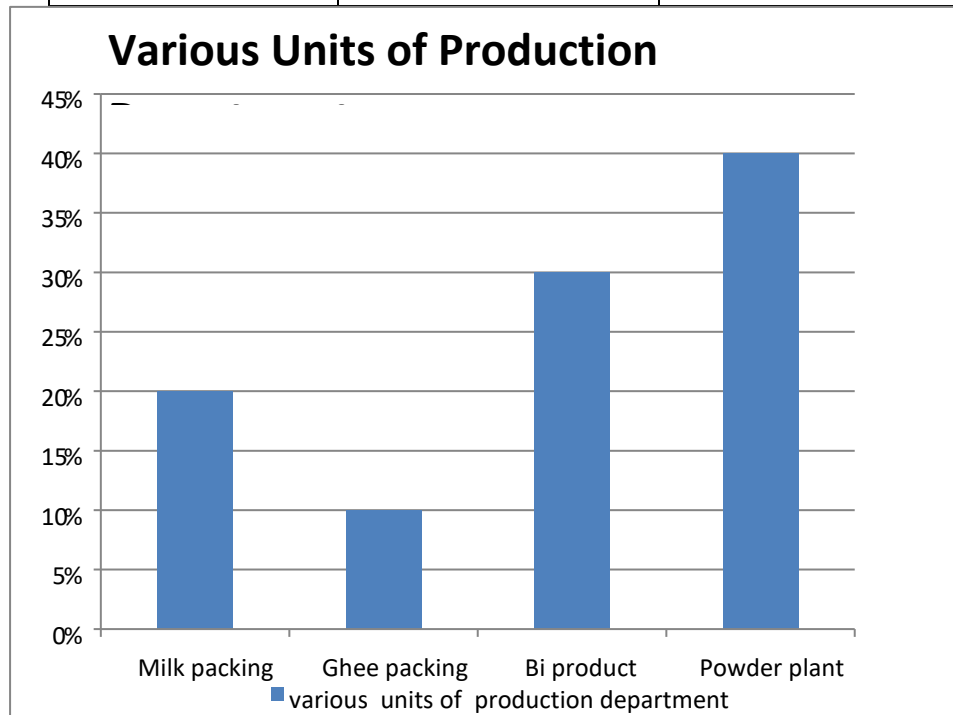
Interpretation: In the above graph 40% workers are working in powder plant whereas 10% are working in ghee packing. 20 % respondent are in milk packing. Hence, it can be concluded that, maximum labour is work in powder plant.

Table 4: following table indicates the problem faced by after joining.

Parameter	No of respondant	frequency
Working culture	40	40%
Satisfied of wage	25	25%
Hours of work	20	20%
Working shift	15	15%
Total	100	100%

problem faced by after joining
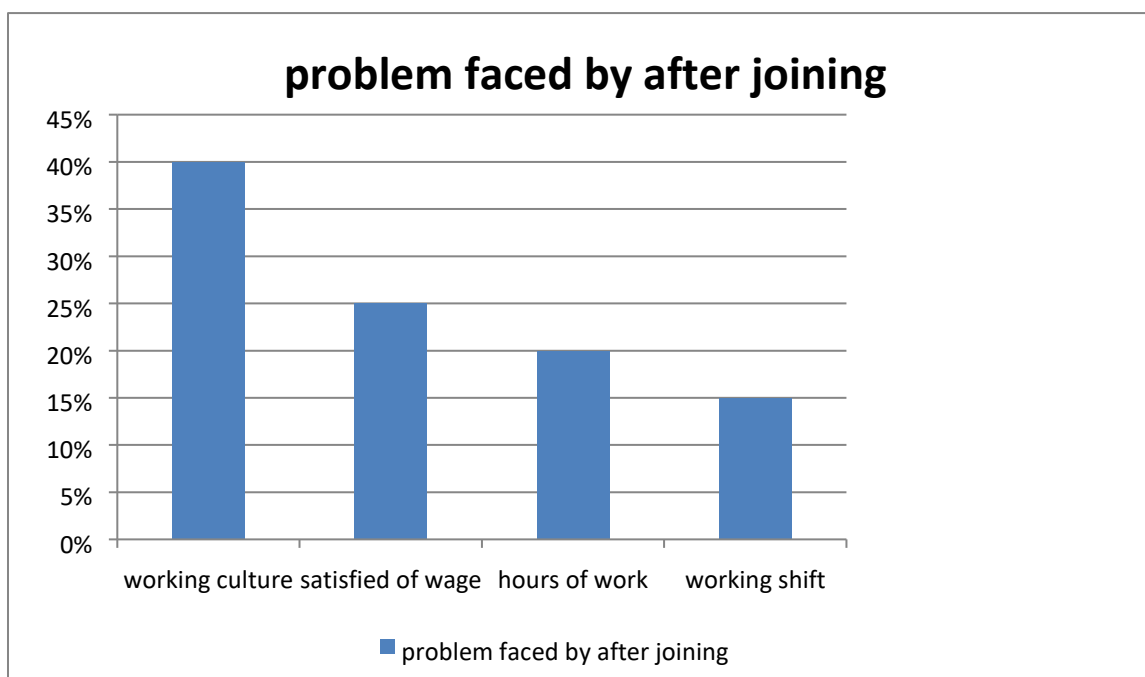
Interpretation: the above graph indicates that 40% respondents are the working culture is problem contract labour. whereas 25% respondents are the satisfied of wage then 20% respondents the hours of work. and the 15% respondents is the working shift related problem. Hence, we can conclude that, a greater number of respondents is problem faced by working culture.

