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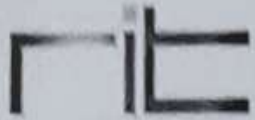
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The Institution of Engineers (India) Kolkata; TEQIP Phase-II Funded,
Approved by AICTE, New Delhi, Govt. of Maharashtra.



Department of Management Studies (MBA)

Academic Year 2020-21
Research Paper Published

Sr. No.	Paper Title	Name of the author/s	Journal / Conference Name	Month and Year	Volume No, Issues No, Page No.	Publisher Name
1	Teachers Perception of Online Teaching during the Covid-19 Pandemic – A Technical Institute Perspective	Dr. Hemlata Gaikwad, Dr. Sushma Kulkarni, Mr. Aniket Pardeshi	Research Compendium YASHOMANTH AN (A Peer Review Multidisciplinary Research Journal)	Sept. 2020	Special issue, Volume 07 Issue 2 Pp:67-72	International Institute of Management Science
2	Unmasking Students' Learning Experiences during Coronavirus Pandemic	Dr. Hemlata Gaikwad, Dr. Sushma Kulkarni	Journal of Engineering Education Transformations	Jan. 2021	Special issue, Volume 34 Issue 2 Pp:219-225	RIT
3	Women Labour Absenteeism and Its Impact on Organizational Productivity	Dr. Hemlata V. Gaikwad and Ms. Nikita Garad	Research Compendium Personnel Today	April 2021	Special Issue Vol. 1 Issue 3 ISSN (Print):0970-8405	National Institute of Personnel Management
4	Implementation of Problem Based Learning in Post Graduate Class for Research Methodology Course	Dr. Seema Desai & Ms. Jyoti Yadav	Journal of Huazhong University of Science and Technology	June 2021	Vol. 50 Issue 6 ISSN 1671-4512	--
5	Trade-off Between Liquidity And Profitability: Case Study of Sun Pharmaceutical Industries	Dr. Manisha Jagtap	IITM Journal of Business Studies	2021	Vol. 9 Issue 1 ISSN 2393-9451	IITM, Janakpuri, New Delhi
6	An Empirical Study of Women's Economic Empowerment and Involvement in Decision Making	Dr. Manisha Jagtap	Indian Journal of Training and Development	2021	Vol. 51 Issue 1 ISSN 0971-5592	Indian Society for Training and Development (ISTD)



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7	Perceptions And Preferences Of Women Investors Towards Stock Market Investment	Dr. Vidya Kadam	Business Administration and Economics	2021	ISBN 978-605-74407-8-5	IKSAD Institute, Turkey
8	Understanding Assembly Production System With The Help Of Manufacturing Centrifugal Pumps	Mr. Shrikant Karanjkar & Mr. Krishnaji Patil	Business Administration and Economics	2021	ISBN 978-605-74407-8-5	IKSAD Institute, Turkey

Teachers Perception of Online Teaching during the Covid-19 Pandemic – A Technical Institute Perspective

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Abstract— The sudden outbreak of Covid-19 pandemic swept the entire world with unprecedented changes. Education sector was among the one most impacted. Millions of students and teachers across globe went virtual due to schools and colleges closures announced by WHO to prevent and minimize the effect of Covid-19. Online teaching became ubiquitous globally because of the pandemic of Covid-19. In India when all educational institutes were closed in March, the delivery of knowledge shifted completely to online mode overnight. This article reflects the perceptions of teachers at a renowned technical institute in Western Maharashtra during their sudden transition to online teaching. An online survey instrument consisting of two sections viz. demographic and technical was used to capture the experiences of the teachers. An important aspect materialized from analysis that the teachers supported this shift enthusiastically and did their best by learning while doing as most of them had not undergone any training to teach online. Most of them reported that online teaching made them learn new skills and competencies.

Keywords— Covid-19 Pandemic, Online Teaching, Technical institute, teachers Perceptions

Introduction

On 11th March World Health Organization (WHO) declared occurrence of a pandemic (Virtual press conference on COVID-19, WHO). In a preventive response to the potential outbreak, all educational institutes in India from pre-primary to highest degree providers were suddenly

asked to close from 16th March 2020. On 24th March 2020, the government of India announced a nationwide lockdown for 21 days as a preventive measure against covid-19 spread. This lockdown was placed when the confirmed positive cases were 500. Along with all transports- rail, road and air, all industries and other services with some emergency service exemptions were suspended with immediate effect. Educational institutions were also closed until further notice. In India, March is an important month in the academic session for all levels of education. Schools are in the stage of closing the session, for some classes like 10th and 12th exams are conducted during this month. But for institutes offering professional course this was just middle of the session. All educational activities had suddenly come to a stop, leaving institutions to fend for themselves. The need to keep continuity, there was an overnight transition from classroom teaching and learning to remote teaching and learning, as students were at home. The purpose of this paper is to highlight the perceptions of teachers of sudden online teaching shift during the pandemic. More specifically, the paper discusses the teachers experiences and responses at Rajarambapu Institute of Technology, a renowned technical institute in Western Maharashtra.

Covid-19's impact on Education globally

According to the UNESCO reports, around 1.38 billion learner's amounting to 80% of the world's learners from pre-primary to tertiary educations were impacted during February and March 2020

By 27 March 2020 approximately 90% of the students worldwide were out of class (Nokhtar and Gross, 2020). In response to these sudden closures, UNESCO recommended teachers to use open online educational platforms and distance learning to reach learners virtually and limit the disruption of education (UNESCO News).

Educational Institutes Closure in India

The teachers and students including other stakeholders were totally unprepared for this sudden closure. On 20th March 2020, the Ministry of Human Resource Development (MHRD) issued a circular requesting all state and union territory administrators to promote digital learning so that students can continue their learning by making full use of the available digital/e-learning platforms during the period educational institutions are closed as a precautionary measure to fight Covid -19. Platforms like DIKSHA and e-PATHSHALA were recommended for schools. SWAYAM and SWAYAMPRAKASH were recommended for higher education. This was the crucial time in education sector in India as board examinations, school admissions, entrance exams for various important educational programs and competitive examinations are conducted during this period. University Grants Commission postponed the university exams. Also, boards like Central Board of Secondary Education, Indian Certificate of Secondary Education and State Boards postponed their exams till further notice. The schools and colleges in cities along with private sector educational institutes started online learning at the earliest but their rural and low-income counterparts' nationwide shutdown completely for not having access to online teaching and learning facilities.

The pandemic has significantly affected technical education as well with there practical courses intended for experiential

learning came to a stop. At, Rajarambapu Institute of Technology(RIT) , the steering committee immediately had a meeting to discuss and plan a strategy to minimize the loss of students .The teachers were asked to adopt online teaching to complete the semester teaching and conducting internal examinations. This was an immediate transition as online teaching had not been instituted on such a large scale earlier.

Rationale for the study

An overnight shift to online teaching had been initiated at RIT, but an analysis of their perceptions is a key to understand the effectiveness and future planning to strengthen the same. This article provides insight on how a technical institute in Western Maharashtra responded to the pandemic and captures the perception of teachers during this shift to facilitate the plan of action in the future years to come.

Data Collection and Methodology

The study adopted a survey based methodology to understand the perceptions of teachers. An invite was sent out online to all teachers of RIT. A total of 119 responses were received back. The data was collected from 27th August to 29 August 2020. the survey instrument consisted of two parts – a demographic profile and the items capturing the perceptions. The perception related items had a Cronbach's alpha of 0.892. Descriptive analytical tools have been used to visualize the perceptions.

Demographic Profile

The following table 1 presents the demographic profile of the respondents. It is observed that maximum teachers are males(83.19%) , between 31 to 40 years of age (51.26%) , possessing a doctorate degree (69.75%), having an experience of 11 years and above (49.58%) . 50.42% of the teachers rated themselves as expert in computer literacy whereas 49.58% have

rated themselves as intermediate in computer literacy. It is important to note that 93.28% of teachers had not undergone any training for online teaching at that time.

Sr. No.	Profile	Number of Response	Percentage
1	Gender		
	Male	99	83.19%
	Female	20	16.80%
2	Age		
	20 to 30 Years	22	18.49%
	31 to 40 Years	61	51.26%
	41 to 50 Years	26	21.85%
	51 Years and above	10	08.40%
3	Educational Attainment		
	Doctorate Degree	83	69.75%
	Master's Degree	33	27.73%
	Bachelor's Degree	03	02.52%
4	Years in Teaching		
	11 years and above	59	49.58%
	6-10 years	44	36.97%
	1-5 years	16	13.45%
5	Level Taught		
	Diploma	21	17.65%
	Degree	65	54.62%
	Masters	33	27.73%
6	Perceived Computer Competency		
	Expert	60	50.42%
	Intermediate	59	49.58%
	Beginner	00	--
7	Training in Online Teaching		
	Yes	08	06.72%
	No	111	93.28%

Source : Survey instrument created by authors

Table 1 : Demographic Profile of Teachers

Findings

The following descriptive tools reports the responses of teachers at RIT of how they perceived the shift to online teaching during the closures due to outbreak of the covid-19 pandemic in India. The state of Maharashtra is one of the most affected state. Despite this the staff at RIT tried their level best to keep the learning continued without disruption.

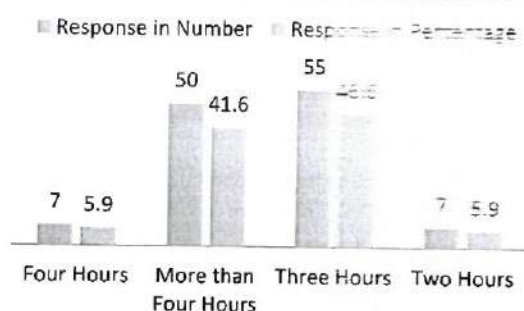


Figure 1 : Classes Taken in each Week

Approximately 88 5 of the teachers have conducted online classes of three hours and more than four hours whereas 5.9% of faculties takes either two hour or three hours online classes in a week. The demographic profile indicated that 93.28% of the teachers had not received any training for conducting online classes but as per demand of the situation these teachers adopted online teaching mode only with an intention to continue student's learning.

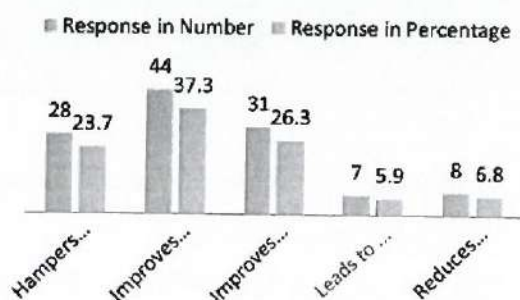


Figure 2 : Expectations of online teaching

Teachers (37.3%) perceive that online teaching improves information literacy of teachers. 26.3% of the teachers feel that online teaching leads to higher academic dishonesty whereas 23.7% of them feel web-based teaching hampers the interactions occurring during the teaching process.

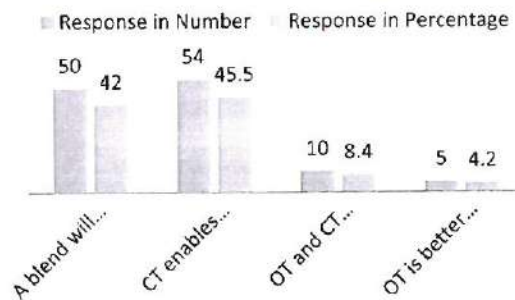


Figure 3: Perception of OT vs. CT

45.4% of the teachers perceive that CT enables more understanding than OT and 50% of them feel that a blend will be the optimum approach. This indicates an important aspect that online teaching is perceived to be less effective in making students learn the expected.

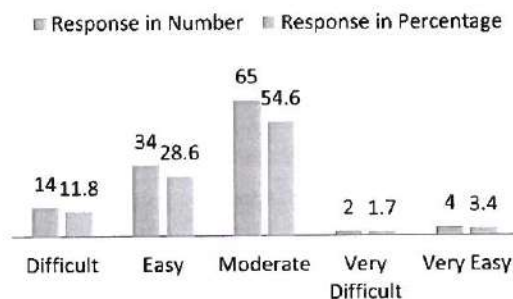


Figure 5: Perception regarding online teaching

54.6% of teachers think that online teaching is moderately difficult and 11.8% of them find it difficult. Only 32% of the teachers feel teaching online is easy. As online teaching is not popular method in India, teachers are not comfortable with the same.

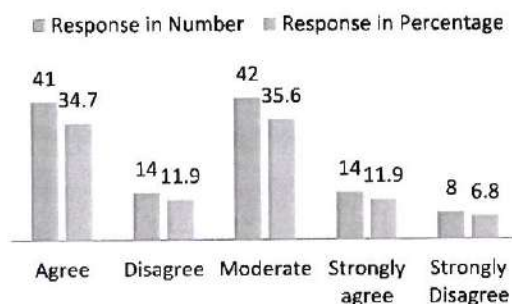


Figure 6: Supporting online teaching

Around 82% of the teachers supported the initiative of online teaching. This is commendable keeping in view the lack of or no training to these teachers when they were instructed to go online. There were lot of hurdles as students to this institute come from rural areas. Internet connectivity, and a smart phone is also not available with many of them. Still making the students learn by providing institutional support is important for them.

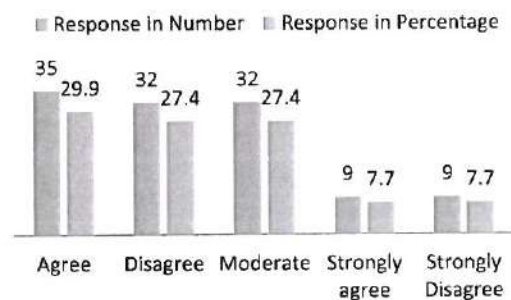


Figure 7: Use online teaching mode earlier

37 % of the teachers had used online modes earlier during teaching 34 % had used them sometimes whereas around 34% had never used online mode of teaching earlier. This explains that though the shift to online mode was sudden the teachers at RIT were not totally unaware. Most of them knew the basics that tools like question prompts, think and share facilitate higher level of student- teacher engagement supporting the findings of Ertmer et al (2011).

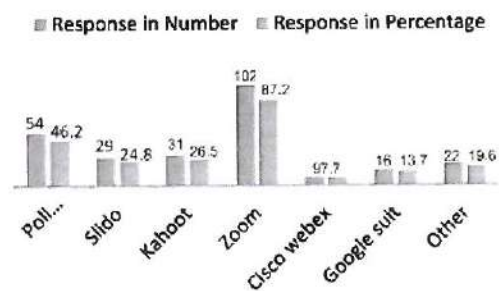


Figure 9: Platform used for online teaching in last semester

39 % of teachers used "zoom" as an online teaching platform. To support the same 21% of them complemented with tools like "Poll Everywhere". It is observed that zoom was the popular application for conducting online classes. 8% of the teachers used other online teaching platforms such as MS Teams, Socrative, Scilab, Moodle, Quiz-Super Computer Clicker etc. An informal interaction revealed that the free availability was the major factor impacting the choice of online platform instead of the quality at that time.

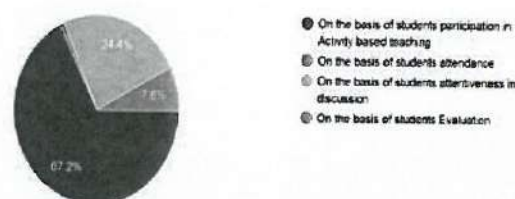


Figure 10: Effectiveness of Online teaching

67% of the teachers perceive students participation in Activity Based Teaching as an indicator of effectiveness of online teaching whereas 24.4% feel students' attentiveness in discussion during online lecture shows the teaching to be effective. Students evaluation and attendance according to them is not a good indicator of lecture effectiveness.

Discussion

Our IT has adapted to the changing educational environment the study intended to capture the perceptions of the teachers at IIT the findings reveal that majority of teachers to teach online despite having strong computer skills as a result they found it difficult they launch by doing as there was no alternative it is a survival instant they just had to jump and win as there was no transition attitude towards online teaching was very supportive and they agree achieving their learning goals despite the radical change

despite of all encountered challenges 68% of the teachers were satisfied with their efforts. Chickering and Gamson (1991) seven principles provide a guide for supporting online education these principles include enhancing student teacher interactions cooperation among students giving immediate feedback active learning emphasising task completion in time conveying high expectations and showing respect for class diversity and ways of learning The present study supports majority of these principals the findings from the study also suggest that a blend of online and classroom teaching is important to remain prepared for uncertain future also it will keep faculties in touch with both traditional and the online teaching methodology this new normal has changed the education field and has come with new paradigms in teaching the schools management and teachers who will understand this and adapt to the innovative ways are going to Sustain in future.

Conclusion

Our IT has adapted to the changing educational environment the study intended to capture the perceptions of the teachers at IIT the findings reveal that majority of teachers to teach online despite having strong computer skills as a result they found it difficult they launch by doing as there was no alternative it is a survival instant they just had to jump and win as there was no transition attitude towards online teaching was very supportive and they agree achieving their learning goals despite the radical change despite of all encountered challenges 68% of the teachers were satisfied with their efforts. Chickering and Gamson (1991) seven principles provide a guide for supporting online education these principles include enhancing student teacher interactions cooperation among students giving immediate feedback

References

1. https://www.who.int/docs/default-source/coronaviruse/transcripts/who-audio-emergencies-coronavirus-press-conference-full-and-final-11mar2020.pdf?sfvrsn=cb432bb3_2
2. <https://en.unesco.org/covid19/educationresponse>
3. <https://en.unesco.org/news/290-million-students-out-school-due-covid-19-unesco-releases-first-global-numbers-and-mobilizes>
4. <https://www.chinadaily.com.cn/a/202001/27/WS5e2e0f0ea31012821727356b.html>
5. Mokhtar F, Gross S (27 March 2020). "Should Schools Close to Fight Virus? These Places Say No". www.bloomberg.com
6. W. Chickering and Z. F. Gamson, Applying the Seven Principles for Good Practice in Undergraduate Education. New Directions in Teaching and Learning, Jossey-Boss, San Francisco, Calif, USA, 1991.
7. P. A. Ertmer, A. Sadaf, and D. J. Ertmer, "Student-content interactions in online courses: the role of question prompts in facilitating higher-level engagement with course content," *Journal of Computing in Higher Education*, vol. 23, no. 2-3, pp. 157-186, 2011.



Unmasking Students' Learning Experiences during Coronavirus Pandemic

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Abstract: Indian education system is consistently evolving since gurukul methods to blended modes, but most of the educational institutes from pre-primary to universities are still following the traditional methods of imparting knowledge. Professional education institutes have adopted blended teaching and learning methods by offering MOOCs through platforms like NPTEL, Coursera, Udemy, EdX and many more. Professors mostly from IITs and from few other institutes are creating these courses in India. A normal faculty from higher educational institute providing professional education is still not creating or delivering courses online. But online teaching remained the only option when educational institutes across globe were closed because of covid-19 pandemic impacting all stakeholders. Hence, it was a need of the time to understand students' perceptions regarding online learning. A number of studies have been conducted on students' perception on learning effectiveness in online teaching since Covid-19 closures of institutes, but very few of them have tried to capture the psychological aspects. The present study has tried to bridge this gap. It is performed in a technical educational institute in western Maharashtra. 271 students from three programs participated in the study. A survey instrument designed by authors was used to collect the responses through Google forms. The article includes an analysis of the students' perceptions and categorizes the benefits and drawbacks identified by the students. It is identified that online learning helps in improving the student's regularity in attending the lectures and is more convenient than physical classrooms. The students perceive online learning creates physical stress. At the same time learning gets hampered by comparatively more distractions and technical difficulties. The insights developed will provide valuable information to faculties and administrators in improving the student learning

Keywords: *Online Learning, Inclass learning, Psychological aspects, Technical Education.*

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Introduction :

Indian education system is consistently evolving since gurukul methods to blended modes. Face to face learning has been the most common method used in India for educating students from nursery to the doctorate level. Ancient India followed gurukul system wherein the students (shishyas) went to the teacher's (spiritual guru) house to learn. It was the residential system whose origin dates back to 5000 B.C. in India. This education system not only helped impart knowledge, but also taught the life skills to the students. The guru taught everything the shishya wanted to learn like Sanskrit, holy scriptures, Mathematics, Metaphysics to arts-related to warfare. This was followed by modern education system where students and teachers get collected at the school, college, or university and the teaching and learning happens. Modern education system was brought to India by Lord Macaulay in 1830s [1]. In this method teaching got confined to classrooms and the link with nature got broken. Abilities like life skills, interpersonal skills got neglected. Last decade saw a major change when Bodies like Central board of secondary education (CBSE) introduced life skills, recommended by World Health Organization (WHO) [2], in their curriculum. Experiential learning model got adopted by most of the schools and colleges. In 2013, Ministry of Human Resource Development (MHRD), came out with the National Skills Qualification Framework [3] – a competency based quality assurance framework providing multiple pathways vertically and horizontally for all levels. Government emphasized use of Information and communications technology (ICT) to make the learning more effective. But, the education system in India is still following the traditional methods of imparting knowledge. With a big digital divide, it was not feasible to move to modern methods of teaching using internet and smart infrastructure.

