TKM INTERNATIONAL JOURNAL FOR RESEARCH IN MANAGEMENT ISSN 2455-684X Special Issue : Technology, Education and Management Volume 5 Issue 1 2020

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ISSN 2455-684X

TKM INTERNATIONAL JOURNAL FOR RESEARCH IN MANAGEMENT

Special Issue
Technology, Education & Management | Volume 5 | Issue 1 | 2020

TKM Since 1956

TiM Since 1995

TKM INSTITUTE OF MANAGEMENT

The Legacy of TKM College Trust

The TKM College Trust was founded by Janab A.Thangal Kunju Musaliar, a successful industrialist, philanthropist and businessman. Born in a middle class family on 12th January 1897 at his ancestral home in Kollam. Janab Thangal Kunju Musaliar built up a vast business empire which dominated the cashew export trade in the 1940s and 50s. As a man of extra ordinary vision, he foresaw the tremendous importance of education and this led to the establishment of the TKM College Trust in the year 1956. T.K.M. College of Engineering, the first private Engineering College in Kerala, was set up by the Trust in 1958 followed by the T.K.M. College of Arts and Science in the year 1965. Janab Musaliar passed away on 19th February 1966 after an illustrious career that paved the way for advancement of professional education in Kerala.

True to the vision of its founder, the TKM College Trust has, over the years, added several other educational institutions to its fold - The TKM Institute of Management in 1995, The T.K.M. School of Communication & Information Technology in 1996, the T.K.M. Centenary Public School in 1997, the T.K.M. High School and T.K.M. Higher Secondary School in 2000, the T.K.M. Institute of Technology in 2002 and the T.K.M. School of Architecture in 2014.

Today, the dream of the late Janab A. Thangal Kunju Muslaiar of uplifting society through education has to a large extent been fulfilled. His life exemplifies greatness in its true sense. Several of his initiatives, innovations and achievements are standing monuments in the changing national and global scenario. No wonder that the Government of India has thought it fit to issue a commemorative stamp in recognition of the services of this great man in 2001.

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Volume 5| Issue1| 2020

TKM INSTITUTE OF MANAGEMENT
Kollam, Kerala, India

TKM
INTERNATIONAL JOURNAL FOR RESEARCH IN MANAGEMENT

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Special Issue: Technology, Education & Management **ISSN: 2455-684X**
Volume 5| Issue1| 2020

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4TH INTERNATIONAL RESEARCH CONFERENCE: CHANGING PARADIGMS IN TECHNOLOGY, EDUCATION & MANAGEMENT

INAUGURAL ADDRESS

Dr. V. P. Mahadevan Pillai

Honorable Vice Chancellor, University of Kerala

An important objective of this seminar is to critically examine the knowledge and to generate new knowledge and understanding. Presentations are expected to be on the basis of actual research carried out by resource person which gives us a deep understanding of the subject and current status of research on the subject . I request participants to take note of the points, made here, critically examine them and raise issues for more clarification and understanding . The role of delegates and participants is to deliberate and carry forward the scientific thought process. Swami Vivekananda pointed out that the manifestation of perfection is already in man

In the process of education, teachers play an important and a vital role. In modern education, the scope for character building has been given less emphasis. Along with knowledge, a person should know about himself too. Inheritance of compassion, human value, and love are important., This must include towards nature, animals, birds and all society. Knowledge without compassion has less value .It is similar to the value of zero; when zero stands alone it has no value but any number placed left to zero will provide great value to zero. Similarly, knowledge together with compassion has great values.

The term Science means systemized knowledge about the truth of a phenomenon It is a concept of significance of phenomenon – birth, death, success and failure .Science is an investigation into the phenomenon of truth .The world of science is essentially an exploration to new thoughts, new ideas and new models, where knowledge will find applications.

Scientific exploration is an empirical capturing of non theories and models in order to resolve problems encountered in situations. All inventions and discoveries are an outcome of the pursuit for truth and resolution to human problem needs and the pursuit for creating new products, services, applications and designs and new models. Methodology of science is an assumption that through methodology we can discover new knowledge and the movement of the research from what we know to an unknown. Pushing the known knowledge to discover unknown is what Newton and Einstein did. Only through research we can understand and build up knowledge. Thus scientific exploration would involve deep introspection. One can go for better understanding of its application. This introspection is followed by experimenting, observing, experiencing and redefining empirical data. A transformation from raw data to information to knowledge.