Table 5: following table indicates prevent the exploitation of contract labour.

Parameter	No of respondent	frequency
Strongly agree	20	20%
agree	40	40%
disagree	20	20%
Strongly disagree	30	30%
total	100	100%

Prevent the Exploitation of Contract Labour
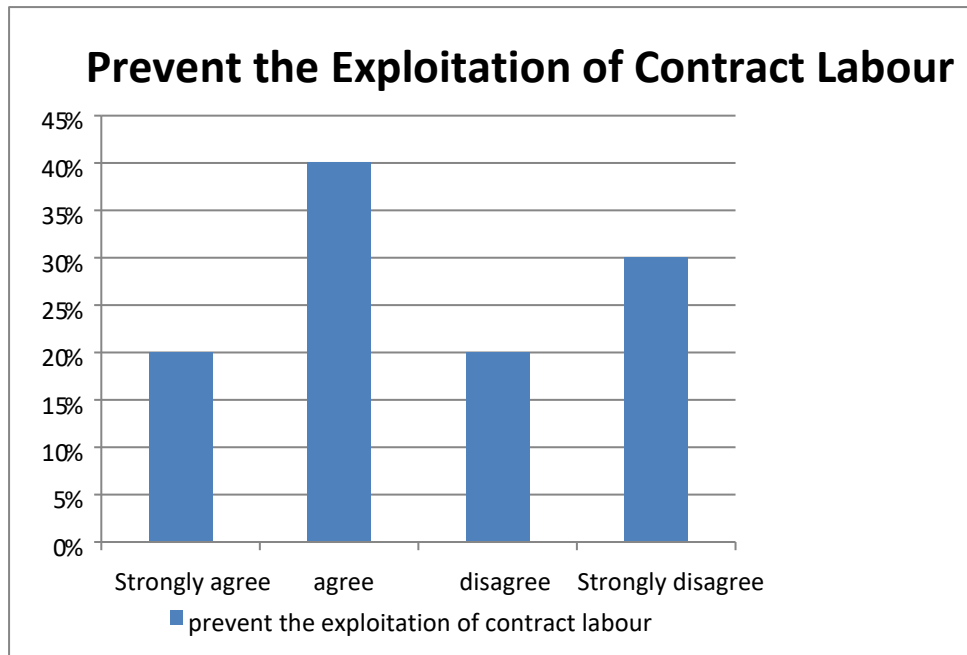
Interpretation: In the above obtained graph 40% are agree with stop the exploitation of contract labour. whereas the 30% respondent are strongly disagree. 20% are the disagree with the statement. Hence, we can conclude that, some labours are agreed with the prevent the explotation of contract labour.

Table 6: following table indicates satisfied with Appreciation by contractor.

Parameter	No of Respondant	frequency
Strongly disagree	20	20%
agree	25	25%
neutral	20	20%
disagree	15	15%
Strongly agree	20	20%
Total	100	100%

Appreciation by contractor.
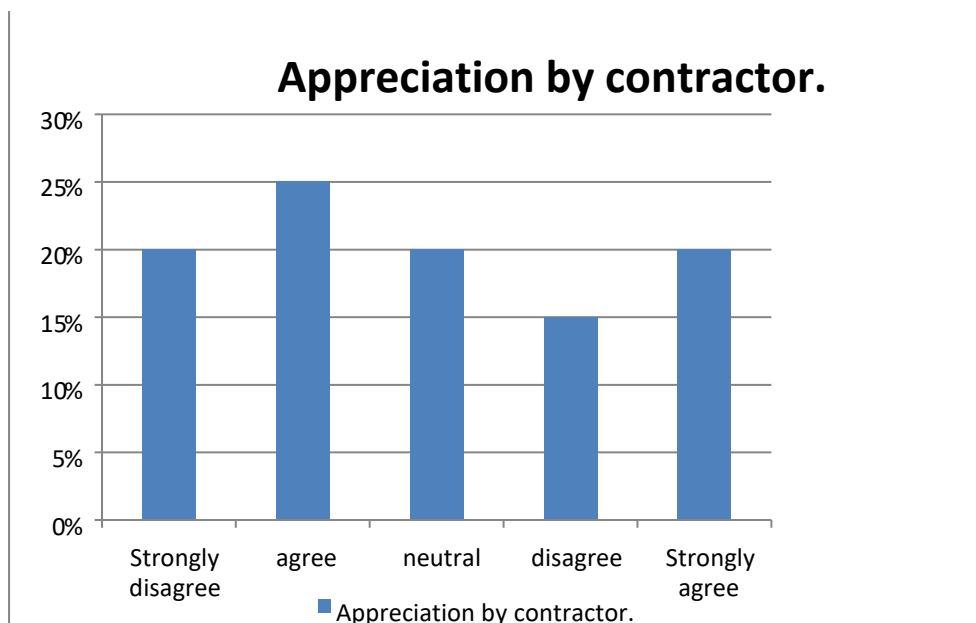
Interpretation: In the above obtained graph 25% agree with the appreciation by contractor. 20% are strongly disagree responses received for the same, whereas 15% are disagree with this statement. Hence, it can be concluded that, the agree with the appreciation with contractor.