Technical institutes in India realized at an early stage that the traditional methods of teaching are not sufficient to bring in the desired change in the graduates and making them industry ready. Experiential learning models were used to impart knowledge and skills. In 2014, when India became a signatory member of Washington Accord, Outcome Based Education Model was adopted by engineering institutes in India [3]. This encouraged use of innovative pedagogical tools to achieve the outcomes, but the methods remained traditional. In 2016, the MHRD - Government of India introduced SWAYAM where teachers from premium institutes like IITs, IIMs and Central Universities offered online courses. Nine coordinators were appointed by MHRD to ensure the quality of these courses

where NPTEL is a coordinator for engineering institutes [4]. The introduction of MOOCs by NPTEL brought a major change in the delivery of course content in engineering institutes. It gave an experience of online learning to the teachers and students pan India. Nisha and Senthil (2015) opined that MOOCs and use of technology has changed the face of education in India by providing distance learning through online modes[5]. Bandalara (2018) in his study concluded that MOOCs are playing a significant role in transforming higher education in Asia [6]. This was a positive change, as this enabled students and teachers in engineering institutes across India to avail online courses and improve their learning. Developing a MOOC and offering them still remained a privilege of premier institutes. The faculties at other engineering institutes are still not prepared and ready to create and offer MOOCs – the reason could be lack of infrastructural facilities or their capabilities, as most of them are not trained for teaching online (Gaikwad, Kulkarni and Pardeshi, 2020) [7].

Transition to Online Teaching

On 11th March World Health Organization (WHO) declared occurrence of a pandemic (Virtual press conference on COVID-19, WHO). In a preventive response to the potential outbreak, all educational institutes in India from pre-primary to highest degree providers were suddenly asked to close from 16th March 2020. On 24th March 2020, the government of India announced a nationwide lockdown for 21 days as a preventive measure against covid-19 spread. The teachers and students including other stakeholders were totally unprepared for this sudden closure. On 20th March 2020, the Ministry of Human Resource Development (MHRD) issued a circular requesting all state and union territory administrators to promote digital learning so that students can continue their learning by making full use of the available digital/e-learning platforms during the period educational institutions are closed as a precautionary measure to fight Covid -19. SWAYAM and SWAYAMPRAKASH were recommended for higher education. As a result there was an overnight transition to online teaching and learning. Like teachers, even students were unprepared for this sudden change. There being no other alternative, students had to adapt to this change.

The present article has tried to capture the experiences of students during this shift to online learning. Also, the study compares the In-class and online learning experiences to identify the positive and negative impact of the shift, so as to suggest strategies to make the learning experience most effective for students.

Literature Review

Distance and online learning experiences had been an area of interest by the researchers since decades, but the same had been increased post pandemic. We carried out a systematic literature survey to identify the extent of coverage in India. We used four important and largest databases viz. SCOPUS, Web of Science, JSTOR and Sage database. We used three keywords

((Online+learning+during+covid+19))+AND+((engineering+technology+and+management))+ AND + India)). The

same was obtained by changing keywords like coronavirus for Covid 19 etc.

Following is the summary of results obtained.

Database	Results			
Keywords	Online Learning during covid-19	Engineering, Technology and Management	India	Number of Relevant papers
SCOPUS	618	77	14	3
Web of Science	244	1	0	0
JSTOR	19134	18	13	None
SAGE	770	106	28	3

Table No. 1 : Results of Literature Search

It was observed that a lot of research is being conducted during the period of lock down impacted by Coronavirus, most of it is focussed on online and distance teaching. The learning processes are not much focussed. We analysed the five most relevant papers found in the found from the literature search of four largest databases.

The analysis of these papers reveal that transition to online learning due to the pandemic was a forced one and students preferred physical classrooms over virtual classrooms. The studies also revealed that there is a connection gap which occurs in online learning making interactions limited. Also, the digital divide poses issues of connectivity and digital literacy in some cases.

None of the studies discussed the psychological aspects. Only one or two studies discussed effectiveness of online learning as perceived by the students in higher education. One study was conducted in state of Maharashtra in India revealing health issues reported by the students while learning online.

The summary of the papers is presented in Table No. 2.

Table No. 2 : Summary Of Important Research Papers

AUTHORS	TITLE	RESEARCH METHOD	FINDINGS
Rizun M., Strzelecki A.	Students' acceptance of the covid-19 impact on shifting higher education to distance learning in Poland	Quantitative method using online survey of 1692 Polish graduate and undergraduate students	It was found that the student's acceptance of shifting traditional face to face education to online learning can be best predicted by Enjoyment, and Self-Efficacy. Both Perceived Ease of Use and Perceived Usefulness predict student's Attitude Towards Using and Intention to Use the distance learning.
Pal D., Vanijja V., Parra S.	Online Learning during COVID-19: Students' Perception of Multimedia Quality	subjective experiment were carried out with 54 students, studying in the third year of their engineering curriculum	The study found that the overall multimedia quality provided by ZOOM and Cisco Webex is perceived similar by the students tested on various models with Microsoft Teams performed the lowest.
Sasire O.B., Makhasane S.D.	Global perceptions of faculties on virtual programme delivery and assessment in higher education institutions during the 2020 covid-19 pandemic	Qualitative analysis using interview method was used. Participants were selected by convenience sampling method using online platforms like the online academic community, email, WhatsApp, and the UNESCO website.	The findings of the study revealed variations and disparities in responses to online learning across higher education institutions and national contexts. The study recommended training and re-training of lecturers and students for improving the quality. It also emphasized building infrastructure enabling virtual learning enabling to mitigate similar situation in future.
Mehta M.D., Patharkar J., Dass E.	Analysis of online classroom vs physical classroom learning methods according to 2nd year medical college students' perception	Quantitative method using pre-validated Google questionnaires was used to collect data. Total 120 students participated in the study.	The study revealed that students feel online class is not a feasible and permanent solution. They prefer physical classroom over online as interactions are better in physical classrooms. The students faced challenge of internet connectivity. At the same time they reported health issues like eye strain, headache and nervousness.
Singh A., Sharma S., Paliwal M.	Adoption intention and effectiveness of digital collaboration platforms for online learning: the Indian students' perspective	Quantitative method using a structured questionnaire was adopted to survey and data collection from 324 students studying in Higher Education Institutions of Maharashtra state in India. The questionnaire consisted of 28 constructs.	The findings imply that interactivity, the core constructs of technology acceptance model such as perceived usefulness and cost-effectiveness form positive attitude towards usage of digital platform and their intention to adopt it in near future.

Thus, the present study intended to include the psychological aspects of the learners. Also, apart from comparing the online and physical classroom learning in terms of effectiveness. Also, the study has tried to capture the challenges faced by the learners in online classrooms. The study was conducted at Rajarambapu Institute of Technology, western Maharashtra, India. The respondents were students pursuing engineering (graduate, postgraduate and diploma) and management courses. Figure 1 gives the profile of the respondents.

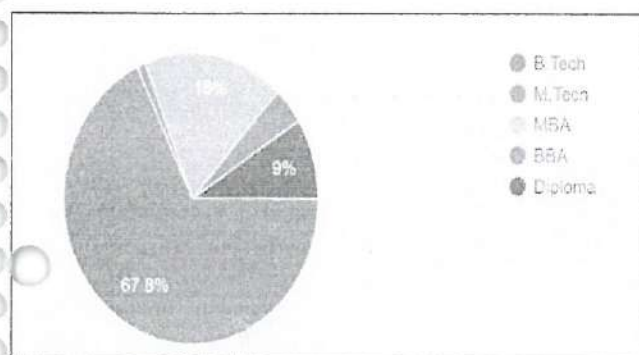


Figure No. 1 : Profile of the respondents

Methodology :

The study being exploratory in nature, a survey instrument containing 23 items on a likert scale was used besides the demographic profile of the respondents. A total of 271 students participated in the study voluntarily. The instrument was validated with a pilot study. The reliability was also checked and the Cronbach alpha was 0.92 indicating that the instrument was reliable. The data was collected through Google forms in the month of July 2020. Principal Component analysis was used to identify the major factors impacting the experiences. A correlation matrix of inter-variables was developed. We estimated the factor loadings to meet the recommended criteria of 0.60 and above. The factors were subjected to direct Oblimin rotation to enable higher interpretability of the dimensions. The Kaiser-Meyer-Munser criterion suggesting Eigen value > 1.0 for identifying important factors was used. Catell's Scree test was referred for identifying statistically significant factors.

Findings and Discussion:

The findings of the study are presented in this section. The perception of students is analysed through the responses obtained during the survey. The psychological aspects were captured through short open ended questions in the instrument. Around 71% of the students had no prior experiences of online learning and had to suddenly transit to the same when pandemic occurred. Figure 2 depicts the experiences of the students in online learning.

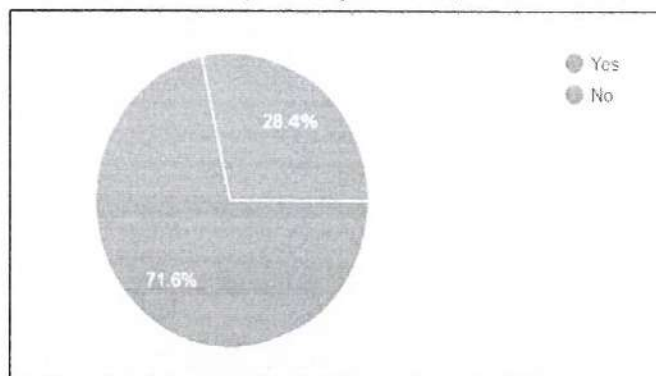


Figure No. 2 Prior experience of online learning

The students having the prior online learning experience used various online learning platforms like coursera, udemy, alison, EdX etc. For learning through other providers they had used ZOOM, Google meet or Microsoft teams also. Figure 3 displays the details of the same.

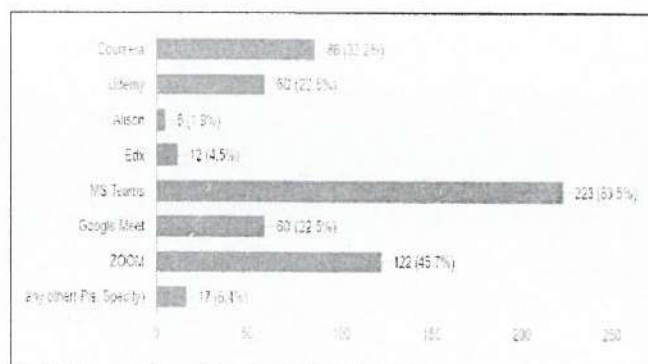


Figure No. 3: Platforms used by respondents for online learning

The students used various devices for accessing these courses. As most of them belonged to rural areas and farmer's families, used their mobiles to log in the courses. Figure 4 shows the details of the devices used to access the courses and learning online.

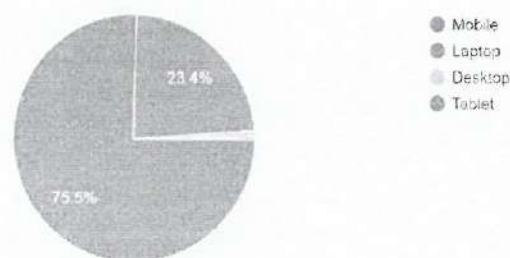


Figure No.4: Device used for accessing online learning

It is observed that around 71% of the students had online learning experience and all of them are tech savvy, as at RIT the educational material, assignments, internal assessments are carried out using various learning management systems.

Effectiveness of Online Learning Vs. In-class Learning

All 23 items were used for PCA. The correlation matrix identified nine items explaining 76% of the variance. The factor loadings of these nine items are depicted in table 3. The highest loading is of level of convenience in online learning (0.852) followed by promoting regularity in attending classes (0.845). Other loadings were between 6 to 7. All loadings were significant with $p < 0.05$. This shows that students perceive two factors viz. convenience and regularity as important factors contributing to effectiveness of online learning.

Item	Loading
Establishes an effective communication	.605
Level of Convenience	.852
Promotes participation and interaction	.563
Effectiveness of individual mentorship and personal attention to learning needs	.624
Promotes regularity in attending classes	.845
Effective exchange of learning and assessment material	.632
Developing Connect and learning with peers/classmates	.635
Off - course interactions with peers for mind freshening	.672
Developing interpersonal and other leadership skills	.616

Table No. 4 : Factor one loadings

The extracted factors reveal that the online learning is more effective as compared to physical classrooms as the students perceive it to be more convenient. Also, they feel that they can be more regular in online classes as compared to physical ones. This brings forth the point that management and faculties should analyse why physical classrooms are not convenient to students and strategies must be planned to achieve the same.

Challenges of online learning:

The second factor consisted of items related to challenges faced during online learning. PCA identified 9 factors concerning the challenges faced by the students. The same were also identified as challenges by the respondents.

The weightage given by respondents are shown in the Figure 5.

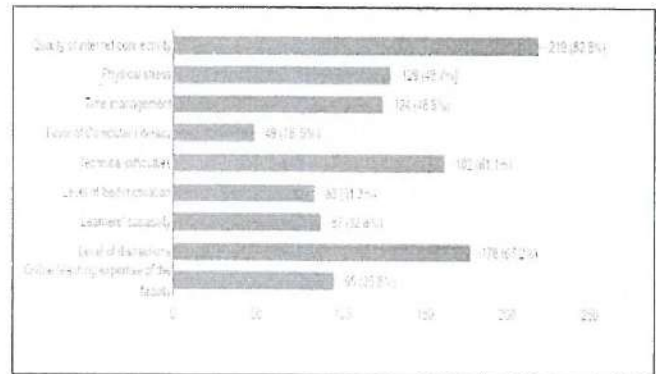


Figure No. 5 : Challenges of online learning as perceived by respondents

The correlation matrix for the challenges also identified nine items explaining 72 % of the variance. The factor loadings of these nine items are depicted in table 4. The highest loading is for physical stress in online learning (0.935) followed by technical difficulties in attending classes (0.903) and Level of distractions being the third important factor with a loading of 0.898. Other loadings were between 6 to 7. All loadings were significant with $p < 0.05$.

Item	Loading
Establishes an effective communication	0.675
Physical stress	0.935
Time management	0.654
Level of Computer Literacy	0.633
Technical difficulties	0.903
Level of Self-motivation	0.704
Learners' capability	0.678
Level of distractions	0.898
Online teaching expertise of the faculty	0.656

Table no. 5 Factor two Loadings

The three identified factors indicate that sitting in front of an electronic device continuously for 4-5 hours cause physical stress in students. At the same time, the students are facing technical difficulties like power shortages, internet unavailability or low bandwidth etc. which poses a challenge to effectiveness of online learning. The distractions are also high which endorses a study conducted by Economist 2020[9].

Psychological aspects of online learning :

Pandemic brought the new normal and students had to shift to online learning safely from home. With different abilities, rural location and varying levels of programs is a challenge in front of educators. Trying to keep students engaged during

online learning is a challenge faced by educators. Students felt that inability to do peer learning, discussions in various places at institute premises like library, lawns, cafeteria because of lockdown brought their motivation levels little lower. But social media platforms like Whats App, facebook etc. reduced these challenges to quite an extent.

The discussion with students revealed that being in a physical class room is a different feeling and helps them remain more engaged. Figure 6 shows the preference level of the student regarding the mode of learning preferred by them. Most of the students have preferred meeting regularly in classroom setting. The students revealed that they feel more comfortable and have more confidence to open up in remote classrooms as compared to physical ones. Entwistle (1998)[10] emphasized that it the 'three Es' – explanation, enthusiasm and empathy are most likely to evoke a deep learning approach to learn among students. And as per the student preferences, the same can be evoked by keeping them in classroom setting.

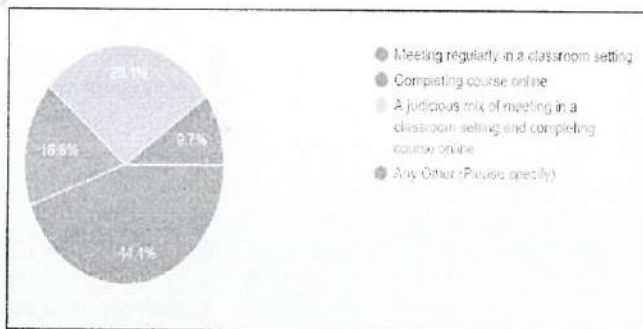


Figure No. 6 : Mode of Learning preferred by the respondents

Even after the challenges faced, the students tried their level best to adapt to the new normal. When asked to rate the performance they have rated their self-performance as shown in figure 7. Most of them feel that their performance in understanding and applying course content is similar in online learning and physical classroom setting. This indicates that if online teaching is made more engaging then it can easily be implemented in future as well with student satisfaction of the same.

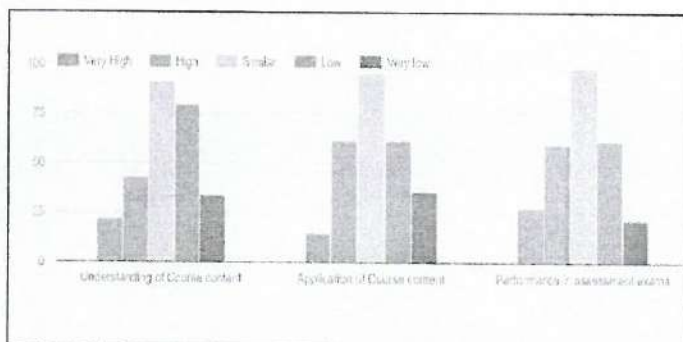


Figure No. 7 : Rating performance during online learning by the respondents

The findings reveal that though online learning was a sudden transition for the students, they have adapted to it successfully with the psychological support from the educators, mentors and their families despite the challenges of missing the environment of a classroom as well as sitting on college campus informally. The discussions also brought in focus that many times the faculty uses videos or audios which help some of them understand better. Some students expect assignments and their assessment to improve their learnings. Learning relies on various psychological processes and mechanisms such as inner drive to understand and perceive new experiences, as well as the motivational desire to explore for positive reinforcement. In order to maximize its outcomes in case of online environments, all psychological aspects that enhance the learning process as mentioned by Wheldall and Riding (2019)[11] must be considered like understanding their learning styles and adapting your pedagogy accordingly.

Conclusion :

The study was carried out to unmask the student experiences during the sudden transition to online learning during the pandemic of Covid-19. It is found that the students find online learning more convenient and enables regularity in attending the classes with important challenges of technical difficulties, distractions and physical stress. Also, the open discussions revealed that if the classes are made more engaging, online learning can really be a game changer. The authors recommends that the institutes should think of incorporating brief activity sessions like meditation, yoga or music to relieve physical stress (Kassymova et al., 2018) [12]. It is also recommended that, the faculties should understand the psychology of learning, the retention time, the learning styles to make their classes more engaging and fruitful. A good mix of audio, video, assignments and presentations can enable an interactive classroom. Though a number of studies were carried out to understand educator's experiences, the study is unique as it tried to capture the learning experiences along with understanding the psychology of students during the transition. Informal discussion with them revealed that during the online learning they missed the emotional connect with their peers and friends.

The study contributes by identifying the important factors of making online learning more effective and the challenges faced by the learners. This will help the education community to take corrective steps to make the experiences more engaging and meaningful. The study was limited to the theory classes experiences by the students, future research may be extended to practical and projects as well. Principal component analysis was used by the researchers to identify the important factors, future researchers may use confirmatory factor analysis to validate the results further.

References

1. MacKenzie, John (January 2013), "A family empire", *BBC History Magazine*
2. https://www.who.int/mental_health/media/en/30.pdf?ua=1
3. <http://wosa.nbaind.org:8081/proceedings/Web%20page/articles/037.pdf>
4. <https://swayam.gov.in>
5. Nisha, F. and Senthil, V. (2015), "MOOCs: changing trend towards open distance learning with special reference to India", *Journal of Library and Information Technology*, Vol.35 ,No. 2
6. Bandalaria, M.d.P. (2018), "Open and distance eLearning in Asia: country initiatives and institutional cooperation for the transformation of higher education in the region", *Journal of Learning for Development*, Vol. 5 No. 2,
7. Hemlata Gaikwad, Sushma Kulkarni , Aniket Pardeshi (2020) , Teachers Perception of Online Teaching during the Covid-19 Pandemic – A Technical Institute Perspective, Yashomanthan, Special Issue COVID-19 Impact On Human Resource Development& Its Alliance With Business Sustainability, pp 67-72
9. https://lostfocus.eiu.com/?utm_campaign=EP2020%20-%20Email%2047%20-%20NEW%20-%20HTML%20-%202020112020&utm_medium=email&utm_source=Eloqua&elqct=272&elqcsid=4331
10. Entwistle, N. J. (1998). Improving teaching through research on student learning. In J. J. F. Forest (Ed.) *University teaching: international perspectives*. New York: Garland.
11. Kevin Wheldall ,Richard Riding (2019), *Psychological Aspects of Learning and Teaching* (Routledge Library Editions: Psychology of Education), Routledge Press
12. G. K. Kassymova, Kosherbayeva Nurali Aigerim, Sangilbayev S. Ospan, Hans Schachl., Nigel Cox (2018), Stress management techniques for students, *International Conference on the Theory and Practice of Personality Formation in Modern Society (ICTPPFMS 2018)*, Volume: 198

Women Labour Absenteeism and Its Impact on Organizational Productivity

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Abstract— Today the textile & garment is one of the largest contributor to India's exports & and largest employer after agriculture (Textile Ministry Report 2015- 2016). Absenteeism is major problem in garment Industries in India and also in Maharashtra (Ministry of Textile Report 2018). It is a major challenge impacting the productivity and performance of these organizations. Organizations use overtime to cover 47 percent of employee absences and while covering for absent employees co-workers are observed to be 29.5 percent less productive (Society for Human Resource Management, 2017). The present study aims to identify the reasons for absenteeism and strategies to reduce the same.