But the main objective is potential of science in transferring from knowledge to wisdom. Technology is the application of theory, solving some problems. Technology is an outcome of science. .Technology is the sum of skills, methods and techniques used in producing goods or services for the accomplishment of objectives such as scientific investigation. As technology is changing over time from CR television to plasma to LED.

Dilemma in mind is whether current technical education leads to help him to work in the future? Are the current technicians have good work experience? Are technical graduates more proficient to work in technical area? Do our technical institutes provide a suitable learning system? Do these students who are coming out able to work with technology? Do we provide them with a suitable system?

Yesterday's technical education was focused on theories. In this way students learn more theories and have less work experience. As a result productivity decreases considerably. Incorporating rapid changes in a technology in to curriculum is also a challenge .Engineering graduates are not well qualified according to Industry needs .For meeting needs, they spend more money to acquire additional skills. For this, Industrial training and finishing schools are required.

So a curriculum should be incorporated which provides an insight of work experience and project based learning. Students must have a clear vision of new problems emerging in the field of technology as well as need for products. Tomorrows technical graduates can be molded by basic technical education and advanced technical education – which will enable technocrats of tomorrow to work for the country.

A sharp decline in student's enrollment in technical education which indicates a lack of interest of student's community in technical education. Students can be attracted if they are made understood about today's trends and need of technical education. This will open up new opportunities as well as dropout ratio will also decrease in technical institutions. The outcome of education with practical education implemented by technical university will be a solution for all the above problems. Molding a technocrat with basic technical and as well as experience in latest technology will be up healing the new technologist for the country. Through this a matured outcome will come with a practical knowledge experience.

4TH INTERNATIONAL RESEARCH CONFERENCE: CHANGING PARADIGMS IN TECHNOLOGY, EDUCATION & MANAGEMENT

PRESIDENTIAL ADDRESS

Jb. T.K. Shahal Hassan Musaliar

Chairman, TKM Institute of Management

Distinguished Dr. V. P. Mahadevan Pillai, Vice Chancellor, Learned Research Faculty, Ladies & Gentlemen,

I am indeed happy to preside over the 4th International Research Conference of TKM Institute of Management on the topic "Changing Paradigms in Technology, Education & Management" via the virtual platform today.

As a management institute, TKM Institute of Management has to undertake research activities for generating a knowledge base to offer programmes and services relevant to the industry. The institution has to be responsive to the needs of the industry and of the state and the country and sound research must be undertaken to support this objective.

The pandemic has disrupted education and management as never before and challenged technology. Industry and commerce are seeing changes in business models which need continuing research. Sound data evidence backed research lays the foundations for innovations and progress in industry and commerce. Such efforts also help instill a scientific enquiry and exploratory bend of mind in the young minds. So, the theme of Changing Paradigms in

Technology, Education and Management is quite relevant.

I compliment the organizers for the time relevance of the topic and the eminence of the speakers who are here today.

I am delighted to see Vice Chancellor, Dr. Mahadevan Pillai, being here to inaugurate the Conference. He will give proper direction to applied research. He is an eminent researcher and an acclaimed academic. Under him, I observe that the University of Kerala is focused on research, innovation, teaching and extension services in a student - centric learning environment.

I also observe that the national and international key note speakers at the conference are eminent researchers.

I wish the deliberations at today's Conference all success and look forward to the proceedings of the Conference. Jai Hind

CASE STUDY: IMPACT OF TALENT MANAGEMENT ON IT SECTOR: MAKING HR AGILE

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ABSTRACT

To study the domains related to Talent Management and how it helps to retain current potential in order to reduce employee turnover. Quantitative analysis has been done by making use of business intelligence tool SPSS to draw quantifiable and data driven inferences. Data has been collected from more than hundred professionals who have diverse experience in IT industry. Talent management proves to be an essential business strategy that IT organizations hope will enable them to retain their topmost talented and skilled employees. In the research analysis it has been clear in order to retain female employees' talent development by competencies and factors influencing current employment plays very important role. In order to reduce male employees' turnover talent development strategies are required to be ameliorated. In short talent management has become one of the most important players in corporate world of HR and training today. Organizations thus, know that they must have the best talent in order to succeed in the hyper competitive and increasingly complex global economy.