Table 6: following table indicates realationship between contractor and contract labour.

Parameter	No of respondant	frequency
Strongly disagree	20	20%
agree	25	25%
neutral	20	20%
disagree	15	15%
Strongly agree	20	20%
Total	100	100%

Relationship between contractor and contract labour
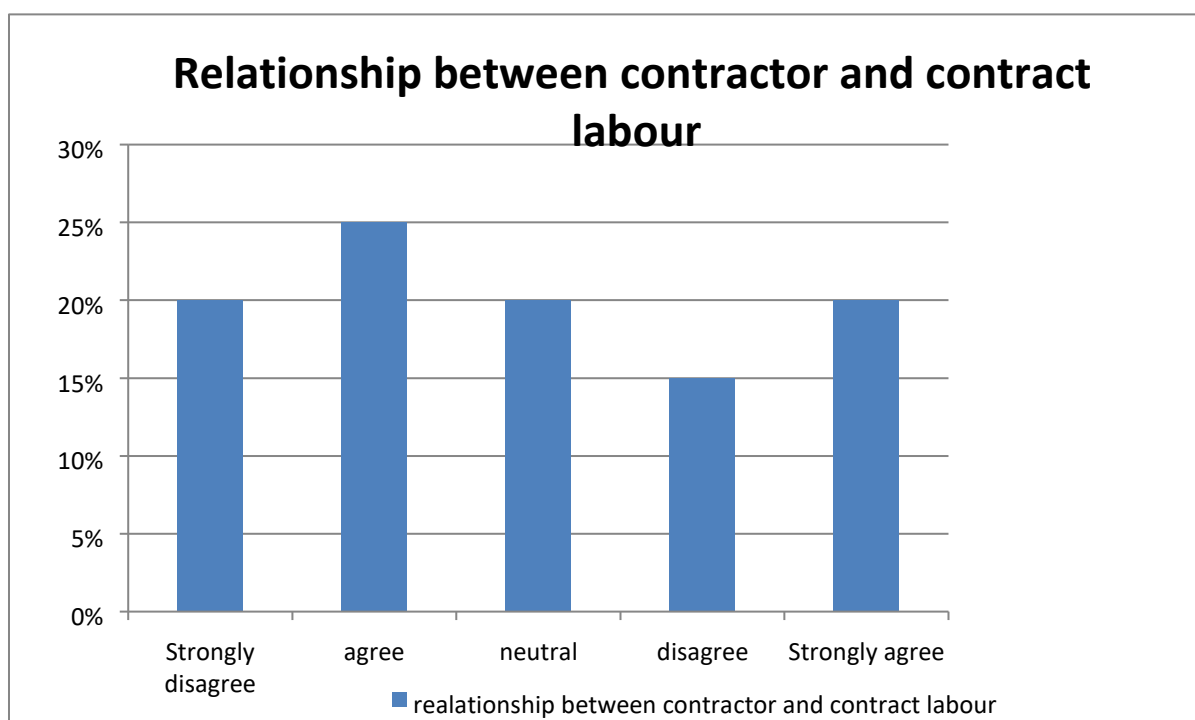
Interpretation:

In the above obtained graph 25% are the respondent are agree with contractor and contract labour.20% respondent are strongly disagree and 20% are the strongly agree. Hence, it can be concluded that, the more respondent are agree with relationship between contractor and contract labour.