Keywords— Labour absenteeism, Women, Textile industry, productivity

I. INTRODUCTION

Labour across organizations miss the work for a variety of personal or professional reasons. If these absences are planned, the work gets managed, but if they are unplanned or sudden, they weigh heavily on organizational and co-workers productivity. Labour absenteeism is a serious concern in Indian industries as it impacts the overall organization. It is not a management problem, rather it is faced by all industries and must be looked into seriously so as not to jeopardize the organizational prosperity. Public sector industries are the most affected with an absenteeism rate of 10.87 percent, followed by Private Sector (9.79 percent) and Joint Sector (9.37 percent) (Labour Bureau, GOI, 2008-09)

Today the textile & garment is one of the largest contribution to India's exports & and largest employer after agriculture (Textile Ministries Report 2015- 2016). Absenteeism is major problem in garment Industries in India and also in Maharashtra (Ministry of Textile Report 2018). The problem is all the more severe in women labours.

According to the Labour Department of Government of India, Absenteeism Rate is "the total man-hours lost as a result of absenteeism divided by the total man-hours scheduled." Absenteeism is the lack of presence of a worker or employee for a planned work (Johns, 2002 ; Kristensen et al ,2006). The preliminary survey indicates the rate of absenteeism at the selected garment factory is 15%, which is very alarming, as it not only reduces the individual's productivity but has a massive impact on other workers and organizational productivity (Singh et al, 2016). It also impacts the financial Organizations use overtime to cover 47 percent of employee absences and while covering for absent employees co-workers are observed to be 29.5 percent less productive (Society for Human Resource Management, 2017). Employee absenteeism, being a severe financial burden for industries struggling in tough competitive conditions of today, has become an urgent and important issue to be resolved (Senel and Senel, 2012). The effects of high levels of absenteeism levels negatively impact organizations because of the high costs involved with finding alternatives/temporary replacements while trying to maintain and achieve their strategic objectives (Kocakulâh et

al,2016)The previous researchers have studied absenteeism with a focus on the variables that cause an employee to remain present or absent such as job satisfaction and motivation. Other research on absenteeism has focused on the issue from an organisation and employer viewpoint. Although management seeks to nurture and empower employees' levels of engagement and commitment to the organization's strategic goals, workers can get disconnected from their work for various reasons (Shantz & Alfes, 2015).The selected industry employs women workers. The present study aims to identify the reasons for absenteeism and strategies to reduce the same.

II. RATIONALE OF THE STUDY

Labour Absenteeism is one of the major and consistent challenge faced by textiles industries reflecting high impact on performance of organization. The workers attendance at work ensures high productivity and obligation towards improving the performance of organization in terms of efficiency and efficacy of human resource management. Absenteeism is unpredictable and is a serious workplace problem

that occurs at the expenses of both employers and workers. The impact of absenteeism leads not only to financial losses and workers productivity but also benevolence of organization.

III RESEARCH METHODOLOGY

The study was conducted using quantitative tools.A

structured questionnaire was used to collect the data from respondents. Random sampling method was used for identifying the sample. 234 respondents participated in the study. The data was collected from September to December 2020.Descriptive and inferential statistical tools were used to analyze the data collected.

IV DATA ANALYSIS

Table 1 : Demographic Profile Of Women Workers

Sr. No.	Profile	Percentage
1	Age of Workers	
	20-30	53%
	30-40	33%
	40-50	9%
	Above 50	5%
2	Education of Workers	
	School Level	47%
	ITI/Diploma	25%
	UG	10%
	PG	6%
	Below 10th	12%
3	Monthly Income of Workers	
	Less Than Rs. 10000/-	81%
	Rs.10001/- To Rs. 15000/-	17%
	More Than Rs. 15000/-	2%
4	Experience of Workers	
	Less Than 5 Yrs	40%
	5 To 10 Yrs	47%
	10 To 15 Yrs	8%
	Above 15 yrs	5%
5	Job Status of Workers	
	Technical	69%
	Non-Technical	31%
6	Marital Status of Workers	
	Single	77%
	Married	17%
	Separated	6%
7	Nature of Family of Workers	
	Joint	50%
	Nuclear	50%
8	Number Of Family Members Of Workers	
	1 To 2	13%
	3 To 5	65%
	Above 5	22%
9	Other Source of Money of Workers	
	Farming	60%
	Business	18%
	Animal Rearing	22%

Table 2 : Satisfaction Of Workers From Their Salary.

Satisfaction Of Salary	Highly Agree	Agree	Disagree	Highly Disagree	Neither Agree Nor Disagree
No.Of Workers	22%	58%	9%	10%	1%

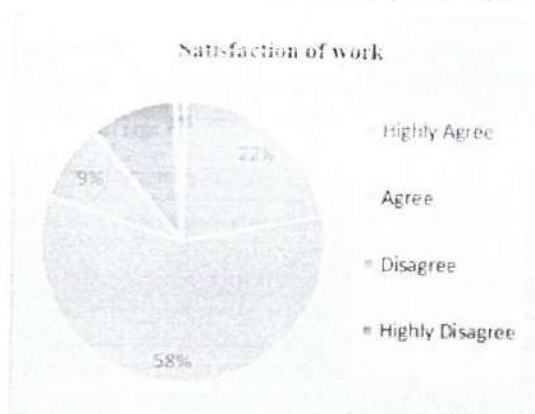


FIGURE 1 : SATISFACTION OF WORKERS FROM THEIR SALARY

Above table shows that satisfaction of worker from their salary 22% workers are highly agree, 58% workers agree, 9% workers are disagree, 10% worker highly disagree and 1% worker neither agree nor disagree. It is interpreted that majority of respondents are satisfied with their salaries.

Table 3: Opinion About Children Unit In Organisation.

Children Unit	Yes	No
No.Of Workers	90%	10%

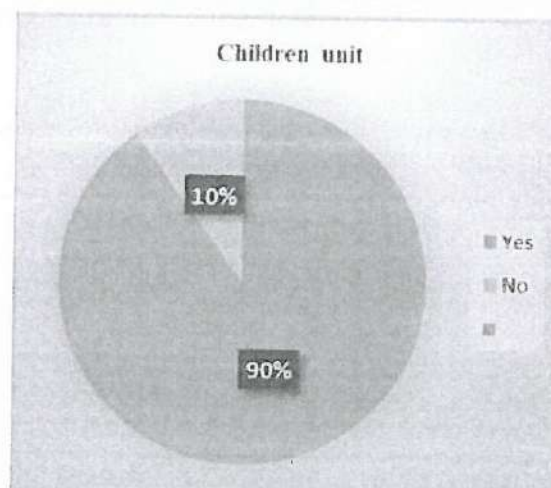


Figure 2 : Opinion About Children Unit In Organisation

Above figure shows the respondents opinion about the children unit present in

their organisation for take care of their children, 90% workers expressed positive opinion about children care unit and 10% workers told negative about children care unit.

Table 5: Training for Improving weakness

Training For Improving Weaknesses	Highly Agree	Agree	Disagree	Highly Disagree	Neither Agree Nor Disagree
No. Of Workers	16%	68%	2%	12%	2%

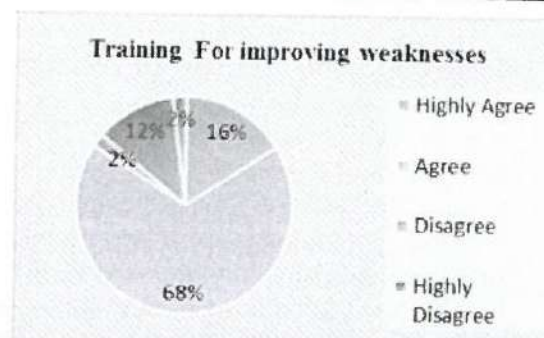


FIGURE 3 : TRAINING FOR IMPROVING WEAKNESSES

Above table shows respondents opinion about the organization of trainings for improving weaknesses of workers, 16% workers are highly agree, 68% workers agree, 2% workers are disagree, 12% worker highly disagree and 2% worker neither agree nor disagree. A majority of respondents agree that training programs organized are helpful in improving their weaknesses.

Table 5: Distance between workplace to home

Distance Between Workplace To Home	2 Km.	2 To 4 Km.	5 To 6 Km.	Above 6 Km.
No. Of Workers	7%	16%	5%	72%

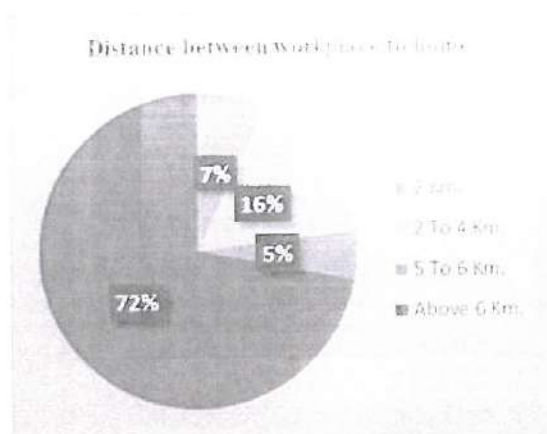


Figure 4 : Distance Between Workplace To Home

Above table shows the distance of respondents house to their workplace, 7% workers distance of workplace to home is 2Km. 16% workers distance between workplace to home is 2-4 Km. 5% workers distance between workplace to home is 5-6 Km. and 72% workers distance between workplace to home is above 6Km. It can be interpreted that majority of respondents are coming to their workplace from a distance of more than 6 kms. This may be a very small distance in big cities, but in rural areas where transportation is a problem it is a very long distance.

Table 6 : Sufficiency Of Holidays

Sufficient Of Holidays	Highly Agree	Agree	Disagree	Highly Disagree	Neither Agree Nor Disagree
No. Of Workers	9%	64%	7%	18%	2%

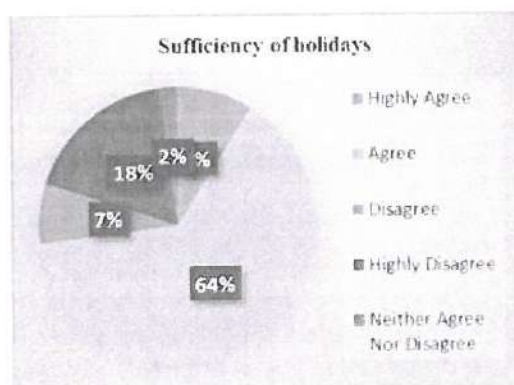


Figure 5 : Sufficiency Of Holidays Above table shows that majority of respondents agree that the holidays provided to them are sufficient.

TABLE 7: Behaviour Of Supervisor

Behaviour Of Supervisor	Of	Excellent	Good	Fair	Poor
No. Of Workers		27%	46%	17%	10%

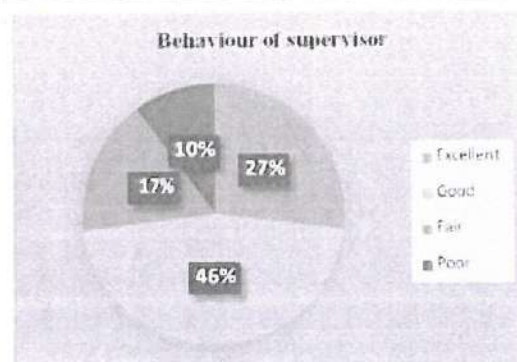


FIGURE 6: Behaviour Of Supervisor

Above table shows that 27% workers opinion about supervisors behaviour is excellent, 46% workers opinion is good , 17% workers opinion is fair and 10% workers opinion is bad.

TABLE 8 : Opinion About Incentive And Allowances

Incentive Allowance	Highly Agree	Agree	Disagree	Highly Disagree
No. Of Workers	22%	63%	6%	9%

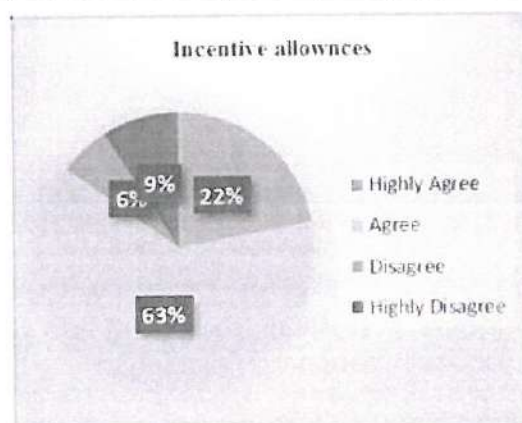


Figure 7: Opinion About Incentive And Allowances

It is interpreted that majority of respondents agree regarding payment of incentives and allowances for their work,

Table 9 : Reasons For Leave Of Workers.

Reasons For Leave	Health Issues	Birth Of Child	Loss Of Loved One	For Hobby	Travelling
No. Of Workers	76%	2%	4%	9%	9%

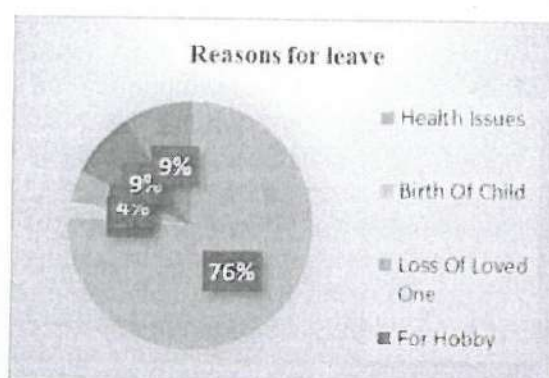


FIGURE 8 : Reasons For Leave Of Workers.

Above table shows the reasons for which workers take leave, 76% workers take leave for health issue from their own and also from their family members, 2% workers take leaves for birth of child, 4% workers take leave for loss of loved one, 9% workers take leave for pursuing their hobbies, and 9% workers take leave for travelling.

IV Findings And Discussion

Table 10: Correlation Between Respondent's Opinion About Hr Policies And Amount Of Leaves Taken

		Amount Of Leaves
Satisfaction With Salary	Pearson Correlation	.593**
	Sig. (2-Tailed)	.000
Opinion About Childcare Unit	Pearson Correlation	.685**
	Sig. (2-Tailed)	.000
Opinion About Trainings For Improving Weaknesses	Pearson Correlation	.820**
	Sig. (2-Tailed)	.000
Distance Between Workplace To Home	Pearson Correlation	.755**
	Sig. (2-Tailed)	.000
Opinion about incentive and allowances	Pearson Correlation	.560**
	Sig. (2-Tailed)	.000

It is observed that the salary, trainings for weaknesses improvement, existence of a reliable childcare unit and distance of house from workplace, and incentives and allowances have a significant positive correlation with the number of absences. Cole et al. (2002) in their study also confirmed that the perception of the company regarding caring about its workers/employees with high level of distinctiveness, uniformity and consensus is generally reciprocated by a lower rate of absenteeism. Hence, the management should work on these aspects by taking the workers in confidence to improve the rate of absenteeism.

The factors and demographic profile correlations were also studied and results are shown in the following table:

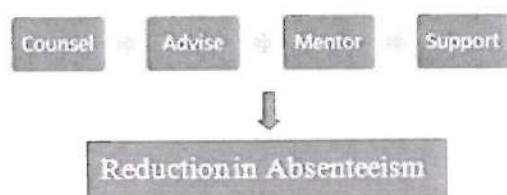
Table 11: Correlation Between Demographic Profile And Amount Of Leaves Taken

		Amount of Leaves
Age	Pearson Correlation	.083
	Sig. (2-tailed)	.409
education	Pearson Correlation	.027
	Sig. (2-tailed)	.785
Monthly Income	Pearson Correlation	.110
	Sig. (2-tailed)	.269
Experience	Pearson Correlation	.330**
	Sig. (2-tailed)	.001
Job Status	Pearson Correlation	.153
	Sig. (2-tailed)	.122
Marital Status	Pearson Correlation	.451**
	Sig. (2-tailed)	.000
Nature of Family	Pearson Correlation	.508**
	Sig. (2-tailed)	.000
No. of Members in Family	Pearson Correlation	.605**
	Sig. (2-tailed)	.000
Other Source of Income	Pearson Correlation	.520**
	Sig. (2-tailed)	.000

It is observed that the marital status, Nature of Family, number of family members and other sources of income of the respondents are significantly correlated with the number of leaves taken by them. Some of these results are in coherence with the study conducted by Cohen and Golan (2007) who studied the impact of demographic variables on absenteeism or turnover intentions. Their findings showed that respondents with less children under 18 were absent more whereas marital status didn't affect the absenteeism. According to Borda and Norman (1997) the number of children and marital status of respondents are a major contributor to absence. Vanden Heuvel and Wooden (1995) in their study also supported that married parents tend to be more absent, irrespective of their gender.

CAMS Model:

From the data analysis, literature review and informal discussions with the management and workers the following model is proposed:



If workers are counseled properly regarding the impact of their absences, advised, mentored and supported for all their concerns empathetically, it will help reduce the absenteeism to a great extent

V Conclusion

Absenteeism is a critical issue faced by organizations for human resource management. The understanding of absenteeism starts with an understanding of its causal factors and outcomes. This article précisés some of the possible causes and costs of absenteeism. This study contributed to the academic research in various ways. Firstly, it proposes a new way of looking towards the problem of 'absenteeism' and the way it can be successfully dealt with. A proper approach with the understanding of these factors will help organizations curb absenteeism.

References

- [1] Şenel, B. & Şenel, M. (2012), 'The Cost of Absenteeism and the Effect of Demographic Characteristics and Tenure on Absenteeism', *Interdisciplinary Journal of Contemporary Research in Business*, 4(5): pp. 1142-1151
- [2] Cohen, A. and Golan, R. (2007). Predicting absenteeism and turnover intentions by past absenteeism and work attitudes, *Career Development International*, 12(5), 416-432.

- [3] Johns, G. (2002). Absenteeism and Mental Health, in:
Jay C. Thomas ve Michel Hersen (Eds.),
Handbook of Mental Health in The
Workplace (ss. 437-455), Sage
Publication, Thousand Oaks, CA..
- [4] Kristensen, K., Juhl, H. J.,
Eskildsen, J., Nielsen, J., Frederiksen, N.
and Bisgaard, C. (2006), "Determinants of
Absenteeism in a Large Danish Bank",
International Journal of Human Resource
Management, 17(9): 1645-
1658
- [5] Borda, R. G. and Norman, I.J.
(1997). Factors influencing turnover and
absence of nurses: A research review,
International Journal of Nursing Studies,
34,
385-394
- [6] VandenHeuvel, A. and Wooden, M.
(1995). Do explanations of absenteeism
differ for men and women?. Human
Relations, 48(11). 1309-1329.
- [7] Cole, M. S., Schaninger, W. S., &
Harris, S. G. (2002). The workplace social
exchange network. Group and
Organization Management, 27, 142-167
- [8] Kocakülâh, M. C., Kelley, A. G.,
Mitchell, K. M., & Ruggieri, M. P. (2016).
Absenteeism problems and costs:
Causes, effects and cures. The International
Business &
Economics Research Journal, 15(3), 89-96
- [9] Shantz, A., & Alfes, K. (2015). Work
engagement and voluntary absence: The
moderating role of job resources. European
Journal of Work and Organizational
Psychology, 24,
530-543.
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Implementation of Problem Based Learning in Post Graduate Class for Research Methodology Course

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Abstract: Teaching Learning process involves different activities. Problem based learning is student centred, motivational and skill development teaching learning dynamic classroom activity. The paper focused on problem based learning applied on research methodology PG course. In this PBL based course, students achieve in depth knowledge of research methodology which is more suitable for their research. This activity helps students to acquire knowledge through problem based learning and case studies. The RM course PBL activities are designed in such a way that students gain step by step in depth knowledge of research methodology steps, testing, evaluation, presenting and publishing the work done. This PBL course increases the experiential learning of research methodology and engage the students by providing the ownership of the course.

Keywords: Research methodology, Problem based Learning, case study, course, learning.

1. Introduction

Problem based learning is the student-centred learning. In this activity teacher roll changes from content delivery to facilitator. Many researchers proved that PBL supports for experienced learning as students undergo learning by going through guided path. Project based learning applied for the PG course had structured and strategic learning. In problem-based learning students undergo design, develop and provide hands on solution to the problem. PBL empower the students as skills of the required course. Many researchers proved that well designed PBL increases the students' skills in that course. PBL also supports for solving the complex real-world problems. For post graduate students' problem-based learning provides the opportunity to tackle the open-ended problems and offers the different ways of learning. The PBL is collaborative teaching and effective activity. Research methodology had applied problem-based learning activity for first year M. Tech course. Problem based learning is effective collaborative teaching tool implemented for first M. Tech., First semester course.