Keywords--- *Talent Management, Retain potential, Employee turnover, organizational effectiveness*

I. INTRODUCTION

Talent management is very important topic when it comes under Human resource. Talent management is an organization's responsibility to hire, retain, and develop the talented and superior employees available in the job market. It comprises of all the work processes and systems which are related to holding on to and developing a superior workforce. Talent management is thus, a business strategy that organizations believe will enable them to retain their most talented and skilled employees.

II. SIGNIFICANCE

- The basic purpose of talent management is to do a proper recruitment, develop and train the employees.
- The HR Department always endeavors to bring out right people to the right job at a very right time.
- Establishing a high-performance standard in the workplace.
- Attracting individuals with high potential and retaining them through proper training and refreshment.
- Increasing the productivity of the organization.
- Proper time management, as untrained and unskilled workforce lead to wastage of time and commitment of errors, which is not cost-effective.
- Retain talented and high-performing employees.
- Ensuring growth and innovation in the organization.
- Developing skills and competencies in employees.

III. ADVANTAGES OF TALENT MANAGEMENT

- Connecting and Sharing Data
- Strategic Hiring Process
- Improved Onboarding Experience
- Retain Top Talent
- Employee Development
- Improved Employee Experience
- Increase Employee and Manager engagement

In short talent management has become one of the most important players in corporate world of HR and training today. Organizations thus, know that they must have the best talent in order to succeed in the hyper competitive and increasingly complex global economy. This process of talent management is continuous and thus involves identifying talent gaps and vacant positions, sourcing for and onboarding the suitable candidates, growing them within the system and developing needed skills, training for expertise with a long term in forward-focus and effectively engaging, retaining and motivating them to achieve long-term business goals. Talent Management comes up with its own disadvantages or challenges. They are the obstacles which create a hindrance in the study. Once they are closely studied, they can be eliminated or mitigated.

IV. THE CHALLENGES

- To attract and retain enough employees at all levels to meet the needs of organic and inorganic growth (HBR, n.d.) - All the major companies in IT sector are facing a talent crunch. Even if attracting the talent seems easy but retaining them is a tough challenge faced by not only IT sector but also in other sectors in the economy.
- To formulate an overall marketing strategy that appeals to many generations - Many companies are struggling to create an employee experience that appeals to individuals with diverse needs, preferences and assumptions mainly because there are four generations working. The Gap, for example, has 100,000 people in its workforce. Corporate roles and leadership ranks are primarily made up of Gen X and Boomers where as traditional stores have a high percentage of Gen Y employees.
- To develop a raw leadership structure: One of the biggest potential threats to many corporations is a lack of a robust talent pool from which to select future leaders. This is in part a numbers issue – the Gen X cohort is precious because they are small. Also, it is an issue of interest – many members of Gen X are simply not particularly excited about being considered for these roles.
- Holistically combining the capabilities of potential recruits who lack the wide scope of global leadership: It is relatively straightforward to identify and assess experts in specific functional or technical arenas. Instead it is even more difficult to assess whether those individuals have the people skills, leadership capabilities, business breadth, and global diversity sensibilities required for the nature of leadership today.
- To transfer key knowledge and relationships. The looming retirement of a significant portion of the workforce challenges all companies, but specifically those who are dependent on the strength of tacit knowledge, such as that embedded in customer relationships, a key to Mercer's business success.

V. Objective and Research Questions

The objective of this paper is to study the domains related to Talent Management and how it helps to retain current potential in order to reduce employee turnover. This paper asks research questions such as What is the outcome of Talent Management strategies when applied to workplace? What are the domains which are closely related to Talent Management?.

VI. Domains of Talent Management

All the below factors were taken into consideration during the study from all the respondents.