Table 5.16: following table indicates Contract Labour Attitude towards organizational goal.

parameter	No of respondant	frequency
Strongly disagree	20	20%
agree	25	25%
neutral	20	20%
disagree	15	15%
Strongly agree	20	20%
Total	100	100%

Contract Labour Attitude Towarrds
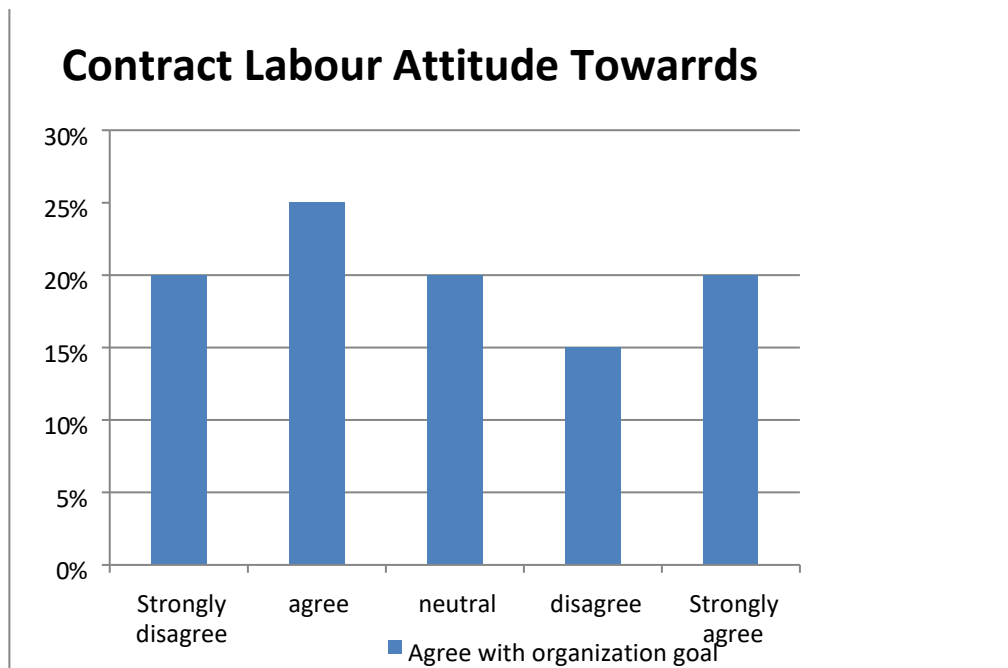
Interpretation: In the above obtained graph 25% are the respondent are agree with organisation goal 20% respondent are neutral and 20% are the strongly with these statement. Hence, it can be concluded that,the more respondent are agree with organization goal.

Table 5.17: following table indicates Contract labour satisfaction towards team and organization .

Parameter	No of respondent	frequency
Highly dissatisfied	25	25%
dissatisfied	20	20%
Neutral	10	10%
satisfied	30	30%
Highly satisfied	15	15%
Total	100	100%

Contract labour satisfaction towards team and Organization
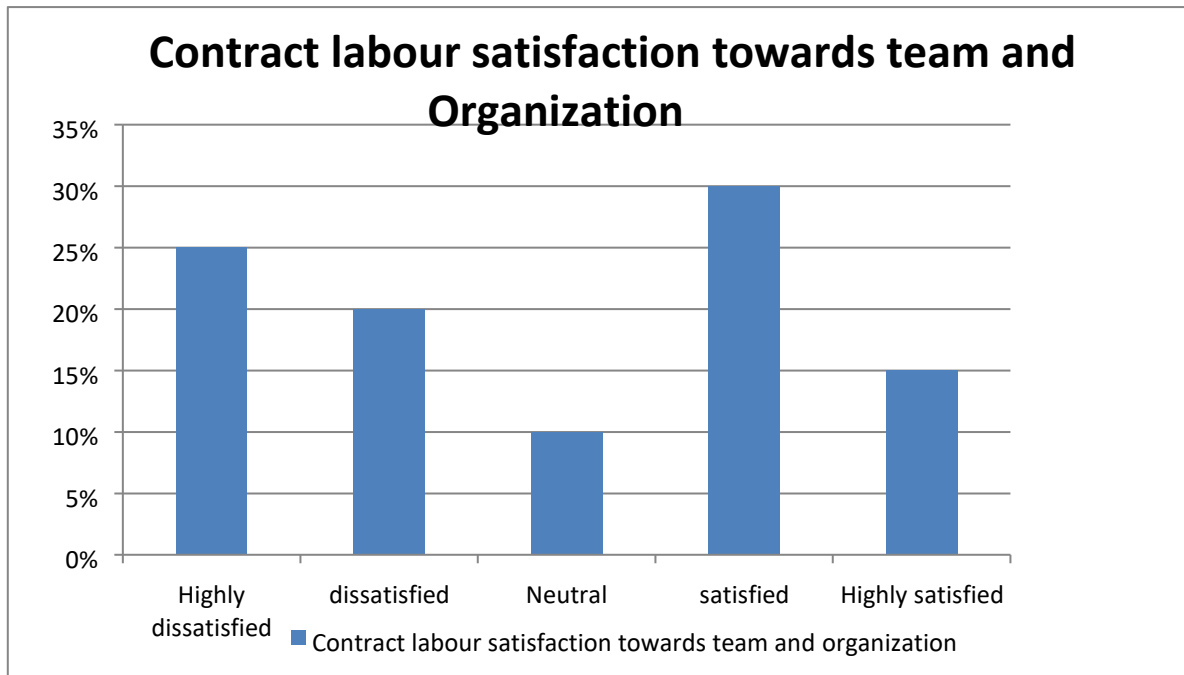
Interpretation:

In the above obtained graph 30% respondent are satisfied respected by your team and the organization. 25% are the highly dissatisfied with this statemen. whereas 15% respondents are Highly dissatisfied with this statement. Hence, it can be concluded that, the contract labour are satisfied with Contract labour satisfaction towards team and organization.