Literature Review:

Traditionally STEM education involves highly selective schools, consisting brilliant and academically strong

students. The report, particularly focused on inclusive environment, such as low-income student, female, minority etc. Barbara and her colleagues reported about the selective and inclusive schools, Inclusive schools survey reports that lab-based science learning is done effectively but workplace learning is not done effectively. Few STEM schools focussed on technology, but workplace learning is on least priority. A report published in 2010 by national science foundation for STEM learning, it showed that STEM schools should be small enough that teachers and students can do effective collaborative work. In PBL Students must be able to solve real world problems. Critical thinking using of available resources is developed in students. STEM subjects offer an integrated curriculum in which two or more courses are linked together. Instruments are involved in emerging technology, which will increase the resources in STEM Schools. By using the internet, students will connect the outside world in digital STEM school. Students and professional mentors are collaborating for effective learning in STEM schools. Inclusive STEM involves looping methodology Interaction of minority students with minority mentor will give very positive outcomes in a question answer session between role models and students is also very effective. Project selection and design are the main part of PBL Model. Project based learning and interdisciplinary approach provides capstone projects.[1]

James Taylor says that PBL is a primary vehicle for effective learning in real world project for students. They found out the effective technology tool, Interaction of students and teachers is a very effective tool. Instead of text book learning, PBL involves learning of course subject with team work which enhances the collaboration, communication and critical thinking skill of the student. In this report the different technology tools are analysed. The CatLog has seventy different technological tools which are analysed. The analysis found that collaboration tools are very effective compared to content development, assessment and planning tools. This method, for completion of project follow up questions are reviewed. Most of the students reported that specific collaboration tools are very important. The report also suggested that interaction between student interest and teacher effectiveness is 0.7884. The PBL learning includes time management for a project which is very useful for the

teachers. Collaboration, assessment and content developing are very effective tool in PBL learning.[2]

Best practices newsletter of SREB report says that regular teaching techniques such as listening and learning the things are not enough for students' deep understanding of the course. Critical thinking and soft skills of students were improved by involving the students in team formation, solving real time problem formation. Most of the students, did not like to attend the class passively and only listening to the lectures. In PBL, author suggested a project for students to explore various foods and the nutritional value of the food, in the magazine. In health class students analysed the nutrition facts, they test the food effect on the individual's health. In social studies class students studied about to promote the food product in the real world and finding out the different business opportunities. In science class, students collect all the good information for the magazine. Project based learning involves a crossover between two or three subject areas. Definitely it is beneficial than learning different subjects.[3]

Brandon Goodman, J. Stivers, PHD reported that Project based learning or PBL Involves learning activities and real-time problem-solving task. PBL is nothing but a teamwork, which is done to achieve a common goal. Some important skills such as communication skill, presentation skills and time management skills, research and inquiry skills, students are judged individually by analysing this skills in depth of understanding the topic and quality of final product produced. PBL Activities are based on real world task. The teacher is just a facilitator and who just shows the way to solve the problems rather than teaching everything. The traditional roles of the students, teachers and parents are changed. Internet plays a very important role in learning new things. A teacher who previously provides the knowledge will change the role, now they are mentors and coach the students, students share the projects on a web page and communicate with the outside world.[4]

Strategic plan 2017-2022 Says that Carlos Charter learning center (CLC) In California, analyses the new approach for the education the strategic plan gives guidelines and priorities for CLC. To meet CLC's current need, the strategic plan should be corrected and must be used repeatedly. CLC learners said real world problems and enhance the critical thinking skill which gives positive attitude to the society. A desired result will get by using the effective strategies some keys were found. In gamified classroom, typical subjects are learned by point scoring, making competitions with others, some concepts can be learned by using computer games. In service-learning students build the future project that helps the society, blended learning involves rotation, flex A la carte and enriched virtual. In flipped classroom, recorded lectures will help to complete the work and for solving the assignments to the students. The teacher presents a playlist for each student which guide the students solve the assignments and tests. In playlist student can interact with the teacher and finish their assignment.[5]

Davies, John et. al. reported that PBL is a very effective method of learning. He introduced two models one is project based which involves engineering students and others is case oriented model in the medical field. PBL involved project approach and case approach. A case-based

study used in the social and medical field. Using the collaboration technique engineering students share their knowledge. While medical students share their experience, thoughts with other at the end of the session, means knowledge will not remain individual. In problem solving method engineering students find more innovative ideas for the project interdisciplinary curriculum involves knowledge, scientific approach and different methods of learning. By analysing both these methods, social and professional requirements meet the learning and teaching aspects.[6]

John W. Thomas reported about teaching and learning model known as PBL. The author concluded that students use effective work habit either individually or in a group while solving the problems apply critical thinking. In this methodology, students boost their work habit, critical thinking skill and also productivity overall this method includes positive attitude and ability of learning new skills of students. The author described about interpretive research. PBL is a better learning methodology than traditional learning method and very effective way to boost cognitive skill.[7]

2. Problem identified:

- Teacher taught the research methodology step by step but with separate points and case studies. E.g. Problem identification separate points, Introduction separate and literature review on another point.
- Students not processed through all stages of research methodology.
- Research methodology pedagogical effectiveness of course is not analysed by faculty.

The following factors on the research methodological course for post graduate students.

- Students attendance and maintain the course interest
- Teacher interest to process the students' upto publication.
- Outcome of the course measured by last point of research methodology i.e. publication.

2.1. Objectives:

- Implement problem based learning in in Post Graduate class, first semester course Research Methodology.
- Stimulate evaluation of research methodology course learning with rubrics method.
- Analyze all students have understand every step of research methodology course.
- Remove fear from students to publish the work done.
- Introduce open ended problems and increase the skills.

3. Research Methodology:

Implemented Problem Based Learning in Post Graduate Class for Research Methodology Course. To overcome the problems identified in research methodology course effectiveness problem-based learning is finalized through literature review. The Problem based learning was conducted at Rajarambapu Institute of Technology affiliated

to Shivaji University, Kolhapur for post graduate students of Electronics and Telecommunication department. Total 23 post graduate students are implemented problem-based learning. Students' evaluation test was conducted through publication as well as through feedback process. The feedback had conducted at the beginning of the course, middle of the course and at the end of the course.

The statistical analysis is used to evaluate the students' performance in research methodology course. The final evaluation was done by rubrics method to analyze the students' publication work.

4. Problem based Learning:

Problem based Learning had applied for the PG course research methodology. PBL of research methodology had divided into 13 steps and in-between evaluation, discussion and learning by doing steps. PBL Steps of Research methodology course are as follows:

Step 1: Problem identification

Every student had identified the problems. After identification the problems, had discussed the problems with peers and faculty. After peer and faculty discussion had fixed and finalized the problem. Students had formulated the research problem and write problem statements. Students had written the research objectives.

Step 2: Literature review

First students had written the background and significance of the research. Background of research had included scope of study, issues and relevant history of problem selected. Students did the literature survey for selected problem and had written literature review and references for selected problem. Students reviewed related research papers and evaluated the papers, thesis and reports.

Step 3: Research design

Research design is the blue print of the research work. Students develop the research design and discuss and verify with faculty. Research design includes all the research steps, analysis, methods, evaluation, presentation and report writing schedule with method and timeline. Students had defined the dependent and independent variables of research problem. Selection of variables are very important for measurement of research work.

Step 4: Data collection

Data collected as per research design. For data collection students used Google app, Google drive and WhatsApp, etc. For critical case studies students used hard questionnaire. Primary as well as secondary method had followed for data collection. Collected data had useful for testing of hypothesis.

Step 5: Data Analysis

Collected data are recorded and analysed using Microsoft excel as well as statistical method. Variable relationships had estimated. Quantitative data analysis had followed by students.

Step 6: Interpretation of Data

Analysed data are interpreted and discussed with faculty and peers. Conclusion of case studies had written.

Step 7: Research report writing

Students had written the reports of case studies. The different report format had provided for students. Reports are published with Lap Lambert book publisher. Students then

understand the review process as well as formatting of reports as per requirement of publisher. This reduces the students fear to publish the work. Font size, style, justification, spelling and grammar had checked by students and faculty.

Step 8: Presentation

Report had presented in front of all students and available faculty. Presentation rules had followed and discussed with students.

Step 9: Study of research related software

Students discussed research related software e.g. SPSS etc. Students must discuss any other research software; this will promote the students for lifelong learning.

Step 10: Study of IPR

Students are aware about intellectual property rights. Guest lecture had organized for IPR. Indian patents, trademarks, copy rights and US patents had discussed and students had evaluated few IPR.

Step 11: Plagiarism Testing

Students report had tested on Turnitin and allowed less than 15% plagiarism only. This process increases the students' confidences and reduces the copy paste material.

Step 12: Proposal writing

Guest lecture had organized for proposal writing. Sample proposal had written by students.

Step 13: Acknowledgement

Acknowledgment should be short and limited to involved members only. Students must understand that the reports are exam oriented and should not be devoted to anybody. But few students devote the reports, this is also the one of the research topics.

5. Results and Discussion:

Problem based learning is evaluated continuously by teacher. For the evaluation the rubrics had designed.

Table1: PBL evaluation rubrics

Criteria	Exemplary (Marks)	Proficient (Marks)	Developing (Marks)	Unacceptable (Marks)
Participation	Student proactively participated in preparing PBL, conducting research. Recording observations, withdrawing conclusions and/or asks questions more than once per week. (8.1-10)	Student committed few mistakes while conducting PBL which he could correct after guidance from course teacher. (7.1-8)	Student committed few mistakes while conducting PBL which he could not correct after guidance from course teacher. (4.1-7)	Student never participated in preparing PBL conducting research, recording observations, withdrawing conclusions and asking questions. (0-4)

Writing/presentation Skills	All content points of PBL are systematically written and presented. (8.1-10)	71%-80% content points of PBL are systematically written and presented. (7.1-8)	61%-70% content points of PBL are systematically written and presented. (4.1-7)	Below 60% content points of PBL are systematically written and presented. (0-4)
Inferring by Q-A	Shows a superior understanding of the PBL. (16.1-20)	Shows 71%-80% understanding of the PBL. (14.1-16)	Shows 61%-70% understanding of the PBL. (8.1-14)	Shows Below 60% understanding of the PBL. (0-8)
Timely Submission	Completely organized submission of PBL report in successive week. (8.1-10)	Completely organized submission of PBL report after two weeks. (7.1-8)	Completely organized submission of PBL report after three weeks. (4.1-7)	Completely organized submission of PBL report after one month. (0-4)

Student performance had improved by clearly showing them how their work is assessed and what is expected.

- Students become better judges of the quality of their own work.
- Students have more informative feedback about their strengths and areas in need of improvement.
- Students become aware of the criteria to use in providing peer feedback.
- Criteria are determined in specific terms.
- Assessment is more objective and consistent.
- Amount of time spent assessing student work is reduced.
- Effectiveness of instruction is examined using multiple methods.

The threshold-based course outcome attainment had calculated. The threshold had set for 60%. The course attainment is given in table. All the course outcomes are achieved. The graphical representation of course outcome is shown in fig.1.

Sl. No	CO Code	CO Statement	Threshold based Attainment
1	CO1	Demonstrate the knowledge of research process	76.00
2	CO2	Apply statistical methods for analyzing the data and interpret results	82.67
3	CO3	Use research related software for analyzing the data	68.00
4	CO4	Illustrate the Intellectual Property rights	63.33

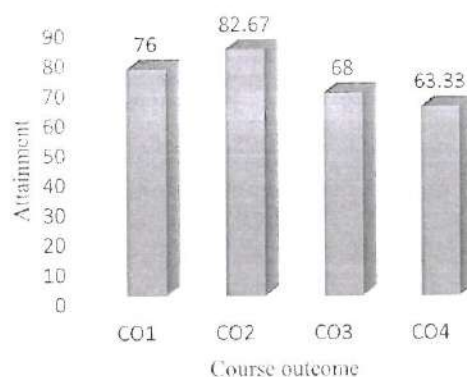


Fig. 1 CO attainment of Course

Students' feedback had collected. The 14 students participated in feedback activity. The strength of the class had 14 students out of 18. The analysis of the feedback had for direct attainment. The direct feedback for course outcome based on activity problem-based learning is given in figure. 2

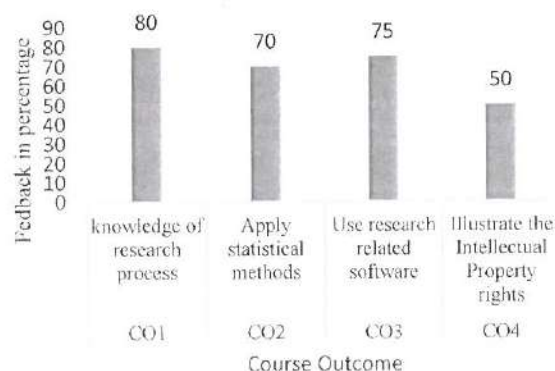


Fig. 2 Direct Feedback for Course Outcome

All PG students agreed to recommend the PBL activity to other courses. All students enjoyed the course.

6. Statistical Analysis:

The course activity had analysed using statistical tools. For statistical analysis the data had collected by questionnaire method.

Table2: The questions are given below:

Questions	Neutral [1]	Disagree [2]	Agree [3]	Moderately Agree [4]	Strongly agree [5]
Undergo all research steps	☐	☐	☐	☐	☐
Handled case study	☐	☐	☐	☐	☐
Written book	☐	☐	☐	☐	☐
Recommend PBL	☐	☐	☐	☐	☐

Learning by doing in PBL	[]	[]	[]	[]	[]
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For statistical testing the normal T test had used to test the feedback of students. The T test proved the PBL activity is effective activity.

7. Outcomes:

The outcome of problem learning activity is that PG students applied research methodology on real life problems and published the books on the case studies. All the case studies are available online. Students have confidence on use of research methodology. Few case studies are listed below:

- i. E Waste Management, ISBN No.: 978-3659806834
- ii. Plastic Waste Management, ISBN No.: 978-3659813160
- iii. Ethics of Engineering students towards teachers, ISBN No.: 978-3659803406
- iv. Paper Waste at Institute, ISB No.: 978-3659803925
- v. Survey on poverty in selected groups and regions, ISBN No.: 978-365980701
- vi. Various problems due to excess use of bikes at an Institute, ISBN No.: 978-3-659-81093-0.
- vii. Road issues in Islampur city, ISBN No.: 978-613-9-81756-6.
- viii. Water Pollution in Rural Area, ISBN No.: 978-6139820399.
- ix. Garden maintenance in RIT campus, 978-613-9-81475-6.
- x. Utilization of fertilizer by the farmer, ISBN No.: 978-3659970955.
- xi. Skill identification among PG students, ISBN No.: 978-6202004701.

The reports had uploaded on Moodle server for assessment. The link of the Moodle server is given below:
<http://210.212.171.173/moodle/mod/assign/view.php?id=28045>.

8. Conclusion:

Problem based learning in postgraduate class for research methodology course is very useful, helpful and effective teaching activity proved through feedback and statistical analysis. Research methodology fundamentals were clear to post graduate students by implementing problem based learning. This activity helps post graduate students to develop long term knowledge retention and apply research methodology skills in the real-world applications. This activity helps students to promote deep learning and involve open ended questions.

References

1. Adolfo Cobo, Olga M. Conde, Jesus Malrapeix (2011) On-line role-play s a teaching engineering studies, Journal of Technology and Science Education, 1(1), 49-58.
2. Aidan O'Dwer (2012) A teaching practice review of the use of multiple-choice questions for formative and summative assessment of student work on advanced undergraduate and postgraduate modules in engineering, Dublin Institute of Technology, ARROW@DIT, 4(1), 1-12.
3. Genevieve Marie Johnson and Julia Ann Johnson (2006) Learning style and preference for online learning support: Individual quizzes verses study groups. ED-Media Proceeding, 1861-1868.
4. Maria Asuncion Rojas and Jhonny Villafuerte (2018) The influence of implementing role-play as an educational technique on EFL speaking development. Theory and Practice in Language Studies, 8(7), 726-732.
5. Mohad Firdaus Mohd Ab Halim, A. M. M. Nor, A. A. Badari, A. F. Z. Abidin, K. A. Kadir, A. Adam, S. H. Mohammad, M. H. Harun (2019), Reseducational kit the development of an electronic quiz board that test engineering students' knowledge on resistors concept in electrical circuit, International Journal of Recent Technology and Engineering, 8(1), 202- 207.
6. Shawna Shapiro and Lisa Leopold (2012) A critical role play for role-playing pedagogy, TESL Canada Journal/Revue TESI DU Canada, 29(2), 120-130.
7. Stephan Krusche, N. V. Frankenberg, Sami Afifi (2017), Experiences of a software engineering course based on interactive learning, Bernd Bruegge SEUH, 32-40.
8. Suzanne E. Weinstein and Shao-Wei Wu (2009) Readiness assessment tests verses frequent quizzes: student preferences, International Journal of Teaching and Learning in Higher Education, 21(2), 181-186.
9. Tim W. Lowe (2015) Online quizzes for distance learning of mathematics, Teaching Mathematics and its Applications, 34(1), 138-148.
10. Zina Adil Chaqmaqchee (2015) Student's perspective on formative assessment: Quizzes and discussion as ongoing process in Higher education, American Scientific Research Journal for Engineering, Technology and Sciences, 13(1), 160-177.

Acknowledgement

Electronics and Telecommunication engineering department of Rajarambapu Institute of Technology encouraged to implement Problem learning in post graduate class. We thankful to our college and module coordinator who provided backing and comprehension to implement the problem based learning. We express gratitude to Dr. M.S. Patil(H.O.D.ETC Department), Dr. M.S. Kumbhar(H.O.P. P.G. Electronics) and Prof. R. T. Patil (H. O. P. P. G. Digital System design) and Prof. S.S. Patil for unceasing support to implement the problem based learning. We would like to indicate our credit to the P.G. Electronics and P.G. Digital System students to actively participating in the research methodology course. We also thankful to D. Y. Patil Polytechnic staff to support this manuscript to expedient for success of the course.

TRADE-OFF BETWEEN LIQUIDITY AND PROFITABILITY: CASE STUDY OF SUN PHARMACEUTICAL INDUSTRIES

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ABSTRACT

The present study is carried out to investigate the trade-off between liquidity and profitability. The main motive any business firm is to earn profit and for earning profit they need to manage their assets properly. The firm should be ready with its asset that are liquid to meet its short term i.e. current liabilities. Effective working capital management should be employed by the business firms to ensure trade-off between liquidity and profitability. The management of the business firm is naturally keen to measure its operating efficiency. Similarly the owners invest their funds in the expectation of reasonable returns. Sun Pharmaceutical Industries Ltd. is the fifth largest specialty generic pharmaceutical company in the world, which was incorporated in the year 1983. The Company has global presence with 41 manufacturing facilities across the world. India and the US are two predominant markets accounting for nearly 70% of the company's revenue. The data was collected through secondary source i.e. audited financial statement for the 10 years from 2010-2011 to 2019-20. The data analyzed by using several ratios related with liquidity and profitability, also used descriptive statistics, Correlation coefficient and

liner multi regression analysis. The association of ROI, ROE and NPR with APP, CR and CA to TA is statistically significant and ROI, ROE and NPR are negatively correlated with ARP, ICP, CCC, CA to TA, GWCTR. Sun Pharmaceutical Industries Ltd. is taking benefit of extensive credit period allowed by their suppliers. However they should have stability in the decisions concerning management of current assets and liabilities.

Keywords: Liquidity, Profitability, relationship, trade-off, current assets, current liabilities.

INTRODUCTION

Liquidity is the ability of a firm to meet current obligations when they become due for payment. It is a prerequisite for the survival and long term success of a firm. There exist an inverse relationship between liquidity and profitability. A trade-off between liquidity and profitability is one major dimension in working capital management. Management of working capital is concern with management of current assets. The main motive any business firm is to earn profit and for earning profit they need to manage their assets properly. Normally by employing procedures and establishing rules the firm acquire and manage

their non-current asset in profitable way. But the management of current asset requires to take more precautions from the point of view of its investment. More investment in Current asset block the funds unnecessarily and the profitability of the business firm get adversely affected. If firm does not have adequate current asset to manage the current obligations then it became illiquid. Therefore effective working capital management should be employed by the business firms to ensure trade-off between liquidity and profitability.

LITERATURE REVIEW:

In order to increase the profitability of the firm, manager should focus on the proper management of the various components of the working capital (Maeenuddin et.al. 2020). The working capital management involves a trade-off between profitability and liquidity risk and thus it affects the market value of the firm (Vijayakumaran, 2019).