a. **Identify Talent by Competencies, Results, and Potential:** Most of the companies use this strategy of Identifying the talent by competencies by Creating profile of leadership jobs, Creating Profile Management, Total contribution, Team Efforts, Accountability for Complex Jobs, Sales, Profit Margin, Skills, Experience, Willing to tackle complex jobs, and Ability to learn new skills.
b. **Talent Development Methods**: To acquire new talent by Attracting by creating an Employer Brand, Sourcing uses various strategies, and Selecting using effective selection process. To leverage existing talent by maximizing the value of the current high potential, using the performance management systems, and realigning the capabilities and responding to the changing conditions. To retain the current potential by Employment Value Proposition by offering the potentials what they want, Offer the potentials systematic and targeted development opportunities.
c. **Talent Development Strategies**: Job experience, accelerated development of high performers, forge mentoring relationship to build motivation, focused training program or career transition, making coaching a part of each development.
d. **Factors Influencing Current Employment**: Compensation and benefits, challenging role, Leadership Style, Learning Opportunities, Easier to commute to workplace.
e. **Consequences of Employee Turnover:** Loss of Productivity, Loss of Business Opportunities, Loss of Expertise, High financial costs, Image of the organization, Disruption of Social and communication Network.
f. **Challenges in Retaining Employees**: Managing expectations of employees, matching person to the job, provide adequate opportunities for career and development for employees, treat employees fairly-through compensation, rewards and recognition schemes, and Fostering good relations with supervisors.