Finding:

1. 100% respondent are working in production departmrnt in organization.
2. 25% respondant are the 6-month working organization 60% respondant are 11 months working in current organization.
3. 20% are highly skilled responses with this statement. 40% are the semi-skilled of engagement contract labour.
4. there are various unit of production under working labour. the maximum labour are the powder plant unit.
5. the 20% are the respondant hours of work. 15% respondant is the working shift realated problem. number of respondant is problem faced by working culture.
6. the 30% respondent are strongly disagreed. 40% are agree with stop the exploitation of contract labour.
7. 15% are disagree with this statement. 30% agree with the appreciation by contractor.

CONCLUSION:

The Central Government has issued a number of notifications prohibiting employment of Contract Labour in different categories of works, job and process as in mines, Food Corporation of India's godowns, port trusts and many other industries/ establishments for which it is the Appropriate Government. The Central Advisory Contract Labour Board has also constituted a number of committees to enquire into the question of prohibition of contract labour system in different establishments. Central Government is the Appropriate Government in respect of industries and establishments for which it is Appropriate Government under the industrial Disputes Act, 1947. A contractor shall be responsible for payment of wages to each worker employed by him as contract labour and such wages shall be paid before the expiry of such period as may be prescribed.

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A Study on Cost Optimization in packaging At HW Wellness Solutions Pvt. Ltd., Hinjawadi, Pune

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Background: As True Elements mainly use 2 types of Primary Packing Material- Pouches and Jars of different dimensions and sizes, we needed to work on different dimensions and sizes of packing material which are most suitable for specific quantities of food products in which they can be stored that are available or Design new packing material size as per requirement to achieve the aim of optimizing cost.

Objective of the Study –

The major objectives of the project "A Study On Cost Optimization in packaging" are,

1. To reduce Logistics Operations Cost by changing the desired size of Primary Packing Material and Secondary Packing Material of various dimensions.
2. To reduce the Primary Packing Material and Secondary Packing Material cost by using proper size packing material.
3. To reduce the amount of plastic used for packing by reduction in size of Packing Material.

Problem Statement –

True Elements use standard size packing materials that leads to many such products which are packed in pouches or jars which are almost half empty or 3/4th empty that further leads to unnecessary extra logistics charge.

Methodology

Stage 1- (Present) Work on different dimensions and sizes of Packing Material in which they pack the products, their Benchmarking, Calculations and taking a note in which corrugated box the product is packed for dispatch.

Stage 2 – Calculations, Sourcing Data, Analyzing, Brainstorming, Trial and error, Costing and Packing material sizes Finalization.

Stage 3 – Moving ahead with the new calculated dimensions and sizes of packing material and Analysis, Shelf life Analysis, Environment Friendly Costing of the products that have been gone through the above stages.

Stage 4 – For validating the results, the new calculations were traced with the past 3 months and from that the cost saved was determined and target is achieved

Data Analysis

1. Different dimensions of Primary and Secondary Packing Material for Food product - Packing Material Benchmarking, Sizes selection.

2. Packaging Material such as Primary (Pouches and Jars) Secondary (Corrugated   Box) – Vendor Selection and Sourcing.

3. Optimization - Cost Saving Analysis from Data Analysis and Feedback.

4. Special Achievements / Recognition –

5. Being recognized amongst the whole organization by Team members and by the Company Guide for the hard work and dedication.

6. Appreciated by Project Heads of True Elements for the valuable contribution and dedication to wards the work.

   Methodology

   a. I have been provided with a list of products that the company manufactures and packs that are small or medium sized in and around 205 products.

2. I'm required to obtain their data through physically measuring the dimension of the packed product amount of quantity stored, empty from the Finished Goods in stores. I'm also required to gather the information about the type of packing material used for the same product.

3. I approach the employees of the companies for the specific products and taking their measurements. I'm required to pitch the percentage of space in package.

4. At first it is noted in which kind of corrugated box the product is delivered to the customer what will be its dead weight, volumetric weight from that what will be the standard delivery charge required forthe same.

5. We the initial/present data is collected from taking this as a reference the future process of designing new dimension was calculated for the packing material.

6. Then the reduced size packing material was kept in various corrugated boxes and the required dimensions of corrugated box were calculated.

7. Post this, after getting the dimensions of Primary and Secondary Packing Material their quotation was asked from the procurement team for costing.