Narwal & Jindal (2018) studied the impact of working capital and corporate governance on the profitability of the company and found that both independent variables i.e. working capital and corporate governance have positive association with profitability. Agyemang et al. (2019) revealed from the study of impact of working capital management on firm profitability that except current liability to total assets ratio all the other variables are significant in short run. Vijayalakshmia and Srividya (2015) conducted study on Working capital management of Pharmaceutical Industry in India during the period from 2009-2010 to 2013-2014. The working capital measured with the help of the ratios like Working Capital Turnover Ratio,

Working Capital to Net Worth, Net Working Capital to Current Liabilities, and Net Sales to Net worth. Liquidity ratio significantly effects on Return on Asset but Return on Equity not get affected by current ratio, quick ratio and liquid ratio whereas Return on Investment is greatly affected by all three liquid ratios current ratio, quick ratio and liquid ratio (Saleem & Rehman, 2011).

Jagtap (2012) conducted Liquidity Analysis through Ratios and Cash Flow with reference to Limited Company. The study states that how the ratio analysis and cash flow help to analyze the liquidity position of the firm. Venkateswararao et. al. (2020) states that there must be sufficient quantity of working capital and there must be efficiency in it in any business organisation including MSMEs. Dash (2018) examined the working capital and profitability relationship in the construction industry in Bangalore. For conducting study the author has used pooled regressions and fixed-effects panel regressions. Further it states that the latter methodology is preferred, as it controls for company specific differences in profitability as well as for year-to-year differences in profitability for the industry as a whole.

CONCEPT OF LIQUIDITY

Liquidity is a prerequisite for the vary survival of a firm. Liquidity is the ability of the firm to satisfy its short term obligations as they become due. It shows that liquidity is related with working capital management i.e. management of current asset. For identifying the trade-off between liquidity and profitability, the researcher has used following important ratios that will help to reveal the relationship between these two concepts.

1	Current Ratio:	$\text{Current Ratio} = \frac{\text{Current Asset}}{\text{Current Liabilities}}$
2	Account Receivable Period (ARP)	$\text{Account Receivable Period} = \frac{\text{Account Receivables}}{\text{Net Sales}} \times 12$
3	Account Payable Period (APP)	$\text{Account Payable Period} = \frac{\text{Account Payables}}{\text{Net Purchases}} \times 12$
4	Inventory Conversion Period (ICP)	$\text{Inventory Conversion Period} = \frac{\text{Inventory}}{\text{Net Sales}} \times 12$
5	Current Asset to Total Asset Ratio (CATAR)	$\text{Current Asset to Total Asset ratio} = \frac{\text{Current Asset}}{\text{Total Asset}}$
6	Current Liabilities to Total Asset ratio (CLTAR)	$\text{Current Liabilities to Total Asset ratio} = \frac{\text{Current Liabilities}}{\text{Total Asset}}$
7	Cash Conversion Cycle (CCC)	$\text{Cash Conversion Cycle} = (\text{Average Collection period} + \text{Inventory Turnover in months}) - \text{Average Payment Period}$
8	Gross Working Capital Turnover Ratio (GWCTR)	$\text{Gross Working Capital Turnover Ratio} = \frac{\text{Net Sales}}{\text{Current Assets}}$

CONCEPT OF PROFITABILITY

The management of the business firm is naturally eager to measure its operating efficiency. Similarly the owners invest their funds in the expectation of reasonable returns. The operating efficiency of the firm and its ability to ensure adequate returns to its owners depends ultimately on the profits earned by it. Profitability ratios are calculated to analyze the earning capacity of the business which is the outcome of utilization of resources employed in the business. For study the researcher has chosen two important profitability ratios, they are:

1	Return on Investment (ROI):	$\text{Return on Investment Ratio} = \frac{\text{Net Profit after Tax}}{\text{Investment in Total Asset}} \times 100$
2	Return on Equity (ROE):	$\text{Return on Equity Ratio} = \frac{\text{Net Profit after Tax}}{\text{Equity}} \times 100$

3	Net Profit Ratio (NPR)	Net Profit ratio = $\frac{\text{Net Profit}}{\text{Sales}} \times 100$
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ABOUT SUN PHARMACEUTICAL INDUSTRIES LIMITED

Sun Pharmaceutical Industries Ltd. is the fifth largest speciality generic pharmaceutical company in the world. It was incorporated in the year 1983. The company began operations in Kolkata with just 5 products to treat psychiatry ailments. The company continues to be led by founder, Chairman, and Managing Director Dilip S. Shanghvi. Now Sun Pharmaceutical Industries Ltd. manufactures and markets a large basket of pharmaceutical formulations covering a broad spectrum of chronic and acute therapies. The Company has global presence with 41 manufacturing facilities across the world. India and the US are two predominant markets accounting for nearly 70% of the company's revenue. The company has entered into a joint-venture agreement with MSD (Merck) to develop and bring differentiated branded generics to emerging markets. Sun Pharmaceutical Industries invests around 7-8% of its global revenue each year in R&D. In FY19, US formulations contributed the most to company's sales with 37 per cent, followed by India branded formulations at 26 per cent.

METHODOLOGY

The objective of the paper is to study trade-off between liquidity and profitability. The study is based on secondary data, which has been collected from the audited financial Statements

of Sun Pharmaceutical Industries Ltd. The period covered for the study is limited to the 10 year (i.e. financial year ending on 2011 to 2020). The data analyzed by using various ratios related with liquidity and profitability, also used descriptive statistics such as Mean, Median, Standard Error, Standard Deviation, Sample Variance, Kurtosis, Skewness, Range, Minimum, Maximum, CAGR (%), Correlation coefficient and regression analysis is used to test the hypothesis.

HYPOTHESIS

Null Hypothesis (H0): There is no significant relationship between liquidity and profitability of the Sun Pharmaceutical Industries Ltd.

DATA ANALYSIS

The Table 1 exhibits the descriptive statistics of various liquidity and profitability ratios of Sun Pharmaceutical Industries Ltd. The current ratio depict continuous decrease in it except 2015-16, 2018-19 and 2019-20, where it shows slight increase when compared with earlier years. Mean is 2.64 and compounded annual growth rate is -7.30%. The CV value of Current ratio is 39.15% which indicate unstable current asset position.

Account receivables period exhibits the minimum time during the study period is 1.64 months and maximum time is 3.67 months. The CV is 21.83 indicates that account receivable policies are little bit unstable. Average account payable

period is 27.28 months which is relatively high with the standard deviation of 14.57 months. The minimum time of account payable is 14.39 months and maximum time is 50.22 months. Next ratio is Inventory conversion period ratio. Table show that the values for inventory conversion time range from 2.33 months to 3.26 months with mean value of 2.84 months and standard deviation is 0.31 months. It shows the efficient management of inventory. It range between -43.99 months to -8.07 months. It records CAGR -15.07% and Value of CV is -67.57 indicate the unstable cash conversion

cycle. The mean value of current asset to total asset ratio is 0.55 with standard deviation 0.06. It ranges from 0.46 to 0.64 during the study period. The CAGR is -2.78% with Coefficient of Variation of 11.27%. The current liabilities to total asset ratio ranges from 0.14 to 0.33. The mean value of the ratio is 0.23 with standard deviation of 0.07. Next the gross working capital turnover ratio shows the mean of 0.90 with the standard deviation of 0.09. The CAGR is 3.30% with CV value 10.03. That indicates the efficient management of working capital and the stable working capital policy.

Table 1: Descriptive Statistics

Year	ROI	ROE	ARP	APP	ICP	CR	NPR	CATAR	CLTAR	GWCTR	CCC
2010-11	14.62	19.15	2.41	46.86	3.12	4.30	33.30	0.62	0.14	0.75	-41.33
2011-12	16.13	21.71	3.11	50.22	3.12	3.93	37.93	0.62	0.16	0.78	-43.99
2012-13	14.29	19.90	2.88	46.27	2.74	3.76	30.70	0.57	0.15	0.96	-40.65
2013-14	10.70	16.96	1.64	26.02	2.33	3.12	24.12	0.64	0.20	0.86	-22.05
2014-15	9.26	17.74	2.32	15.35	2.48	1.78	20.01	0.59	0.33	0.94	-10.54
2015-16	8.19	13.78	2.85	16.91	2.71	2.28	19.86	0.54	0.24	0.95	-11.35
2016-17	11.34	19.01	2.76	16.09	2.62	1.84	25.03	0.54	0.29	0.95	-10.71
2017-18	3.36	5.67	3.55	20.94	3.13	1.59	9.97	0.49	0.31	0.83	-14.26
2018-19	4.12	6.44	3.67	19.76	3.26	1.79	11.04	0.48	0.27	0.94	-12.83
2019-20	5.52	8.32	3.44	14.39	2.88	2.02	12.75	0.46	0.23	1.04	-8.07
Mean	9.75	14.87	2.86	27.28	2.84	2.64	22.47	0.55	0.23	0.90	-21.58
Median	9.98	17.35	2.87	20.35	2.81	2.15	22.06	0.55	0.23	0.94	-13.55
Standard Error	1.42	1.89	0.20	4.61	0.10	0.33	3.03	0.02	0.02	0.03	4.61
Standard Deviation	4.49	5.96	0.63	14.57	0.31	1.03	9.59	0.06	0.07	0.09	14.58
CV	46.06	40.10	21.83	53.40	11.03	39.15	42.68	11.27	29.31	10.03	-67.57
Kurtosis	-1.31	-1.30	0.11	-1.27	-1.25	-1.51	-1.09	-1.50	-1.39	-0.64	-1.35
Skewness	-0.07	-0.67	-0.58	0.87	-0.21	0.63	0.18	-0.14	0.02	-0.43	-0.84
Range	12.77	16.04	2.03	35.83	0.93	2.71	27.96	0.17	0.19	0.29	35.92

Minimum	3.36	5.67	1.64	14.39	2.33	1.59	9.97	0.46	0.14	0.75	-43.99
Maximum	16.13	21.71	3.67	50.22	3.26	4.30	37.93	0.64	0.33	1.04	-8.07
CAGR(%)	-9.29	-0.08	3.64	-11.14	-0.81	-7.30	-9.15	-2.78	4.87	3.30	-15.07

Source: Generated from the financial statements of the Sun Pharmaceutical Industries Ltd.

Table 1 also depict the descriptive statistics of profitability ratios of Sun Pharmaceutical Industries Ltd. The net profit ratio shows fluctuating trend during the study period. In the year 2018-19 & 2019-20 NPR of Sun Pharmaceutical Industries Ltd. has increased slightly from 9.97 to 11.04 & 12.75 respectively, which is a good sign. The compounded growth rate is -9.15% and average is 22.47. Average value of the return on investment (ROI) of Sun Pharmaceutical Industries Ltd. is 9.75 of the overall assets with a standard deviation of 4.49. The minimum value of ROI is 3.36 while its maximum value is 16.13. The ROE shows the minimum value 5.67 and maximum value 21.71. The average value of ROE is 14.87. It is more than the ROI, which is good from the point of view of the shareholders. The CGAR is -0.08 and value of CV is 40.10% which indicates the instability of the ratio.

CORRELATION ANALYSIS

Table 2 exhibits Karl Pearson Correlation Coefficient (r) matrix used to analyze the relationship between the liquidity and profitability ratios of Sun Pharmaceutical Industries Ltd.

The ARP (-0.514), ICP (-0.163), CLTAR (-0.707), GWCTR (-0.457) and CCC (-0.820) have negative relationship with ROI. It indicates that these variables have an insignificant negative correlation. While APP (0.795), CR (0.854) and CATAR (0.810) show the positive relationship with ROI. It exhibits that they are statistically significant. The ROE have negative relationship with ARP (-0.644), ICP (-0.395), CCC (-0.637), CLTAR (-0.497) and GWCTR (-0.329). It explains the insignificant negative relationship with ROE. The association of APP (0.602), CR (0.686) and CATAR (0.839) with ROE is positive. This indicates the insignificant positive relationship with APP, CR and ROE. But CATAR shows statistically significant relationship with ROE. The association of NPR with ARP (-0.469), ICP (-0.085), CCC (-0.848), CLTAR (-0.728) and GWCTR (-0.530) have negative relationship with NPR. This result shows an insignificant negative correlation among the ARP, ICP, CCC, CATAR, GWCTR and NPR.

Table 2: The Pearson Correlations Matrix

Variables	ROI	ROE	NPR	ARP	APP	ICP	CR	CCC	CATAR	CLTAR	GWCTR
ROI	1										
ROE	0.955	1									
NPR	0.993	0.930	1								

ARP	-0.514	-0.644	-0.469	1							
APP	0.795	0.602	0.827	-0.142	1						
ICP	-0.163	-0.395	-0.085	0.758	0.327	1					
CR	0.854	0.686	0.872	-0.382	0.935	0.114	1				
CCC	-0.820	-0.637	-0.848	0.201	-0.998	-0.273	-0.948	1			
CATAR	0.810	0.839	0.811	-0.809	0.599	-0.376	0.711	-0.641	1		
CLTAR	-0.707	-0.497	-0.728	0.196	-0.850	-0.190	-0.936	0.854	-0.473	1	
GWCTR	-0.457	-0.329	-0.530	0.242	-0.659	-0.369	-0.599	0.660	-0.616	0.399	1

Source: Generated from the financial statements of the Sun Pharmaceutical Industries Ltd.

Above table depicts the positive relationship of NPR with APP (0.827), CR (0.872) and CATAR (0.811) which means there is significant positive correlation among the variables. Thus it can be seen from the result that the association of ROI, ROE and NPR with APP, CR and CATAR is statistically significant.

REGRESSION ANALYSIS

Regression Model 1 and model 2 is used for conducting further analysis of the functional relationship between dependent and independent variables.

Model 1

Here liquidity ratio [ARP, APP, ICP, CR, CCC, and GWCTR] is taken as independent variable while profitability [ROI] is dependent variable.

$$ROI = \beta_0 + \beta_1(ARP) + \beta_2(APP) + \beta_3(ICP) + \beta_4(CR) + \beta_5(CCC) + \beta_6(GWCTR) + \varepsilon$$

β_0 is the intercept of the equation, $\beta_1 - \beta_6$ are the coefficients of independent variables and ε is the error term.

Table 3: Model 1 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.915	0.838	0.385	2.713
Dependent Variable: ROE, Predictors: (Constant), ARP, APP, ICP, CR, CCC, GWCTR				

Source: Based on Calculation (Using SPSS)

Table 4: ANNOVA

Model		DF	Sum of Squares	Mean Square	F	Significance F
2	Regression	6.000	152.108	25.351	4.134	0.136
	Residual	4.000	29.438	7.359		
	Total	10.000	181.545			
Dependent Variable: ROE, Predictors: (Constant), ARP, APP,ICP, CR,CCC, GWCTR						

Source: Based on Calculation (Using SPSS)

Table 3 exhibits Model 1 summary based on the calculations done by using SPSS. The R value is 0.915 suggests that the predictors have a high degree of association with the ROI. The R square value shows that 0.838 (83.8%) of variability in ROI is due to predictors.

Table 4 shows the output of the ANOVA analysis and whether there is a statistically significant difference between our group means. It can be seen that model 1 does not fit for forecasting the relation between with predictors and dependent variable as F-value is 4.134 and the significance value is 0.136 (i.e., $p = .136$) at 5% significance level. The result indicates that relationship and model is statistically insignificant. This model is not suitable for predicting the value of ROI on the basis of selected liquidity ratio. Thus it can be seen that the alternative hypothesis is rejected and the null hypothesis is accepted.

Model 1

Here liquidity ratio [ARP, APP, ICP, CR, CCC, and GWCTR] is taken as independent variable while profitability [ROE] is dependent variable.

$$ROI = \beta_0 + \beta_1(ARP) + \beta_2(APP) + \beta_3(ICP) + \beta_4(CR) + \beta_5(CCC) + \beta_6(GWCTR) + \varepsilon$$

β_0 is the intercept of the equation, $\beta_1 - \beta_6$ are the coefficients of independent variables and ε is the error term.

Table 5: Model 2 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	0.872	0.760	0.209	4.385
Dependent Variable: ROE, Predictors: (Constant), ARP, APP,ICP, CR,CCC, GWCTR				

Source: Based on Calculation (Using SPSS)

Table 6: ANNOVA

Model		DF	Sum of Squares	Mean Square	F	Significance F
2	Regression	6.000	243.035	40.506	2.528	0.239
	Residual	4.000	76.910	19.228		
	Total	10.000	319.945			
Dependent Variable: ROE, Predictors: (Constant), ARP, APP,ICP, CR,CCC, GWCTR						

Source: Based on Calculation (Using SPSS)

Table 5 depict the Model 2 summary based on the calculations using SPSS. The R value is 0.872 suggests that the predictors have a high degree of association with the ROE. The R square value shows that 0.760 (76.0%) of variability in ROE is due to predictors.

Table 6 shows the output of the ANOVA analysis and whether there is a statistically significant difference between our group means. It can be seen that model 2 does not fit for forecasting the relation between with predictors and dependent variable as F-value is 2.528 and the significance value is 0.239 (i.e., $p = .239$) at 5% significance level. The result indicates that relationship and model is statistically insignificant. Finally we can say that the alternative hypothesis is rejected and the null hypothesis is accepted.

CONCLUSION

From the study, it can be concluded from the correlation analysis that the association of ROI, ROE and NPR with APP, CR and CATAR is statistically significant and ROI, ROE and NPR are negatively correlated with ARP, ICP, CCC, CATAR, and GWCTR. It means there exist insignificant relationship between the ROI, ROE and NPR with ARP, ICP, CCC, CATAR, and GWCTR. Further liner multiple regression analysis used for analyzing the functional relationship between dependent (ROI and ROE) and independent variables (ARP, APP, ICP, CR, CCC, and GWCTR). The result of both the models shows that relationship is statistically insignificant and model is not suitable for predicting the value of ROI as well as ROE on the basis of selected liquidity ratio. In conclusion we can say that the alternative hypothesis is rejected and the null hypothesis is accepted.

Thus, from the study of trade off between liquidity and profitability, it can be understood related to Sun Pharmaceutical Industries Ltd. that working capital management policies adopted are stable. The business is taking benefit of extensive credit period allowed by their suppliers. However they should have stability in the decisions concerning management of current assets and liabilities, also the maximum utilization of the assets with effective and efficient manner will help the organization to earn worthy profit and satisfy the shareholders which is the ultimate objective of the business.

References

1. Maeenuddin, L. Y., Nassir A. M., Hafeez M., Chughtai, M. S. and Hussain A. (2020). An Empirical Investigation of Working Capital Management Components and Its Association with Firm's Profitability (ROE). *Talent Development & Excellence*, 12(3), pp. 2644 – 2662
2. Vijayakumaran, R. (2019). Efficiency of Working Capital Management and Firm Value: Evidence from Chinese Listed Firms. *International Journal of Financial Research*, 10(6), pp. 133-144.
3. Narwal, K. P. & Jindal, S. (2018) Working Capital Management Impact on Corporate Profitability Relation With Corporate Governance: Evidence From Indian Manufacturing Sector, *Journal Of Commerce & Accounting Research*, 7(3), pp. 8-12
4. Agyemang, J. K., Yensu, J. and Otchere Marian Ivy O. (2019). The Impact of Working Capital Management on Profitability of Global Haulage Company, Ghana. *Asian Journal of Economics, Business and Accounting*, 12(4), pp. 1-17.
5. Vijayalakshmia, V. and Srividya M. (2015) A Study on Working Capital Management of Pharmaceutical Industry in India. *Journal of Management and Science*, 5(3), pp. 59-80.
6. Saleem, Q., Rehman R. (2011) Impacts of Liquidity Ratios on Profitability (Case of Oil and Gas Companies of Pakistan). *Interdisciplinary Journal of Research in Business*, 1(7), pp. 95-98.
7. Yusuf, M. Bashir (2019). The Impact of Working Capital Management Practice on Firm Profitability: An Evidence from Manufacturing Firms in Istanbul Stock Exchange. *The Journal of International Social Research*, 12(62), pp. 1645-1655.
8. Jagtap Manisha, (2012). "Liquidity Analysis Through Ratios And Cash Flow With Reference To Limited Company," *Advances In Management*, 5(3).
9. Venkateswararao, P., Surya Chandrarao. D And Hema Venkata Siva Sree.Ch. (2020) "Working Capital Turnover in Micro and Small Enterprises". *Journal of Critical Reviews*, 7(12), pp. 630-633.
10. Dash M. (2018). Working-Capital Management and Profitability of the Construction Sector in Bangalore. *Journal of Commerce & Accounting Research*, 7(4), pp. 40-46
11. Khan, M.Y. and Jain, P.K. (2014). *Financial Management Text, Problem and Cases*, Chapter(6), 7th ed. McGraw Hill Education (India) Private Limited, Chennai
12. <https://www.sunpharma.com/investors/annualreports> (Sept. 10, 2020)
13. <http://egyankosh.ac.in/bitstream/123456789/6219/1/Unit-12.pdf> (Oct. 22, 2020)
14. <https://ncert.nic.in/ncerts/l/leac205.pdf> (Oct.24, 2020)
15. <https://www.referenceforbusiness.com/history2/95/Sun-Pharmaceutical-Industries-Ltd.html> (Oct. 24, 2020)
16. <https://www.capitalmarket.com/Company-Information/Information/About-Company/Sun-Pharmaceuticals-Industries-Ltd/4325> (Oct. 24, 2020)

An Empirical Study of Women's Economic Empowerment and Involvement in Decision Making

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ABSTRACT

The economic empowerment and autonomy of women can be judged by freedom available with them concerning utilization of income and spending money. And the involvement of the women in important family decisions will help to understand the level of importance she gets in a family and society. After so many efforts from government for creating awareness among the people concerning women empowerment whether it is social or economic, results are not much encouraging. The main reason behind this is the lack of self-respect, confidence and self-efficacy in the women. After conducting survey and analysis of the data, researcher found that even though women are earning member, the respect or the decision power is not given to her like men. While studying it found that 14.5% women get respect from family and society. While only 10.75% women were involved in buying/selling of land/house and less than 20% women were involved in decision regarding marriage of children.