VII. DEMOGRAPHICS

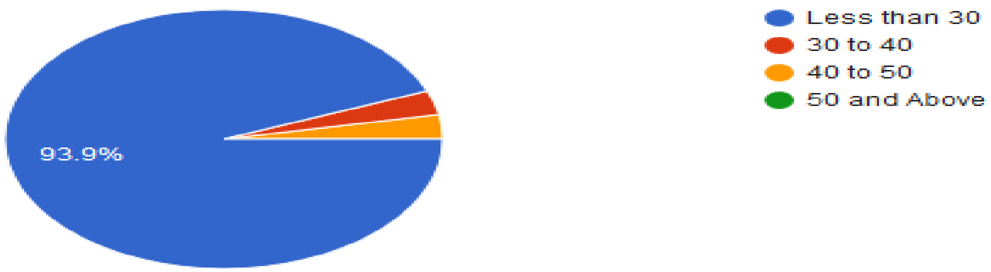


Figure No. 1: Age

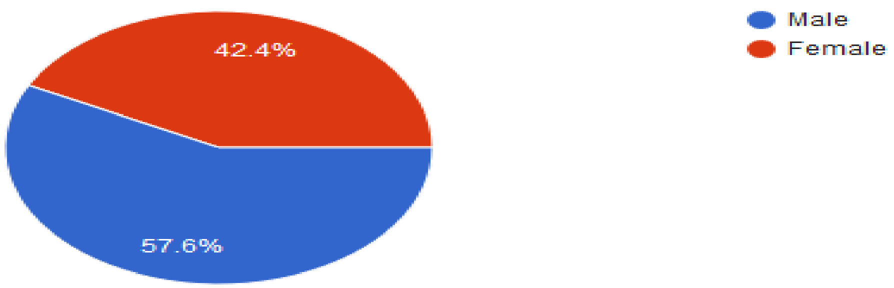


Figure 2: Gender

Figure 3: Experience

VIII. Talent Management Overview

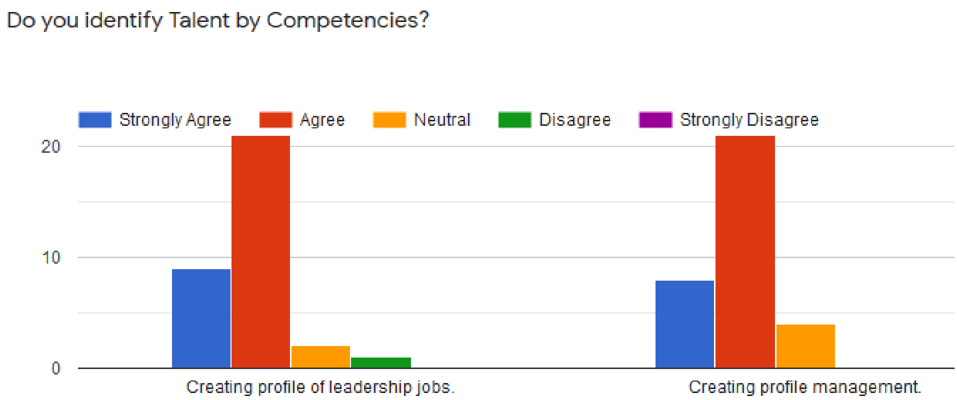