8. After getting the costing the Old cost and New cost was analyzed and the percentages difference was noted between them.

9. For validating the same the last 3 months' sales data was collected fromthe ERP grouped

together and the orders shipped through Delivery channel were filtered and their delivery charge was noted.

10.   Similarly, for the new dimensions the delivery cost and the charged weight was calculated.

11.   Finally, the difference between the two was calculated.

Calculations

1. As 1,13,926 orders were shipped through Delivery Chanel in the last 3 months i.e. December, January and February. For which the charged weight was 8,54,01,966.58 Gm and the cost required for that delivery was Rs.85,88,621 for the same.

2. Hence to reduce the delivery cost we have reduced the Primary and Secondary PM sizes through which we can figure out that for 1,13,926 orders the charged weight is 7,66,93,448.10 Gm and the delivery cost for the same orders is about Rs 76,69,270.76.

3. This creates a difference of Rs.9,19,194.48 (i.e. around 10.72%).

4. We can conclude that by using new Primary and Secondary (PM) we can save the amount of Rs 919194.48 from only one channel.

Present Charged Weight (Gm)	New Charged Weight (Gm)	Difference in Wt. (Gm)	Present Charge DL (Rs)	New Charge DL (Rs)	Difference in Charge DL (Rs)
85401966.58	76693448.1	8708518.48	8588621	7669270.755	919194.4795

Percentage of Logistics cost saved (%)
10.70246876

✓ From this we can   calculated charge per kg-
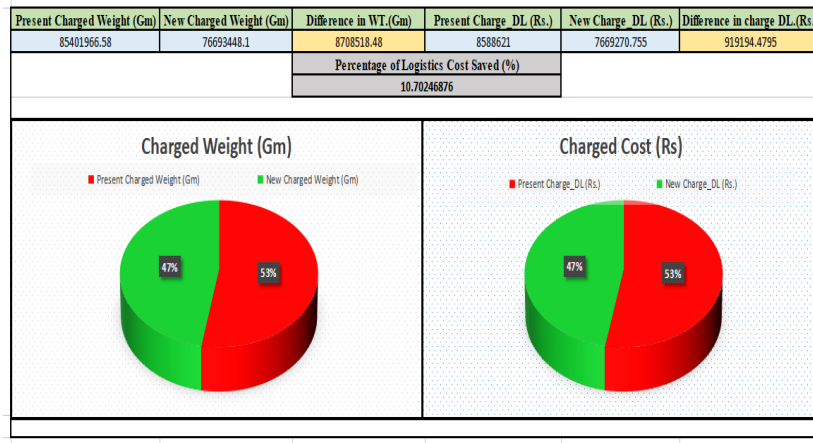
✓ for Example,

• **Present =   Charged Weight / Charge DL (Rs)**

• **New   =   New Charged Weight / New Charge DL (Rs)**

➢ Total Orders 1,13,926 processed through delivery channel.

- In which the charge per kg was Rs.11.37395185 that would change and will be reduced to Rs.9.887625375.
- We can say that behind per kg of supply we will save

  Rs.11.37395185 - Rs.9.887625375

  Rs. 1.486326475

Present Charged Weight (Gm)	New Charged Weight (Gm)	Difference in WT.(Gm)	Present Charge_DL (Rs.)	New Charge_DL (Rs.)	Difference in charge DL.(Rs.)
85401966.58	76693448.1	8708518.48	8588621	7669270.755	919194.4795
		Percentage of Logistics Cost Saved (%)			
		10.70246876			

Charged Weight (Gm) — Present Charged Weight (Gm), New Charged Weight (Gm) — 47%, 53%

Charged Cost (Rs) — Present Charge_DL (Rs.), New Charge_DL (Rs.) — 47%, 53%

Findings and conclusion:

i. As 1,13,926 orders were shipped through Delivery Chanel in the last 3 months i.e. December, January and February. For which the charged weight was 8,54,01,966.58 Gm and the cost required for that delivery was Rs.85,88,621 for the same.

ii. Hence to reduce the delivery cost we have reduced the Primary and Secondary PM sizes through which we can figure out that for 1,13,926 orders the charged weight is 7,66,93,448.10 Gm and the delivery cost for the same orders is about Rs 76,69,270.76.

iii. This creates a difference of Rs.9,19,194.48 (i.e. around 10.72%).

iv. We can conclude that by using new Primary and Secondary (PM) we can save the amount of Rs 919194.48 from only one channel.

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Inventory Managementat Egearz System

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Abstract:

The project assigned to me named "Performing Inventory Management at E gears sytem Pvt Ltd." .

Inventories constitute the most significant part of current assets of a large majority of companies in India. To maintain a large size of inventory, a considerable amount of fund is required to be committed to them. It is, therefore, absolutely imperative to manage inventories efficiently and effectively in order to avoid unnecessary investment. A firm neglecting the management of inventories will be jeopardizing its long-run profitability and may fail ultimately. It is possible for a company to reduce its levels of inventories to a considerable degree, e.g. 10% to 20%, without any adverse effect on production and sales, by using inventory planning and control techniques. The reduction in 'excessive' inventories carries a favorable impact on a company's profit.