KEYWORDS

Economic empowerment, decision making, participation, factors, involvement, family.

INTRODUCTION

The empowerment of women is essential for sustainable development and the understanding of human rights for all (Srivastava, 2009). Empowerment was seen as a tool in the search for change in their socio-economic status. Nation and individuals believe that no society can develop until women, an important part of the society, are left behind. When women get empowered, families get benefitted and directly or indirectly it positively effect on future generations (Sobha Rani, 2014). Economic opportunities increase women's access to productive

resources and prospects that includes financial opportunities, assets and wealth, upgradation of skills, and knowledge about the market (OECD,2011). A woman is economically independent when she has authority to make economic decision for her development and successfully implement the same. (Golla AM et al., 2011).

For a longer period, women were given a secondary place in family and society, which increased the need for women empowerment. Empowering women must begin their participation in different walks of life. When compared with men, the number of women

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living in poverty is more. The economic inequalities can be seen because maximum unpaid activities in families and communities are allotted to the women. Economic independence is a major factor that can contribute to empowering women (UNFPA, 2005). Economic empowerment activities can be taken such as promoting small businesses, cooperatives, job creation programs, and savings and credit groups through which they can earn their income. (Albee, 1994).

According to International center for Research on Women (ICRW), women are strong enough to change their standard of living or the economic status by getting engaged in productive activities, but also the communities and countries in which they live. However, most of the time, women's financial contributions get ignored by the family members. She never get respect for her efforts. There is always a huge difference between the opportunities that are available to the women and men, which continue to hinder on women's capability to uplift her standard of living. Various research conducted concern to women economic empowerment, focus on the inequality that exist in the work distribution between women and men. The only task continue to be given to women is home making with limited access to funds. For achieving equality between women and men, the most important contributing factor nowadays is gaining attention in the economic empowerment of women.

ICRW identified certain important positive outcomes to empower women economically.:

- Rapid growth of women's participation in the income generating activities, helped the economy to reduce poverty to an significant extent.
- With access to the resources as per the requirement, women farmers can increase production, making their families less likely to be starved and undernourished.
- Ownership of property and use of it for earning money increases the bargaining power of women at home, which will reduce their

vulnerability to domestic violence.

According to South African Development Community (SADC), the economic empowerment help the women to improve their own livelihood. It also helps in mobilizing their potential for sustainable growth and poverty mitigation. Women spend a maximum amount of their earning on food and education of their children, which is very essential for the well-being of their families.

Objectives

The primary objective is to study the effect of various indicators on economic empowerment of the women. The topical scope is to study women's economic empowerment in Walwa taluka with special reference to Islampur Integrated Textile Park, Peth. It is confined to understand & study the different factors affecting and contributing to the economic empowerment of the women.

The present study has completed by using both primary and secondary data. The Primary data is collected using survey questionnaires. The well-defined questionnaires were distributed to the women employees working in two units i.e weaving unit and garment unit of the Islampur Integrated Textile Park, Peth. The secondary data is collected from the organization as well as publications such as journals, books and newspapers, also from the research projects taken up by government or private organizations. Major data is primary; wherever secondary data remains inadequate, necessary primary data were collected by conducting interviews and personal discussions of the concern officials. This extended inquiry considered important to find out, which may not arrive at by processing of secondary data.

Literature Review

Patel (2002) mentioned in his study that though the land reforms were established on principles of redistributive justice, empowerment and economic justice. It has ignored the principle of gender equity.

Malhotra, Anju, et al. (2002) the article provides an overview of current theories and different approaches to women's empowerment. They defined empowerment as the ability of people to make strategic choices in areas that affect their lives. In this paper, the author noted that control over funds and agency are key factors that shape important steps in the process of empowerment.

Morrison et al. (2008) found that when compared with manufacturing sector the women's hourly wages are more than the men in the tertiary sector. Esther Duflo (2011) focused on the direct relationship between women's empowerment and economic development. According to the author, they are closely interconnected. Economic development helps to empower women, and empowered women can make a difference by making good decisions, which in turn have a positive impact on economic development.

World Survey (2014) focused on the various important issues concern with equality and sustainable development. According to this survey, making sustainable development more effective and meaningful through Women's participation, which is possible only when there is positive transformation in gender relations and support is provided to women's knowledge and capabilities.

ANALYSIS AND DISCUSION

As stated previously, the circulated questionnaires were 64 and 201. It targeted on the women working in two units of the Islampur Integrated Textile Park, Peth Weaving unit and Garment unit respectively.

The reliability of the questionnaire suggests that alpha is 0.824 and 0.764 for Weaving unit and Garment unit respectively. It depict that data is reliable. In this research, researcher consider various indicators that can impact on the women economic empowerment. They are income, education, and work status, area of residence etc.

Factors affecting Women's Economic Empowerment

Table no. 1 reveals that most of the women (67.2 %) and (56.2 %) are in young age group i.e. in 21-35 years working in weaving and garment unit respectively. The education qualification of the women working in weaving and garment unit is one of the important factors affecting on the economic empowerment. Total 53.35% of the women workers have completed their primary and 28.55% have completed their secondary education. Only 5.85% of women are either diploma or degree holder.

While considering the marital status as another important factor, total 82.45% women are married and 7.4% are single women. 4.6% are widowed and also 4.6 % are divorced working in weaving and garment unit. (Table no. 1)

When we look at the work status, it is found that total 50.25% women are working as permanent staff and 36.6% women are permanent workers. It shows that more than 80% women are permanent in their job. Area of residence is also considered as one of the factor that effects on the economic empowerment of the women. In weaving unit, 37.5% women working are from rural area. 56.3% are from semi urban and only 6.3% are living in urban area. While in garment unit, 76.1% women working are from rural area, 15.4% are from Semi urban and 8.5% are living in urban area. Thus, it shows that in total more than 50% women are from rural area and more than 30% are from semi urban area.

Factors determining Women's Economic Empowerment

Here are certain aspects that determine the women's economic empowerment. Income level is unique factor that explains the earning capacity of the women. How much she is contributing towards her family earning is also considered as an important determining factor. Next, though she is earning, is she allowed to do saving? Does she have an account in the bank, whether joint or independent?

Table no. 2 depicts that, in case of weaving unit, 87.5% women are in more than Rs.5000 income level and only 4.7% and 7.8% women lies in Rs.1000- Rs.3000 and Rs.3000-Rs.5000 income level respectively. While only 2 income levels exist in garment unit. 98% women are in more than Rs.5000 income level and only 2% women's lies in Rs.1000-Rs.3000 income level. This indicates that more than 90% women's in total are in more than Rs.5000 income level.

In weaving unit, 32% women contribute to half or more to their family earnings. More than 45% women contribute to less than half to their family earnings. While in garment unit, near about 50% women contribute to half or more to their family earnings. 39.8% women contribute to less than half to their family earnings.

Total 55.9% women are allowed to do saving while yet 44.1% restricted from saving their money.

In case of weaving unit, 39.1% and 21.9% have independent and joint account respectively. While 39.1% women yet don't have any type of account in bank. While in case of garment unit, 80.6% and 14.4% have independent and joint account women have in bank respectively. And 5% women don't have any type of account in bank.

Indicators explaining the level of women's economic empowerment

Women's economic empowerment can be understood by studying certain aspects or indicators like women's self-esteem, self-confidence and self-directed action (Wu, Diana. 2013). Table no. 3 reveals the various indicators, which are as follows:

1. **Level of participation in different activities of the organization:** Total 63.6% women's have participated in different activities of the organization. While only 19.85% showed interest or got a chance to organize the activity and remaining 16.55% women are involved in any other activities of the organization.
2. **Participation in meetings:** In weaving unit, more than 45% women are participating in meetings, more than 25% are only attending meeting. Demanding participation is available only to 18.8% women. While in garment unit, more than 50% women are participating in meetings, more than 25% are only attending meeting. Demanding participation is available only to 12.4% women's and remaining 9.5% women are engaged in other activities.
3. **Role and responsibility:** In weaving unit, 59.4% women responded that their role and responsibility has increased while 34.4% women said that it has decreased. Only 6.3% women said that has remained unchanged. While in garment unit, 58.7% women responded that their role and responsibility has increased while 35.3% said that it has decreased.
4. **Respect in family, in society and in company:** Total 38.35% as income earner, the women get respect in family, society and in company. 34.1% women responded that they are getting respect as income earner in family and company. While 14.5% women's get respect from family and society. And 13% women said that society and company do respect them as income earner and not family.
5. **Level of domestic violence:** It is observed that the overall level of domestic violence has decreased. In case of weaving unit, 42.2% women said that domestic violence has decreased while 10.9% women responded that it has increased. At the same time 42.2% women accepted that now there is no domestic violence. While in case of garment unit, 36.8% women said that domestic violence has decreased while 6.5% women responded that it has increased. 45.8% women accepted that there is no domestic violence.
6. **Bargaining and negotiating power at society:** Total 55.05% women responded that their Bargaining and negotiating power at society has decreased while 37.9% women said that it has increased.

7. **Availability of time for personal leisure and child care:** Discussing about work life balance, 75% women from weaving unit responded that the availability of time for personal leisure and child care has decreased while 17.2% women said that it has increased. 7.8% women said that there is no change in it. While in case of garment unit, 77.6% women responded that the time for personal leisure time and child care has decreased while only 8% women said that it has increased.
8. **Ability to generate income affects your lifestyle:** As an earning member, total 37.8% women agreed that it highly effect on their lifestyle while 17.2% women responded that there is very less impact on their lifestyle. 43.55% says that to some extent it has affected on their lifestyle.

Involvement in Important Family Decisions

Women's economic empowerment can be seen by her involvement in important family decisions (Table no.4).

Hypothesis No.1

Above table shows the relationship between income level and indicators of women's economic empowerment. The Pearson's r shows that decision on income utilization and decision of spending money is near to zero. This means that there is a weak relationship between the variables. A null hypothesis gets accepted, i.e. there is no relation between income level of women and their economic empowerment.

Sig (2-Tailed) value: There is statistically significant correlation between Income level and Decision on income utilization. That means, increases or decreases in one variable significantly relate to increases or decreases in second variable. But we find that there is statistically no significant correlations between income level and decision of spending money.

H0: There is no relation between income level of women and their economic empowerment.

Correlations				
		Income level	Decision on Income Utilization	Decision of Spending money
Income level	Pearson Correlation	1	.224**	.119
	Sig. (2-tailed)		.000	.052
	N	265	265	265

1. **Decision making for self needs:** Looking at the response from the working in the weaving unit, 32.8% women can buy medicine, seek medical treatment alone. Only 3.1% women can visit outside the village/town/city alone. While in case of garment unit, 28.9% women can buy medicine, seek medical treatment alone, and only 4.5% women can visit outside the village/town/city alone. It means that total 30.85% women can buy medicine, seek medical treatment alone.
2. **Decision making for Family needs:** Total 30.9% women told that they can decide upon Production Activities like grow food grains, rare livestock, made handicrafts. 30.6% women were allowed to take decision concerning purchase of daily needs and utensils. And only 10.35% decisions are related to buying and selling food grains, handicraft, and livestock.
3. **Decision making for children needs:** Table no.4 reveals that the involvement of women in the decision concerning children is high in case of choosing school for them. Total 43.1% are involved in decision related to school of children.

Decision on Income Utilization	Pearson Correlation	.224**	1	.478**
	Sig. (2-tailed)	.000		.000
	N	265	265	265
Decision of Spending money	Pearson Correlation	.119	.478**	1
	Sig. (2-tailed)	.052	.000	
	N	265	265	265

** Correlation is significant at the 0.01 level (2-tailed).

Hypothesis No.2

Above table shows the Pearson's for educational qualification and indicators of women's economic empowerment is near to zero. This means that there is a weak relationship between the variables. A null hypothesis gets accepted that is the educational qualification of women is not correlated with their economic empowerment.

Sig (2-Tailed) value: We find that there is statistically significant correlation between educational qualification of women and Decision on income utilization. Also, there is statistically significant correlation between educational qualification of women and decision of spending money.

H0: There is no significant relationship between women's educational qualification and women economic empowerment.

Correlations				
		Educational Qualification	Decision on Income Utilization	Decision of Spending money
Educational Qualification	Pearson Correlation	1	.127*	.210**
	Sig. (2-tailed)		.039	.001
	N	265	265	265
Decision on Income Utilization	Pearson Correlation	.127*	1	.478**
	Sig. (2-tailed)	.039		.000
	N	265	265	265
Decision of Spending money	Pearson Correlation	.210**	.478**	1
	Sig. (2-tailed)	.001	.000	
	N	265	265	265

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Hypothesis No.3

Above table shows the Pearson's r for place of residence and indicators of women's economic empowerment is near to zero. This means that there is a weak relationship between the variables. A null hypothesis gets accepted, i.e., the place of residence of women is not correlated with their economic empowerment.

Sig (2-Tailed) value: We find that there is statistically significant correlation between place of residence and decisions on income utilization. Also, there is statistically significant correlation between place of residence and decision of spending money.

H0: There is no relation between Place of residence and women economic empowerment.

Correlations				
		Place of Residence	Decision on Income Utilization	Decision of Spending money
Place of Residence	Pearson Correlation	1	.166**	.172**
	Sig. (2-tailed)		.007	.005
	N	265	265	265
Decision on Income Utilization	Pearson Correlation	.166**	1	.478**
	Sig. (2-tailed)	.007		.000
	N	265	265	265
Decision of Spending money	Pearson Correlation	.172**	.478**	1
	Sig. (2-tailed)	.005	.000	
	N	265	265	265

** Correlation is significant at the 0.01 level (2-tailed).

Hypothesis No.4

Above table shows the Pearson's r for work status and indicators of women's economic empowerment is near to zero. This means that there is a weak relationship between the variables. A null hypothesis gets accepted, i.e. the work status of women is not correlated with their economic empowerment.

Sig (2-Tailed) value: We find that there is no statistically significant correlation between work status and decision on income utilization. But there is statistically significant correlation between work status and decision of spending money.

H0: There is no significant relationship between women's work status and their economic empowerment.

Correlations				
		Work Status	Decision on Income Utilization	Decision of Spending money
Work Status	Pearson Correlation	1	.032	.141*
	Sig. (2-tailed)		.608	.021
	N	265	265	265
Decision on Income Utilization	Pearson Correlation	.032	1	.478**
	Sig. (2-tailed)	.608		.000
	N	265	265	265
Decision of Spending money	Pearson Correlation	.141*	.478**	1
	Sig. (2-tailed)	.021	.000	
	N	265	265	265

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

While only 27.65% are involved in buying medicines/seek medical treatment decision & 19.85% are involved in decision regarding purchase of clothes, books and stationery.

4. **Decision Making for Major Family Activities:** Decisive power with women in important family matters is very significant that helps to know the women's economic empowerment. While studying, it is found that only 10.75% women were involved in buying/selling of land/house. And less than 20% women were involved in decision regarding Marriage of children.

Indicators of Women Economic Empowerment

Researcher tried to relate economic empowerment of women with their decision-making power along with utilization of income and spending of money. During study, Total 55.2% women responded that their husbands take decisions with respect to income utilization. 16.5% women take decisions themselves and only 25.8% said that they collectively take decisions concerning income utilization (Table 5). In case of decision of spending money, only 25% women of weaving unit take decision of spending money without any influence. While only 19.4% women of garment unit take decision of spending money without any influence.

Hypothesis Testing

Findings and conclusion

While doing the study of Women's Economic Empowerment in Walwa Taluka, the researcher arrived at certain findings. In the paper, almost all the important aspects concerning to it are covered like income, education, work status, decision regarding spending money and acquisition of assets etc. After the consistent investigation of the objectives of the study, and from the analysis and the discussion in the proceeding pages where researcher tried to apply the framework of Statistical tools and

techniques, it can be said that the women working in Islampur Integrated Textile Park are not significantly economically empowered. As these women are earning money now, they are involved in decision making concern with utilization of income. But when it comes to the actual spending of money, then their role is very limited. Also, the place of residence is also an important aspect, which effect the economic empowerment of the women. Most of the women working in two units of Islampur Integrated Textile Park are from rural and semi urban area. Educational qualification of women and their work status also correlate with their economic empowerment which is measured by responses received by the researcher while conducting survey w.r.t involvement of women in decision on how to spend money.

Acknowledgement

The researcher acknowledges the support received from the officials of Islampur Integrated Textile Park, Peth, for conducting interview of the women working in both units, i.e. weaving and garment.

References

- Shrivastava, M. 2009. 'Essay on women empowerment'. Available at SSRN 1482560.
- B. Sobha Rani. 2014. 'Human Development and Women Empowerment'. GJRA - Global Journal for Research Analysis. 3(8), August Special Issue: 1-3.
- OECD (2011). 'Women's Economic Empowerment'. <https://www.oecd.org/dac/gender-development/47561694.pdf>
- Golla, A. M. Malhotra A. Nanda P. Mehra R. 2011. 'Understanding and measuring women's economic empowerment- Definition, framework and indicators'. International Center for Research on Women (ICRW).
- UNFPA 2007. 'Women's Economic Empowerment: Meeting the Needs of Impoverished Women' workshop report. https://www.unfpa.org/sites/default/files/resource-pdf/women_economic.pdf.
- Albee, A. 1994. 'Support to Women's Productive and Income-Generating Activities'. UNICEF Evaluation and Research Working Paper Series No. 1. International Center for Research on Women (ICRW). 'The ISSUE: WOMEN'S ECONOMIC EMPOWERMENT'. <https://www.icrw.org/>

economic- empowerment/South African Development Community (SADC). 'Women Economic Empowerment Programme'. <https://www.sadc.int/issues/gender/women-economic-empowerment-programme/> Patel, Reena. 2002. 'Gender, production and access to land: the case for female peasants in India'. in Parpart, J.L. Rai, S.M. and Staudt K. (eds). In Rethinking Empowerment: Gender and development in a global/local world: Gendered Perspectives .London: Routledge

Malhotra, A., Schuler, S.R. and Boender, C. 2002. 'Measuring Women's Empowerment as a Variable in International Development'. The World Bank, Washington DC.

Morrison, Andrew R. ShwetlenaSabarwal, and MirjaSjöblom, 'The State of World Progress, 1990-2007'in Mayra Buvinic, Andrew R. Morrison,

A. WaafasOfosu-Amaah, and MirjaSjöblom (eds). Equality

for Women: Where Do We Stand on Millennium Development Goal? Washington, DC, The World Bank, 2008.

Esther Duflo, 'Women's Empowerment and Economic Development' Working Paper 17702, <http://www.nber.org/papers/w17702>

United Nations Women. 2014, The World Survey on the Role of Women in Development, on the theme of "Gender equality and sustainable development" [https://www.unwomen.org/media/headquarters/ attachments/ sections/library/publications/2014/ world-survey -on-the-role-of-w omen-in- development-2014-en. pdf?la=en&vs=3045](https://www.unwomen.org/media/headquarters/attachments/sections/library/publications/2014/world-survey-on-the-role-of-women-in-development-2014-en.pdf?la=en&vs=3045)

Wu, Diana. 2013 Measuring Change in Women Entrepreneur's Economic Empowerment: A Literature Review. DCED Women's Enterprise Development Working Group.