Figure 4: TMO Q1

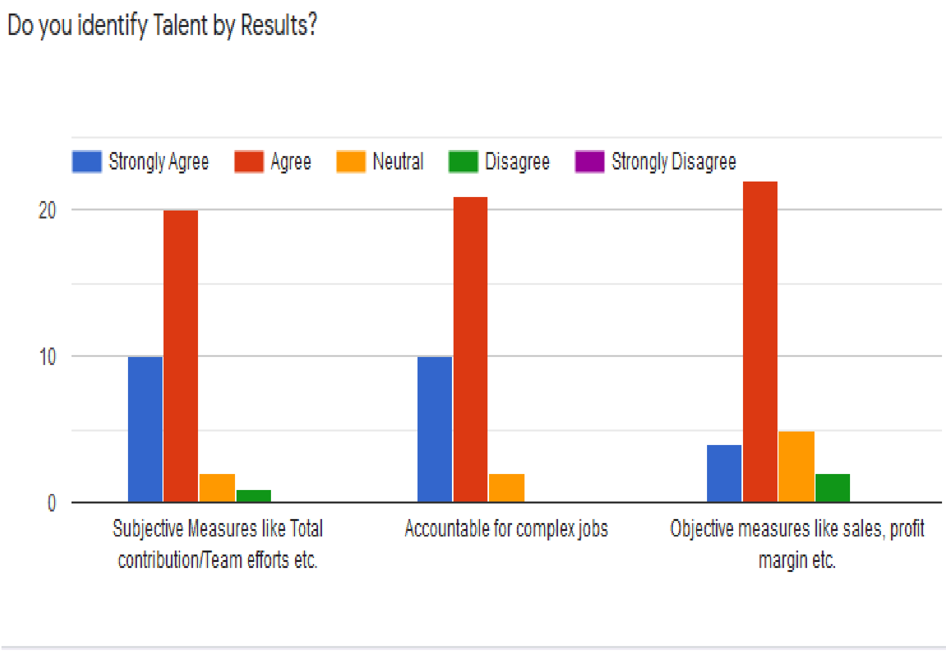


Figure 5: TMO Q2

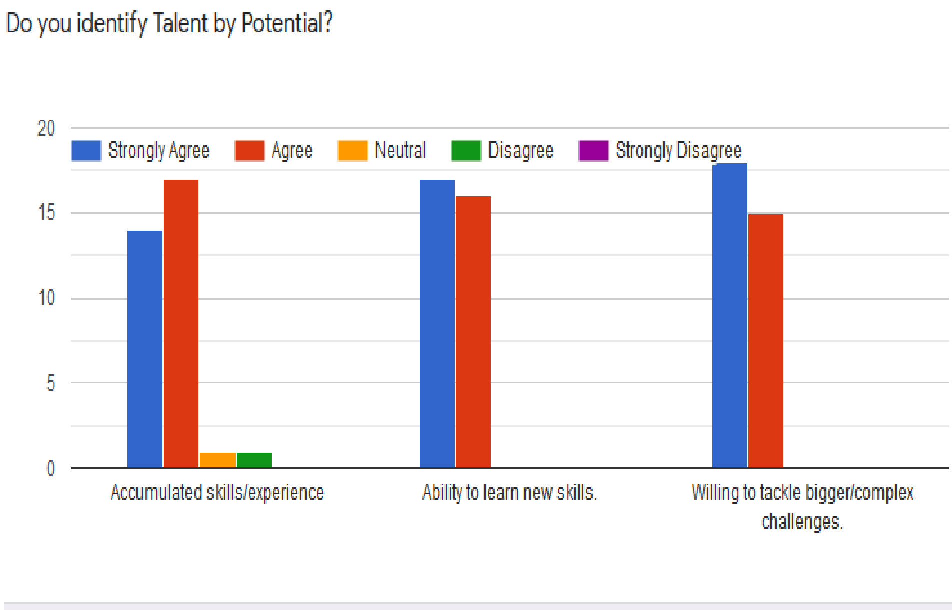


Figure 6: TMO Q3

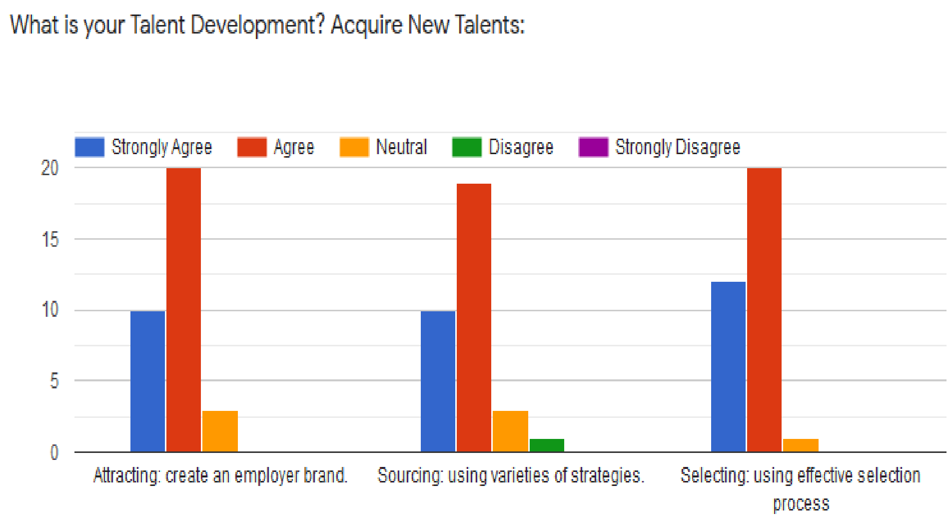


Figure 7: TMO Q4

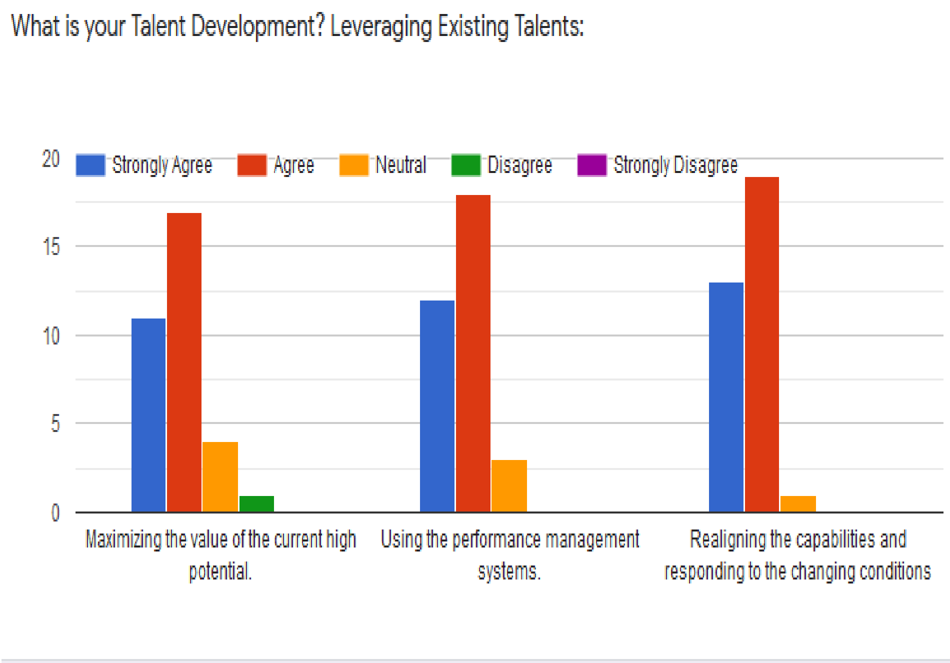


Figure 8: TMO Q5