INTRODUCTION:

WHAT IS INVENTORY: For many companies, inventory represents a large (if not the largest) portion of assets and, as such, makes up an important part of the balance sheet. It is, therefore, crucial for investors who are analyzing stocks to understand how inventory is valued.

What Is Inventory?

Inventory is defined as assets that are intended for sale, are in process of being produced for sale or are to be used in producing goods. Or in other words, a company's merchandise, raw materials, and finished and unfinished products, which have not yet been sold, are called Inventory.

The following equation expresses how a company's inventory is determined:

Beginning Inventory + Net Purchases - Cost of Goods Sold (COGS) = Ending Inventory

In other words, you take what the company has in the beginning, add what they have purchased, subtract what they've sold and the result is what they have remaining.

Inventory Management

Inventory Management and Inventory Control must be designed to meet the dictates of the marketplace and support the company's strategic plan. The many changes in market demand, new opportunities due

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to worldwide marketing, global sourcing of materials, and new manufacturing technology, means many companies need to change their ry Management approach and change the process for Inventory Control.

Despite the many changes that companies go through, the basic principles of inventory Management and Inventory Control remain the same. Some of the new approaches and techniques are wrapped in new terminology, but the underlying principle for accomplishing good Inventory management and Inventory activities have not changed.

The inventory Management system and the Inventory Control Process provides information to efficiently manage the flow of materials, effectively utilize people and equipment, coordinate internal activities and communicate with customers Inventory Management and the activities of Inventory Control do not make decisions or manage operations; they provide the information to Managers who make more accurate and timely decisions to manage their operations.

The basic building blocks for the Inventory Management system and inventory control activities are:

1. Sales Forecasting or Demand Management
2. Sales and operation planning
3. Production Planning
4. Material Requirements Planning Inventory Reduction

How We Can Be More Effective In Inventory Management

Inventory management is important for keeping costs down, while still meeting regulations Supply and demand is a delicate balance, and Inventory management ensures that the balance is left undisturbed. In r is a pendulum that constantly swings from calm to 60S, when product demand increases the availability decreases.

Inventory management is a balancing act, too much inventory results in additional storage, higher cost of goods, and obsolescence. Inventory remembering two things: not running out, and not having too much.

Inventory management more than about just logistics and getting the right thing in the right place at the right time, it is also about the efficient and effective use of capital. Inventory management is an important part of most businesses because firms need inventory to keep their business running Bus il be able to enjoy a substantial increase in efficiency with the use of inventory management software.

Companies face the challenges of managing their inventory, products, and distribution points Companies will often order more than they need to meet current requirements, taking advantage of price discounts, reduced shipping costs, or reduced set-up costs caused by producing larger lots. The financial knowledge of the importance of proper inventory m has reigned for the past generation of wholesalers.

Inventory management is an effective way to keep track of exactly what product a company has. If a company sells hundreds different products, it is important to know how much of each product they have Inventory management is a key reason why users outgrow QuickBooks, which includes a very basic feature set for inventory management that works fins Tor smaller businesses with a low-volume, single-flavor product line. Inventory management is basically the system that involves storage, handling, shipping and sorting of products and merchandise that a 9 markets, where its functions extend to tracking and checking the materials to and from the place of origin.

Mad inventory management systems are simplified with most Implementations expected to support optional system name, description, capabilities and management address. The objective is not to run out, along with uncertainties in demand and supplier lead times are why we have inventory systems in the first place.

JIT Implementation improves performance through lower inventory levels, reduced quality costs, and a greater customer response. A study indicates that is a vital manufacturing strategy to build to sustain a competitive advantage purchasing may not always be successful even though plant that adopted it have experienced a physical space reduction.

Inventory Control

Inventory control is a process by which an organization keeps track of its product and ensures physical product counts match what is recorded, j control is a practical and commonly used management technique that does not require closing down for long periods. Inventory control is an important part of the manufacturing process, and it is essential for checking what i moving where, the current stock levels, and supplier details. Inventory control is the implementation of inventory policies in a manner that assures that the goals of inventory management are met. Inventory Control is a great solution for warehouses, factories, offices, stock rooms, or any place where inventory is kept. Inventory control is all about knowing what you have, where it is. and its worth. Inventory Control tracking system that gives you up to date information on each item in your inventory Inventory control is one of the key components of Just In Time manufacturing process.

Inventory is a significant investment to most businesses, and knowing its worth at any given time is the key to getting a return on your investment. Inventory control helps increase return on investments by maintaining accurate records of stock on hand and on order providing information. Inventory control is the discovery and implementation of the best answers from a few questions, inventory control maintains the most efficient and least expensive buffer between demand and supply. Problems with Inventory control are usually the result of using poor processes, practices, and outdated support systems. Inventory optimization systems are being used to mathematically calculate where inventory should be deployed to satisfy supply chain management objectives. Inventory control must keep track the number of units

as well as the monetary value of the inventory tough a process of careful and thoughtful inventory management.