Annexure

Table 1 : Frequencies of Factors affecting Women's Economic Empowerment

	Factors	Weaving unit	Garment Unit	Total
Age	upto 20 Years	4.7	6	5.35
	21-35 Years	67.2	56.2	61.7
	36-50 years	28.1	35.8	31.95
	More than 50 years	0	2	1
Educational Qualification	None	14.1	10.4	12.25
	Primary	60.9	45.8	53.35
	secondary	20.3	36.8	28.55
	Diploma/ degree	4.7	7	5.85
Marital status	Single	7.8	9	8.4
	Married	82.8	82.1	82.45
	Divorced	4.7	4.5	4.6
	widowed	4.7	4.5	4.6
Work Status	On contract	9.4	6.5	7.95
	Permanent Worker	23.4	49.8	36.6
	Permanent Staff	67.2	33.3	50.25
	Any other	0	10.4	5.2
Place of residence	Urban	6.3	8.5	7.4
	Semi-Urban	56.3	15.4	35.85
	Rural	37.5	76.1	56.8

Table 2 : Frequencies of Factors determining Women's Economic Empowerment

	Factors	Weaving unit	Garment Unit	Total
Income Level Per Month	1000-3000	4.7	2	3.35
	3000-5000	7.8		3.9
	More than 5000	87.5	98	92.75
Contribution to the Family Earning	Missing	10.9	6.5	8.7
	Less than Half	46.9	39.8	43.35
	Half or more	31.3	45.8	38.55
	All	10.9	8	9.45
Allowed to do Savings	No	48.4	39.8	44.1
	Yes	51.6	60.2	55.9
Type of saving account	Joint	21.9	14.4	18.15
	Independent	39.1	80.6	59.85
	No account	39.1	5	22.05

Table 3 : Frequencies of Indicators measuring the women's Economic empowerment

	Indicators	Weaving unit	Garment Unit	Total
Involvement in Company's Activity	Organization	20.3	19.4	19.85
	Participation	62.5	64.7	63.6
	Any other	17.2	15.9	16.55
Level of participation	Attending Meetings	29.7	27.4	28.55
	Participation meetings	45.3	50.7	48
	Demanding Participation	18.8	12.4	15.6
	Any Other	6.3	9.5	7.9
Roles and responsibility in family and community	Increased	59.4	58.7	59.05
	Decreased	34.4	35.3	34.85
	No Change	6.3	6	6.15
Respect as Income earner	In the family and society	15.6	13.4	14.5
	In the family and company	34.4	33.8	34.1
	In the society and company	14.1	11.9	13
	In the Family, society and company	35.9	40.8	38.35
Level of domestic violence	Increased	10.9	6.5	8.7
	Decreased	42.2	36.8	39.5
	No change	4.7	10.9	7.8
	Nil	42.2	45.8	44

Bargaining and negotiating power at society	Increased	37.5	38.3	37.9
	Decreased	56.3	47.8	52.05
	No Change	6.3	13.9	10.1
Availability of time for personal leisure & child care	Increased	17.2	8	12.6
	Decreased	75	77.6	76.3
	No change	7.8	14.4	11.1
Ability to generate income affects your life-style and that on your family	Highly	43.8	31.8	37.8
	to Some extend	43.8	43.3	43.55
	Very less	12.5	21.9	17.2
	Nil	0	3	1.5

Table 4 : Frequencies of Involvement in Important Family Decisions

Indicators		Weaving unit	Garment Unit	Total
Decision making for self needs	Purchase of cosmetics	18.8	11.9	15.35
	Buy medicine, seek medical treatment alone	32.8	28.9	30.85
	visit to family and relatives	21.9	26.4	24.15
	visit outside the village/town/city alone	3.1	4.5	3.8
	Any other	23.4	28.4	25.9
Decision making for Family needs	Purchase of daily needs and utensils	31.3	29.9	30.6
	Production Activities like Grow food grains, rare livestock, made handicrafts	34.4	27.4	30.9
	Buying and selling food grains, handicraft, livestock	6.3	14.4	10.35
	borrowing/ lending in cash or kind	26.6	27.9	27.25
	Any other	1.6	0.5	1.05
Decision making for children needs	Purchase of clothes, books and stationery	20.3	19.4	19.85
	Going to school	46.9	39.3	43.1
	Buy Medicines/seek medical treatment	25	30.3	27.65
	Any other	7.8	10.9	9.35
Decision Making for Major Family Activities	Regarding buying/selling of land/house	12.5	9	10.75
	Regarding rent in/rent out of land	39.1	32.3	35.7
	Regarding Marriage of children	14.1	22.9	18.5
	Any other	34.4	35.8	35.1

Table 5 : Frequencies of Indicators of Women's Economic Empowerment

	Indicators	Weaving unit	Garment Unit	Total
Decision on income utilization	Your Self only	15.6	17.4	16.5
	Husband only	78.1	32.3	55.2
	You And your husband collectively	6.3	45.3	25.8
	Other elder family members	--	5	2.5
Decision of spending money	Without Any influence	25	19.4	22.2
	With some but Less than decisive influence	32.8	29.9	31.35
	Decision Made jointly i.e. 50% or Greater	35.9	42.8	39.35
	With total influence	6.3	8	7.15

PERCEPTIONS AND PREFERENCES OF WOMEN INVESTORS TOWARDS STOCK MARKET INVESTMENT

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ABSTRACT

The knowledge of investment options and the stock market is important in deciding which investment opportunities to consider for future. Women have a broad understanding of various investment activities and prefer different investment avenues based on their goals and financial situation. There has been a change in women's economic position over time. Women's financial planning is becoming increasingly important. The Indian capital market is also taking steps to encourage women to participate in the stock market. Economic empowerment of women is the most significant social transition in modern history. The women investors are still not aware and confident about investment planning in stock market. The Present study has been conducted to analyse the motives of investment among women investors and identify the factors affecting on investments of women investors behaviour. The study is based on primary data collected through the random sample of 300 women investors of Sangli District in Maharashtra. The study found that 32% salaried women are invested in equity fixed. Result also showed that there is a relationship between occupation and investment preferences.

Keywords: Women Investors, Perceptions, preferences, stock market

1. INTRODUCTION

Awareness of investment avenues and financial market plays a crucial role in the choice of investment opportunities. Women have vast knowledge about the various investment activities and they prefer various investment avenues according to their choice or objectives and financial position. Women economic empowerment is the biggest social change in recent times. The change in the economic and social status of women calls for a change in their financial knowledge and awareness level. Besides examining the level of awareness of women, the results of the study brought out major differences in the awareness level of investors and non-investors, thereby proving that lack of awareness is one of the major reasons due to which women invest less in the stock market. In the traditional family husband earns for the family and wife maintains it. Her role was mainly confined to domestic works. She creates life, nurtures, and guards and strengthens it. She plays the role of wife, mother, sister, sister-in-law, daughter, daughter-in-law, granddaughter etc. She is the transmitter of tradition and the instrument by which the family culture is preserved. Women's role. This is due to the education she is getting, the women centered policies, program of the government and the job opportunities available to her in the wake of modernization, urbanization, industrialization, liberalization, globalization etc. The opportunities available to women paved the way for economic independence and their involvement in political and social sphere has increased to a great extent.

2. STATEMENT OF THE PROBLEM

The main goal of an investor is to make more money. The Indian savings market has been developing over time, and household savings have been steadily increasing. Furthermore, the

general profile of women investors is evolving over time. However, they lack in many areas of investment, such as understanding and awareness of investment, preferences of investment. As a result, the researcher attempted to identify the factors affecting investors' actions, assess the level of knowledge and awareness of investment in stock market among women investors, and analyse investors' preferences for various investment.

3. LITERATURE REVIEW

Guiso (2005) : Stated " investors' view cannot be influenced by their wages, wealth, age, or educational position. When researchers looked into the relationship between age and investor attributes, they discovered that there were no significant links between the two. Investors' risk bearing limit, venture procedures, motives to invest resources into capital market reserve, executives' system, mindfulness, and investors ' risk bearing limit. In terms of mindfulness, there is a significant difference in age, educational, and word-related groupings.

Joshi (2012) : argued that the investors were unusual with numerous venture options and were presumptuous, according to those who investigated the Indian financial specialist's behaviour. Previous examinations have yielded disparate data about individual financial experts. As a result, the current study attempted to consider the financial experts' interest in the stock market.. Indian investors are good savers, yet they regularly lose their hard-earned money due to a lack of knowledge and understanding of financial products and sectors.

Ullah, M.H., & Chowdhury, N.J., (2011) :stated that the number of female investors in the capital market is steadily increasing, but interest in the capital market remains high, and it is a necessary occupation for both male and female financial professionals. The support of female financial experts has grown as a result of opportunities created for them, such as the establishment of an independent female prediction corner and web-based offer exchanges. Women are today employed at a higher rate and have more financial autonomy than in previous years, but women also carry an unbalanced load of a subsequent move, performing more housework and providing more child care, as well as being more vulnerable to disabled or wiped out relatives than males.

Ranganath (2003) : He has expressed the investor conduct from the showcasing scene and monetary financial matters has united to the surface an energizing region for study and examination: social money. The acknowledgment that this is a genuine subject is, nonetheless, scarcely unfolding. Investigators appear to regard monetary business sectors as a total of factual perceptions, specialized and central examination. A rich perspective on exploration holds up this modern comprehension of how monetary business sectors are likewise influenced by the 'monetary conduct' of financial specialists. With the changes of mechanical approach, public area, monetary area and the numerous advancements in the Indian currency market and capital market, common finances that has become a significant entryway for the little speculators, is additionally affected by their monetary conduct.

Vohra (Oct 2016):Scholastic analysts are of the view that in spite of the fact that the effect of absence of mindfulness on securities exchange cooperation is more noteworthy on account of women, comparable of effect is pretty much seen on all fragments of speculators in the financial exchange. To the extent the effect of monetary mindfulness on the interest of women in financial exercises is concerned, securities exchange cooperation is a lot of lower among women than men. While people are similarly not prone to contribute because of absence of capital, absence of premium, pay, hazard avoidance, instructive direction, and so on, women are more probable not to contribute because of the absence of mindfulness.

Krishna.C.(2008) :In his examination has dissected the profile and attention to salaried class speculators and their disposition and fulfillment towards venture. It has been reasoned that all salaried individuals knew about bank stores, PF plans, protection plans, and mailing station reserve funds plans, gold. This concentrate consequently unquestionably improves the speculation design and their decision to meet of their future venture. Comparative investigations with different examples will help in understanding the speculation consciousness of the focused on respondents in a superior level. The principle reason has been seen to be the absence of consciousness of financial specialists about the idea and working of the venture design. Also, all things considered, age, sexual orientation, pay, instruction and occupation have been found affecting the disposition of speculators towards venture critical.

Navdeep Kaur (2019) : attempted this research paper about the zone of variables affecting the venture disposition of women has been examined and broke down by different analysts and academicians every once in a while. Investigated the elements that expansion women' support in family unit saving and speculation decision. The venture choice of individual relies on their Monetary proficiency and mindfulness about different speculation sources. There are numerous determinants of monetary education level which impacts how an individual arrangements with the standard cash matters and monetary exchanges. These determinants incorporate socio-segment factors like instruction, pay level, conjugal status, house, sex, family pay and conduct, openness to outside world, retirement needs, mindfulness about monetary instruments and so forth. Even however, general profile of women financial specialists is changing in line with time. However, they are protecting in different circles of venture, for example, mindfulness, inclination of speculation.

Paul (1972):Examined in his exploration that the vast majority of the speculators who contributed on value shares have a propensity of looking on the profits produced by value portions of grounded organizations or financial exchange records returns prior to settling on their venture choice. In spite of the fact that the previous profits for value shares don't give ensure for any future returns, speculators see that value shares are giving better re-visitations of beat the swelling rate and subsequently they are submitting one value shares. Investment conduct is characterized as how the financial specialists judge, foresee, break down And audit the strategies for dynamic, which incorporates venture Brain science, data assembling, characterizing and getting, exploration and examination

Hira (2006) :The investigation proposed that because of absence of riches and schooling, women faced lesser challenge than men in their shared asset speculations the examination saw that the shortcomings in the retirement arranging framework have left it of little advantage for women. The examination uncovered that female members discovered speculation choices distressing, troublesome and tedious. Additionally, the security worries because of the utilization of PC innovation settled on women awkward in their venture choices. Women by and large show lesser monetary information, have more monetary concerns and are less certain about their monetary circumstance in view of their conventional sexual orientation jobs. Women are eager to accept less danger when contrasted with men as they have more noteworthy obligation towards their kids and their family.

Banudevi P B (2014) : explained that venture disposition of working women towards different speculation roads reasoned that age and conjugal status has relationship with in speculation roads. Hitched women demonstrated no revenue in high danger protections and are more inquisitive in making speculations than the unmarried respondents. Young women speculators are generally similar to put resources into shares common assets, fixed stores and protection than the more established women. The moderately aged financial specialists like to make their interest in genuine estate. There is a connection between the sex and the factor of

attention to the speculators however no connection between the pay level and familiarity with the venture roads. It finished up future returns and Good returns were the principle targets for making venture.

4. OBJECTIVES OF THE STUDY:

- 1.To Find out the awareness of women investors towards stock market investors.
- 2.. To study the factors affecting on investments of women investors while investing in stock market.

5. RESEARCH METHODOLOGY

A formal questionnaire was created and distributed to stock market investors in Sangli to investigate their knowledge of stock market investment. The 300 questionnaires were delivered through personal contacts by sharing a Google form, the executives of the participating broking agencies, and through e-mail to the client of various stock brokerage firms in Sangli (Maharashtra) and 212 responses were received. This is descriptive type of research.

6. ANALYSIS AND RESULTS

Table No. 1: Table showing age wise distribution of respondents

Age	Respondent	Percentage
21 yrs-30yrs	58	37.35
31yrs – 40yrs	78	36.79
41yrs& 50yrs	49	23.12
➤ 50yrs	27	12.74
	212	100

(Source : Primary Data)

Above table indicates that 37.35% respondents are from age between 21yrs to 30yrs. 36.79% respondents are from age between 31yrs to 40yrs.23.12% respondents are between 41yrs to 50yrs, and just 12.74% respondents are over 50 years old. It is discovered that 74.14% respondents are young.

Table 2: Table showing Marital Status of the respondents

Marital status	Respondent	Percentage
Single	96	45.3
Married	115	54.2
Divorcee	1	0.5
Widow	0	0
Total	212	100

(Source : Primary Data)

It is observed that, 54.2% respondents were married, whereas 45.3% respondents were single i.e. unmarried and only 0.5% respondents were divorcee. It is found that majority of the respondents are young married and invested in stock market.

Table No. 3: Table showing Occupation of the respondents

Occupation	Respondent	Percentage
Self employed	42	19.8
Salaried	44	20.8
Government employee	64	30.2
housewives	64	30.2
Total	212	100

(Source : Primary Data)

From the above table, it is clear that 19.8% respondents are self-employed, 20.8% are salaried, 30.2% respondents are government employees & 30.2% respondents are housewives. It is found that majority of the women investors are earning the money.

Table No. 4: Table showing in which broking firm they have their Demat account.

Firm	Respondents	Percentage
IIFL	41	19.3
ZERODHA	51	24.1
HDFC securities	37	17.4
Angel Broking	28	13.2
Upstock	19	9
5 Paisa	19	9
ICICI Direct	17	8
Total	212	100

(Source: Primary Data)

From the data it is observed that 19.3% respondents have Demat account in IIFL, 24.1 % respondents having in zerodha, 17.4% have demat account in HDFC securities, 13.2% respondents having in angel broking, 9% respondents having in upstocks, 9% respondents having in 5 Paisa & 8% having in ICICI direct. It has been found that Majority of respondents have Demat account in Zerodha. Most of the women investors are preferred zerodha broking firm.

Table No. 5: Table showing mostly women invested areas of the respondents

Areas	Respondents	Percentage
Equity Fixed	81	38.20
Deposit	68	32.0
Gold	43	20.4
Debenture	20	20
Total	212	100

(Source : Primary Data)

From the table it indicates that 38.20% respondents preferred to invest in equity fixed, 32% respondents preferred to invest in deposit, 20.4% respondents preferred to invest in gold & 9.4% respondents preferred to invest in debentures. It is found that majority of the women investors are given preference for Equity fixed and Deposit.

Table No. 6: Table showing the purpose of investment

Purpose	Respondents	Percentage
Future needs	55	26
Financial security	72	34
Capital growth	47	22.1
Regular source of income	38	17.9
Total	212	100

(Source : Primary Data)

Above table, shows that 34% of respondents have invested for financial security, 26% of respondents have invested for future needs, 22.1% of respondents have invested for capital growth, & 17.9% of them have invested for regular source of income. It is found that majority of the respondents are invested for financial Security of their future.

Table No. 7: Table showing whom do you want to credit for earn profit

Credit given	Respondents	Percentage
Professional Help	55	25.9
Friend's advice	79	37.3
Own knowledge	50	23.6
Good luck	28	13.2
Total	212	100

(Source : Primary Data)

It is observed that 37.3% respondents earned profit on investment due to friend's advice 25.9% of them will earn profit due to professional help 23.6% respondents will earn profit due to own knowledge & 13.2% of them will earn profit due to their good luck. It has been found that majority respondents earned profit on investment due to friend's advice and professional help. It means that 76.4% women investors are having less knowledge and depends on others about the stock market investment.

Table No. 8: Table showing Proportion of income for investment of the respondents

Proportion	Respondents	Percentage
0-5%	33	15.6
5-10%	83	39.1
10-15%	70	33
Above 15%	26	12.3
Total	212	100

(Source: Primary Data)

Above table indicates that, 39.1% respondent used 5 – 10 % of income for the investment, 33% respondent used 10 – 15 % of income for investment, 15.6% of them used 0 – 5 % of income for investment & only 12.3% are use income above 15 % for investment. It is found that majority (39.1%) of the respondents are invested 5-10% proportion of income in stock market.

Table No. 9: Table showing Frequency of monitoring investment of the respondents

	Respondents	Percentage
Daily	44	20.7
Monthly	95	44.8
Quarterly	51	24.1
Annually	22	10.4
Total	212	100

(Source : Primary Data)

From above table, it is observed that, 44.8% of respondent monitor their investment monthly, 20.7% of them monitor investment daily & 24.1 % of them monitor their investment quarterly Only 10.4 % respondents monitor their investment annually. It is found that majority of the respondents are monthly monitor their investment.

SUGGESTIONS

1. Women investors should to be urged to put resources into more ways and take an interest in the investment of stock market and collect the knowledge about attending seminars.
2. They should take help of private financial consultant to have investment portfolio so as to reduce risk in investment.
3. Women have to perceive their monetary freedom and plan for the future to improve it.
4. Women should not invest in high volatile funds; they should collect all information before investment.

CONCLUSION

The study conducted shows that most of the women investors are not aware of various schemes of stock market. Majority respondents are from age between 21yrs to 30yrs earning by own and invested 5-10% proportion of their income in stock market. It is also found that majority of the respondents are young married and invested in stock market. Majority of respondents have Demat account in Zerodha. Most of the women investors are preferred Zerodha broking firm. Majority of the women investors are invested for financial Security of their future need. Most of the women investors are given preference for Equity fixed and Deposit. Most of the women investors in sangli districts are having less knowledge of investment of stock market and depends on others about the stock market investment. The majority of women have intended for fundamental investments, Life protection. It is suggested that Women investors should to be urged to put resources into more ways and take an interest in the investment of stock market and collect the knowledge about attending seminars. Also they should take help of private financial consultant to have investment portfolio so as to reduce risk in investment

REFERENCES

1. Banudevi P B (2014) :Impact of Investor's Awareness on Indian Capital Market. International journal of Science Advances
2. Guiso (2005) :Investor understanding on Investment in Stock Market. International Journal of Scientific Research.
3. Joshi (2012) :Awareness in Stock Market. International conference on Business Innovation.

4. Hira (2006): Women and Stock Market Participation. International Journal of Management and Applied Science.
5. Krishna.C.(2008) :A Study on venture model and understanding of voluntary division Investors. A journal of Management research.
6. Navdeep Kaur (2019) :Speculation manner of effective Women: A learning of culture area. International Journal of Scientific Research and Modern.
7. Paul (1972) : Venture Behavior of effective Women. International Journal of Innovative Technology and Exploring Engineering.
8. Ranganath (2003) :A Study on Investors Perception towards Stock Market. CVR Journal of Science and Technology.
9. Ullah, M.H., & Chowdhury, N.J., (2011) :Study of performance of womanly investor in Stock Market. International Journal of Scientific & Engineering Research.
10. Vohra (Oct 2016) :Awareness and Stock Market Participation of Women. International journal of creative research thoughts.
http://www.pbr.co.in/2016/2016_month/May/3.pdf
<http://www.indiainfoonline.com>
<http://www.researchgate.com>
<http://www.ijemr.net>
<http://www.academicjournal.com>
<http://www.internationalseminar.com>
<http://www.scribd.com>
<http://www.allresearchjournal.com>

SUGGESTION -

1. Women should to be urged to put resources into more ways and take an interest in the venture infrastructure which include high danger and significant yields.
2. They should take help of private financial consultant to have investment portfolio so as to reduce risk in investment.
3. Women have to perceive their monetary freedom and plan for the future to improve it.
4. Women should not invest in high volatile funds, they should collect all information before investment.

Debasish, Sathya Swaroop 2009). Investigating Performance of Equity based Mutual Fund Schemes in Indian Scenario. KCA Journal of Business Management, 22), 1-15.

UNDERSTANDING ASSEMBLY PRODUCTION SYSTEM WITH THE HELP OF MANUFACTURING CENTRIFUGAL PUMPS

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ABSTRACT

Background - Production processes are essential to produce product and the available processes limits, what products can be produced. A process converts inputs into outputs, in a production system.

Objective – This research paper is all about the production process of the centrifugal pumps, which production process is used in the industry, along with the other aspects of the raw material planning and handling. The main objective of this study is to understand and analyse study the assembly processes of Centrifugal Pumps in detail.

Methods – The primary and secondary data is collected. Also, the production manuals are studied and discussion with production manager, staff is done. The assembly process is studied with reference of research papers.

Results - The centrifugal pump consists of set of diffuser type casing, enclosed impeller, and inlet and outlet valves. The finished assembly of centrifugal pumps is achieved by assembly of parts like bearing housing, lantern bracket, enclosed impeller and casing cover.

Key Word: Assembly Production System, Centrifugal Pumps, Process

I) INTRODUCTION

Production processes are essential to produce products and the available processes limits what products can be produced. A process converts inputs into outputs in a production system. No product can be produced and no service can be provided without a process. Similarly, no process can exist without a product or service

This research paper is all about the production process of the centrifugal pumps, which production process is used in the industry, along with the other aspects of the raw material planning and handling, for the further use of the capacity of the plant to produce an output to fulfil the customer's needs.

II) OBJECTIVES OF THE STUDY

1. To study the different machines used for the assembly of Centrifugal Pumps in the organization.
2. To analyse assembly processes of Centrifugal Pumps in detail.
3. To identify facilities required for the assembly of Centrifugal Pumps in organization.

4. To give suggestions regarding processes and facilities for assembly of centrifugal pumps, if required.

III) IMPORTANCE OF THE STUDY

Importance of the study is as below –

This study is helpful to the researcher for understanding: -

1. The different machines used for the assembly of Centrifugal Pumps in the organization and assembly processes of Centrifugal Pumps in detail.
2. The study the facilities required for the assembly of Centrifugal Pumps in the organization.
3. Centrifugal Pumps are used for both chemical injection and irrigation pumping so the study of Centrifugal Pump is important from user point of view.

IV) RESEARCH METHODOLOGY

Under the research methodology the researcher has used primary sources and secondary sources for collecting data.

Primary Sources: -

The data collected through primary sources is called primary data. This data is collected by the researcher at first time so it is fresh data.

Under this research study, the researcher has used following.

(a) Discussion Method

(b) Observation Method

Secondary Sources

The data collected through secondary sources is called secondary data.

The researcher has used following secondary sources for collecting secondary data.

- (a) Industry Records
- (b) Production Manuals
- (c) Production Reports
- (d) Reference Books
- (e) Websites etc.

V) LITERATURE REVIEW

Centrifugal pumps play a particularly important role because of their capacity to handle high stream. In fact, centrifugal pumps compose more than 85% of the world's prolongation of pumps, as they are frequently used in commercial and industrial applications. Fluid enters the eye (center) of the impeller and exits through the space between the impeller blades to the space between the impeller and casing walls. The velocity and pressure both increase as the fluid flows through the impeller. The casing is airtight as well as watertight. Its cross-sectional area gradually increases towards the outlet of the pump.

We look at situational method engineering from a process perspective and propose two embedded generic models to support: - method construction, and -method of centrifugal pump assembly. Both are concerned with engineering methods matching a set of requirements

through a method assembly technique. The former deals with assembly 'in the large' whereas the latter offer solutions 'in the small'.^[1]

In the assembly of centrifugal pumps, the simplified design for assembly tool was used twice, firstly on an existing product and secondly on a product in development. In between, the team spent time on the shop floor to experience the challenges of assembling the existing product in reality. The centrifugal pump assembly analysis with observation of the real thing was very significant in helping the team to fully understand the implications of design decisions on ease of assembly.^[2]

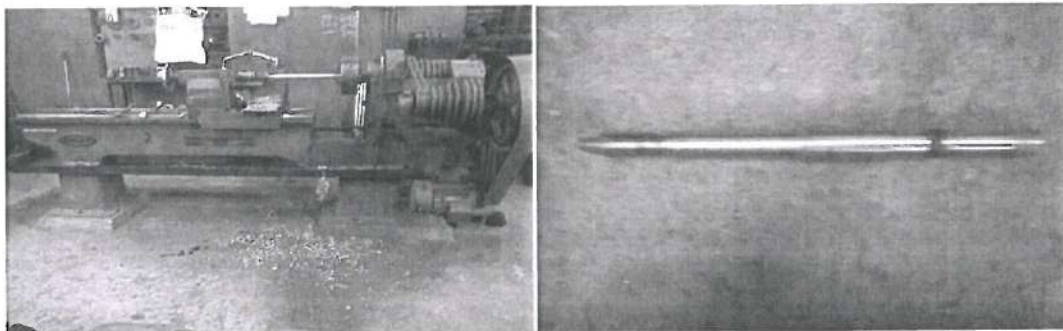
VI) ASSEMBLY PROCESS OF CENTRIFUGAL PUMPS

This is the assembly process for "Kirloskar Pump Division" i.e. KPD Pump 80 x 40.

Following are the specifications of the KPD 80 x 40 Pump:-

1. Suction head:- 80 x 125
2. Revolutions Per Minute i.e. RPM:- 1440 rpm
3. Serial No.:- 2014/15 Year
4. Flow rate:- 45 Litre/sec
5. Horse Power i.e. HP:- 15 HP
6. Kilowatt:- 1125 KW

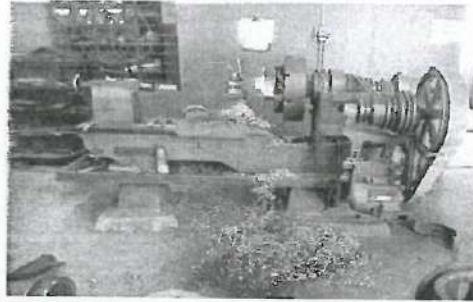
1.1 Steps of assembly process:



Step 1 – Shaft of required length and diameter and threading is manufactured on Lathe



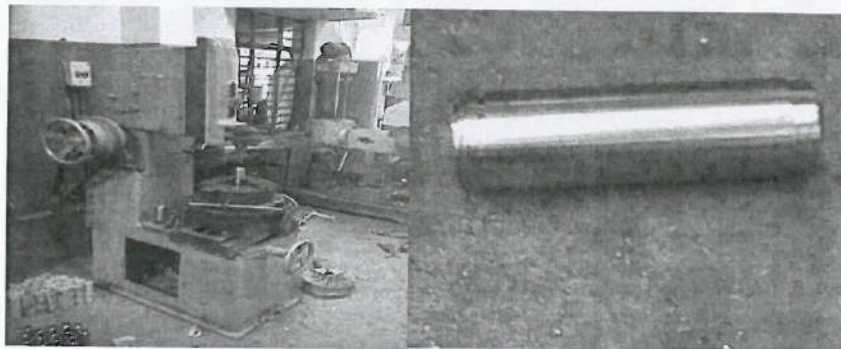
Step 2 – Casing of centrifugal pump is machined on lathe machine



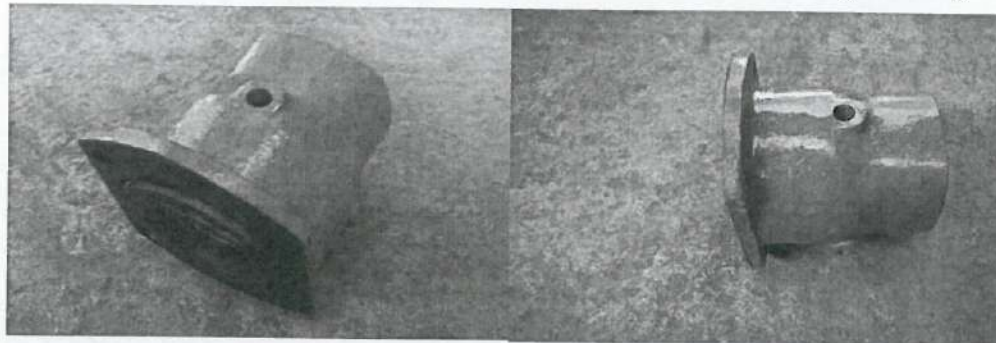
Step 3 – Enclosed Impeller is machined on lathe machine



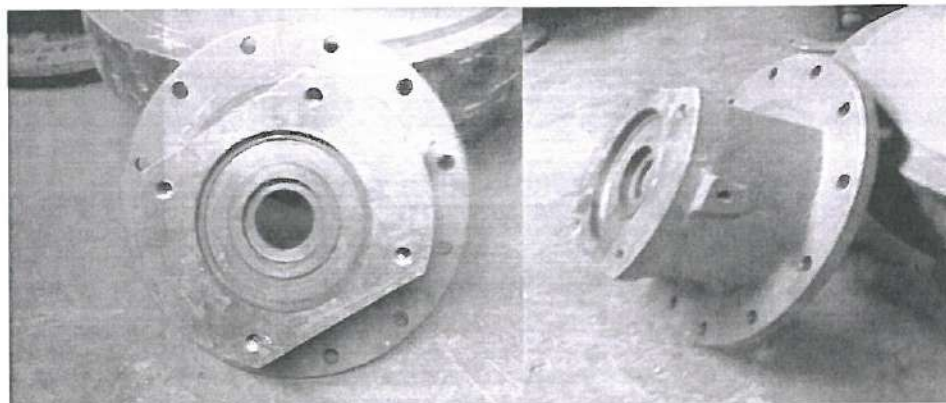
Step 4 – Keyway of required dimension is manufactured on Impeller by slotting machine.



Step 5 – Keyway of required dimension is manufactured on Sleeve by Slotting machine



Step 6 – Bearing housing (Shaft & Bearing is fitted in Bearing Housing.)



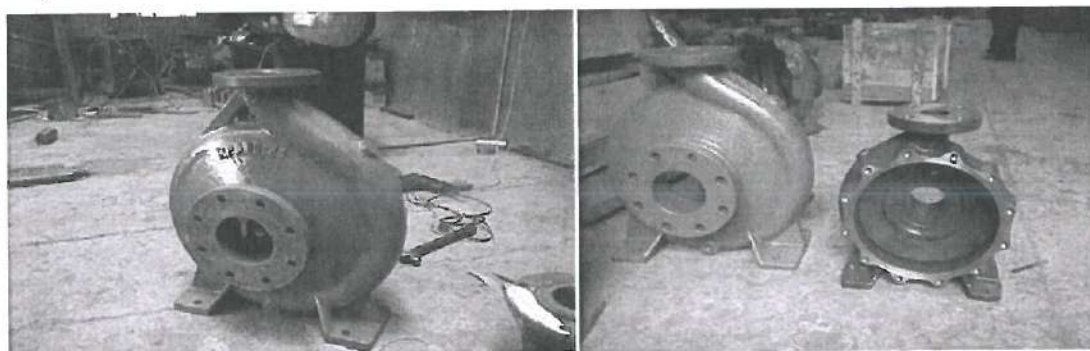
Step 4 – Lantern Bracket



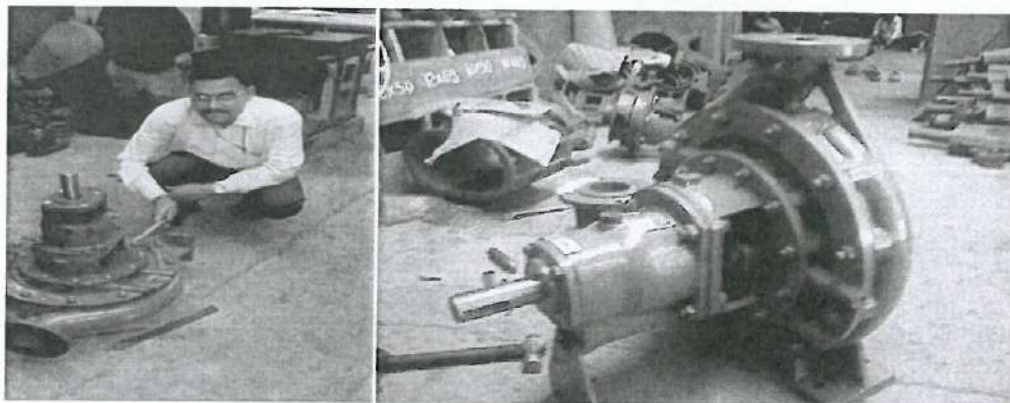
Step 7 –Assembly of Lantern Bracket (Bearing Housing is fitted in Lantern Bracket)



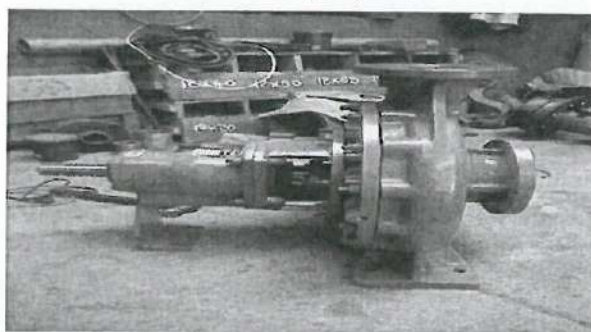
Step 8 – Casing cover (Assembly of Bearing Housing &Lantern bracket is fitted in Casing cover)



Step 9 – Casing of Centrifugal Pump



Step 10 - Assembly of Bearing Housing, Lantern Bracket and Casing cover is fitted in Casing
Of centrifugal pumps



Step 11 – Finished assembly of Centrifugal Pump

Flow Chart of Assembly Process of Centrifugal Pump: -

The Round metal bar is converted into shaft by operation of center facing and turning and threading on Lathe machine. The shaft is machined for required total length and diameter. Keyway operation is done on shaft and Sleeve by using Slotting Machine. Thus shaft is manufactured.



The Casting of Enclosed Impeller is machined on Lathe machine for obtaining required diameter. The keyway is manufactured at center of Enclosed Impeller by using Slotting machine.



The Casting of Casing of centrifugal pump is machined on Lathe machine for obtaining required diameter by facing and turning operation. The surface finishing operation is done by using flexible shaft grinder machine to remove irregular surface and burr on outer side of Casting of Casing of centrifugal pump.



Next, bearing of required size and specification is fitted in shaft. The Shaft and bearing is fitted in bearing housing. Thus sub-assembly of bearing housing is obtained. The sub-assembly of bearing housing is fitted in Lantern bracket. The Lantern bracket is fitted in Enclosed Impeller and Casing cover.



The Casing cover is fitted at opposite position of suction side in Casing of Centrifugal pump by using nut and bolts. Thus finished assembly of Centrifugal pump is obtained.



The name plate of specification of Kilo Watt, Horse Power Revolution per Minute (RPM), Flow Rate, and Suction Head of centrifugal pump is fitted at upper side of Centrifugal pump

VII) FINDINGS

- 1) There are different machines used for machining operations required for assembly of centrifugal pumps. These machines are lathe machine, slotting machine, drilling machine, flexible grinding machine.
- 2) The lathe machine plays an important role in assembly of centrifugal pumps because steel rods and castings of casings, impellers are machined for facing, turning, drilling, boring, threading operations which are directly performed with the help of lathe machine.
- 3) Band saw machine is used for cutting the steel rod of required length.
- 4) Flexible grinding machine is used for operation of obtaining finished and smooth surface of external area of casting of centrifugal pump. The bench grinder is used for obtaining the desired cut and angle of tools of lathe machine.
- 5) Drilling machine is used for drilling the hole of desired depth and diameter on impellers, casing cover operation.
- 6) Slotting machine is used for keyway operation on impeller, sleeve of shaft.
- 7) There are eleven steps included in the process of assembly of centrifugal pumps. Out of that four fitting processes are most important and difficult processes in assembly of centrifugal pumps. First is fitting of shaft and bearing in bearing housing. Second is fitting of bearing housing in lantern bracket. Third is fitting of lantern bracket in casing cover. Fourth is fitting of assembly of bearing housing, lantern bracket, casing cover in casing of centrifugal pump.

VIII) SUGGESTIONS

- 1) Instead of using the common lathe machines, the advanced Computer Numerical Controlled Lathe machines (i.e. CNC Machines) should be used, so that machining time will be minimized.
- 2) There should be separate quality inspection department for checking quality of centrifugal pumps. So that before taking trial test of centrifugal pumps there will not any leakage of fluid and any other problem occurs.
- 3) The monthly production volume of centrifugal pumps is highly fluctuating. So, it is suggested that the management needs to get regular customer's orders, so that production volume increases and production activity runs at higher capacity level.

IX) CONCLUSION

The centrifugal pump consists of set of diffuser type casing, enclosed impeller, and inlet and outlet valves. The bearing housing is provided at one end of shaft so pump chamber is separated from the electric motor by an air gap which provides thermal barrier. So, there is less heat transfer.

The Assembly of centrifugal pump starts from manufacturing of shaft and sleeve from round steel bar as raw material which is machined on Lathe machine. The keyway operation is carried out on shaft and sleeve and enclosed impeller by using Slotting machine. The shaft and bearing are fitted in bearing housing. The bearing housing is fitted in lantern bracket. The casting of Casing of centrifugal pump is machined on lathe machine. The bearing housing, lantern bracket, enclosed impeller, casing cover is in fitted on Casing of centrifugal pump.

Thus, the final finished assembly of Centrifugal Pump is achieved.

BIBLIOGRAPHY

I. Research Papers –

1. An assembly process model for method engineering – Jolita Ralyte, Colette Rolland,

Conference Paper June 2001, Research Gate

2. **A simplified approach to design for assembly** – James Moultrie and Anja M. Maier.
Journal of Engineering Design, January 2014, Vol. 25, Nos. 1-3, 44-63

II. Reference Books: -

1. Mr. S. K. Hajra Choudhury, Mr. A. K. Hajra Choudhury, Mr. Nirjhar Roy, Prof. Dr. S. C. Bhattacharya, Workshop Technology, Volume I - Manufacturing Processes, Media Promoters & Publishers, Mumbai (2018)
2. Mr. S. K. Hajra Choudhury, Mr. S. K. Bose, Mr. A. K. Hajra Choudhury, Mr. Nirjhar Roy, Prof. Dr. S. C. Bhattacharya Workshop Technology, Volume II - Machine Tools, Media Promoters & Publishers, Mumbai (2018)
3. Prof. Dr. M. T. Telsang, Industrial Engineering & Production Management, S. Chand & Company, New Delhi (2016)

III. Reference Websites: -

1. www.americanmachinetools.com
2. www.processpumpsindia.com
3. www.vi-india.com

IV. Data collected from Industries:

- (a) Industry Records
- (b) Production Manuals of Centrifugal Pumps
- (c) Production Reports of Financial Year

Discussion data collected from Production Manager and staff members of production department

**BRIDGING THE GAP BETWEEN INDUSTRY AND INSTITUTES BY
CONNECTING INDUSTRY THROUGH EXPERIENTIAL LEARNING AND
TEACHING ON VIRTUAL MODE DURING AND POST-COVID 19 SITUATIONS**

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ABSTRACT

In this paper, we purpose of the study is to go beyond conventional, traditional methods with offline to online training and teaching. The objectives of the proposed study are to find out the Industry academic advantages and bridging the gap between Academic qualifications from institutes to professional experience required from the industry. Allow learners both from the academic and corporate sides to explore the subject of their domain in their own sweet time. Also, make aware of the myths of the industry to mold their career in understanding quicker and realizing myths in better and quicker ways. To find out solutions developing the platforms to get students into internship without physically attending industry in adverse situations like COVID 19 that the whole world is going through. Furthermore, we develop a more and more practical approach by blending solutions supporting theory and academic knowledge. The study going to obtain primary data from 15 people; each from students, academicians from engineering and management institutes, corporates, and customers from various industries. Manpower requirement in industry Graduate Trainees, Management Trainees is very huge especially the most prominent non-IT industries is untapped, through face to face interview or online interview through virtual platforms using a mix of objective type and also open-ended questions using a set of semi-structured (close-ended and open-ended) questionnaire. And secondary data from published articles in journals, edited books, reports of industries, institutes, and different websites. The study has to identify the importance experiential importance of learning through virtual platforms to students during and also post-pandemic. The study will improve the employability of fresh engineers and management students at various industries to prove "job follows experience or experience follows jobs", Study helps in knowledge sharing, situations for learning, teaching, gaining industry knowledge for all students, faculties, academicians, and corporates by overall growth with AI, IoT of State in particular and country as a whole. Overall improvement of service industry through disruption leading to digital marketing further leading to attain better and latest market tool Pipeline to Platform marketing. We educate people and service providers should handle the challenges to ensure the service industry. The study also upgrades innovation and latest developments in the academy and industry both to go hand in gloves. The study has practical implications and helps to find resources, values for the corporates, particular institutions, customers at large, policymakers at Industry and Institutes, academicians, and research students of India in general and Maharashtra in particular.

Keywords: Online, offline, Disruption, Pipeline to Platform, Digitisation, Academic-Industry gap, Socioeconomic Advantages, and Challenges.

DOES MARKETING VARIABLES INFLUENCE BRAND LOYALTY?

A Stochastic study

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ABSTRACT

This paper describes an empirical study of the dynamics of consumer switching behavior across various brands of T-shirts among the teenagers. Markov model, a special type of stochastic process can be described in terms of a random variable indexed with respect to time. This variable can be either discrete or continuous. Markov analysis, applied in marketing problems, can be used to analyze various decision-making situations, however they are principally used for Brand Loyalty or consumer switching behavior studies. The concepts of marketing studies are thought as discrete from the time and place viewpoint and so finite Markov chains analysis can easily be applied for this kind of process. The purpose of this study is to examine the consumer switching behavior for t-shirts of various brands with Markov chains method. In this study, the data to examine the switching behavior have been obtained from 300 teenagers of Sangli city of Maharashtra (India). In this study it was observed that in forming the tendency of customers on becoming brand loyal, the marketing variables play an important role