Another future technology that may eventually play a role in asset management and inventory control is RFID. RFID technology has recently been used to improve inventory management control systems. There are active, Passive, and semi passive RFID technologies available that can all met for inventory control, with each having a different approach to your Inventory Control will calculate the average unit cost of units as they enter and leave inventory. It also provides customizable inventory and transactions reports for cross checking physical inventory with inventory recorded by basic inventory control.

Inventory control is an important part of keeping a business running smoothly, whether if it is manufacturing firm or a service-oriented industry. Inventory tracking software is designed to fulfill all inventors tracking needs. The effectiveness of inventory control is directly related b how successful a company is in providing high levels of customer service, and low levels of inventory investment. Excellent inventory control is vita:

to the longevity of your business, and tracking your inventory efficiently is essential to maintaining good customer service and manageable inventory levels. Inventory control is one tool that can simultaneously enhance service levels to the customer and enable a company to stay fiscally strong.

Purchasing Management

Purchasing Management covers a wide range of activities which include some of the following:

1. Purchasing Procedures —
2. Vendor Selection -
3. Strategic Purchasing -
4. Vendor Participation -

Purchasing Management is about working with key suppliers to make it easier to do business by developing vendor partnerships. Good purchasing management insures the best possible cost, quality and on time deliveries. Purchasing management might also include asking suppliers to participate in marketplace reviews, analyzing product failures, alternative designs, asking vendors to share information and expertise, just to name a few.

A properly structured purchasing department can help guide your purchasing group in vendor selection and vendor relations to optimize your purchasing do and provide parameters used in vendor selection such as, mandatory order size, lead times, cost, and quality consistence and on time del Good Purchasing Management means asking vendors to participation in product improvement design, or material specification and maximizing vendor relations to provide your company with values to their product or services that cant be measured by standard accounting methods.

Purchasing Management maximizes vendor participation and minimizes our company expense in ordering, receiving, inspecting and maintaining your inventory.

General Issues

Production Planning and Inventory Management

In the following we describe the relation of inventory management to the different planning steps which constitute a capacity-oriented system for production planning.

Production planning is strongly related to the layout type of a considered production system. An empirical analysis of production systems to be found in industrial practice reveals many differences which have a significant impact on the type of planning models that may be applicable in a certain planning environment. There are numerous different layout types, e.g. fixed position layout, process layout (job shop production), product layout

(flow lines), just-in- time production systems, and cellular layout, among others. In each type of production system specific planning problems emerge for which the literature provides an appropriate modeling and solution approachFINDINGS:

To many small-business owners, inventory is simply the stuff they keen on the shelves to generate sales. Despite the investment required to maintain appropriate levels of inventory, they put little effort into monitoring it. But ignorance about inventory can be costly" Inventory control impacts cash flow directly. That's how important it IS," says Helms Mismanage inventory, and you risk having your checking account hit zero The cost of automating has dropped dramatically in recent years as computer hardware and software prices have fallen. A good PC-based system containing all the hardware and software you'll need can be purchased for as little as $10000. If you don't have that amount handy banks and leasing companies do, and they offer a number of cost-effective financing options.

Entrepreneurs who aren't proficient computer users car use training packages to get up to speed; such packages are available from most computer vendors.

The new system produced other benefits: Parts are nearly always on hand when needed. The need for costly overnight shipping has dropped. The amount of unused or unneeded inventory has been reduced dramatically. And employees spend less time scrambling to find parts."We no longer have the truck ready to leave in 20 minutes with someone frantically running around Looking for a part for the booth," Helm says. Track inventory turnover. A good automated system will help immensely in calculating inventory turnovers. Total inventory turnover is stated either in number of turnovers per year or number of days of inventory on hand. For instance, a turnover rate of 12 times per year can also be stated as 30 days of inventory on hand. You should track this number and compare it against industry averages,

which can be obtained from trade groups. If, for instance, your inventory turns 12 times per year and the industry average is 15, your operations may need improvement.

suggestions:

1. Spring clean Review all items that have a low stock turn and look to get rid of them. ...
2. 2 Apply ABC ratings Categorize your inventory. ...
3. 3 Use a Pareto chart This is all about the 80/20 rule. ...
4. 4 Stick to the facts ...
5. 5 Use supply chain analytics for greater insight

CONCLUSION

Many companies will also state that they use the "lower of cost or market. This means that if inventory values were to plummet, their valuations would represent the market value (or replacement cost) instead of FIFO, LIFO or average cost.

Understanding inventory calculation might seem overwhelming, but it's something you need to be aware of. Next time you're valuing a company, check out its inventory; it might reveal more than you thought.

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