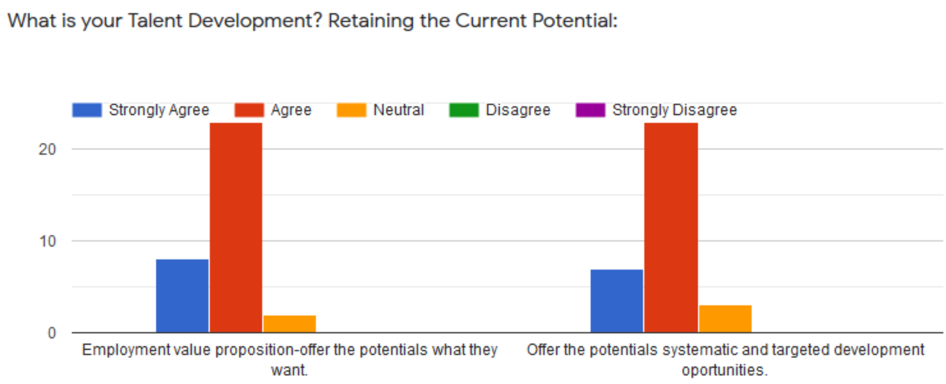


Figure 9: TMO Q6

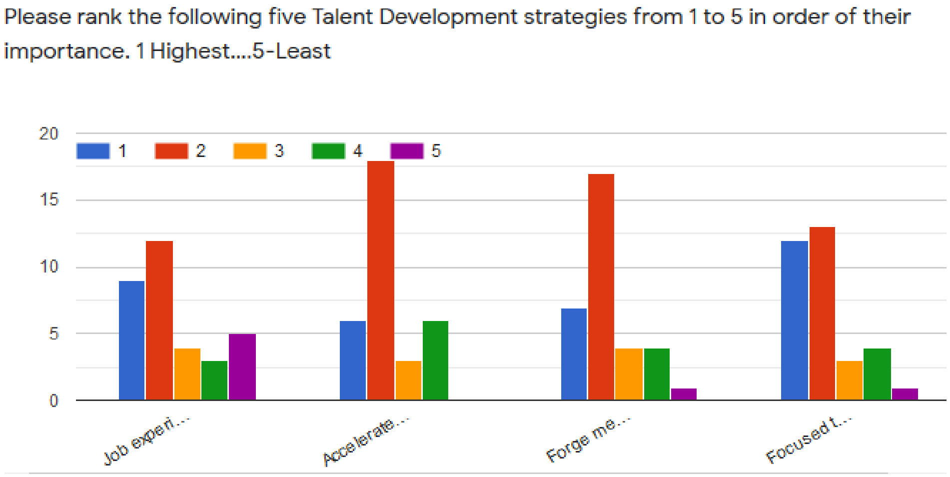


Figure 10: TMO Q7

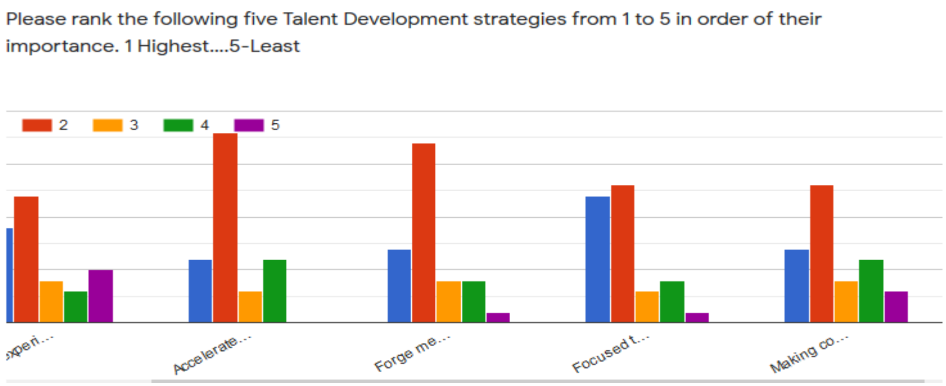


Figure 11: TMO Q8

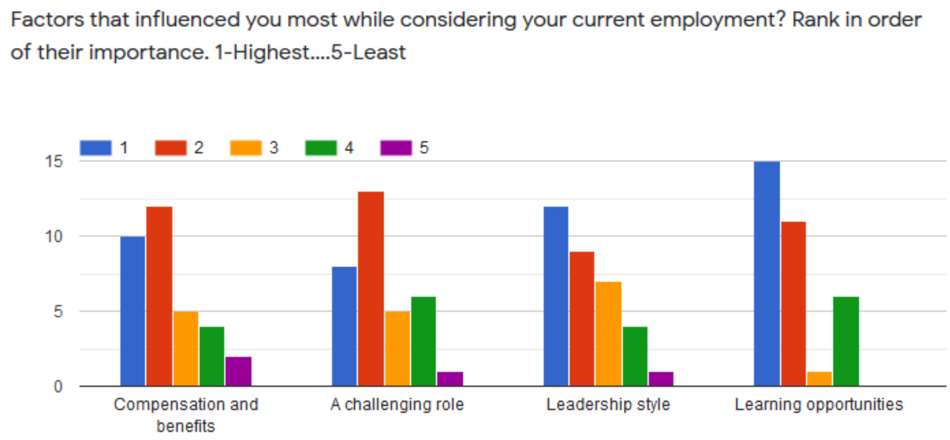


Figure 12: TMO Q9

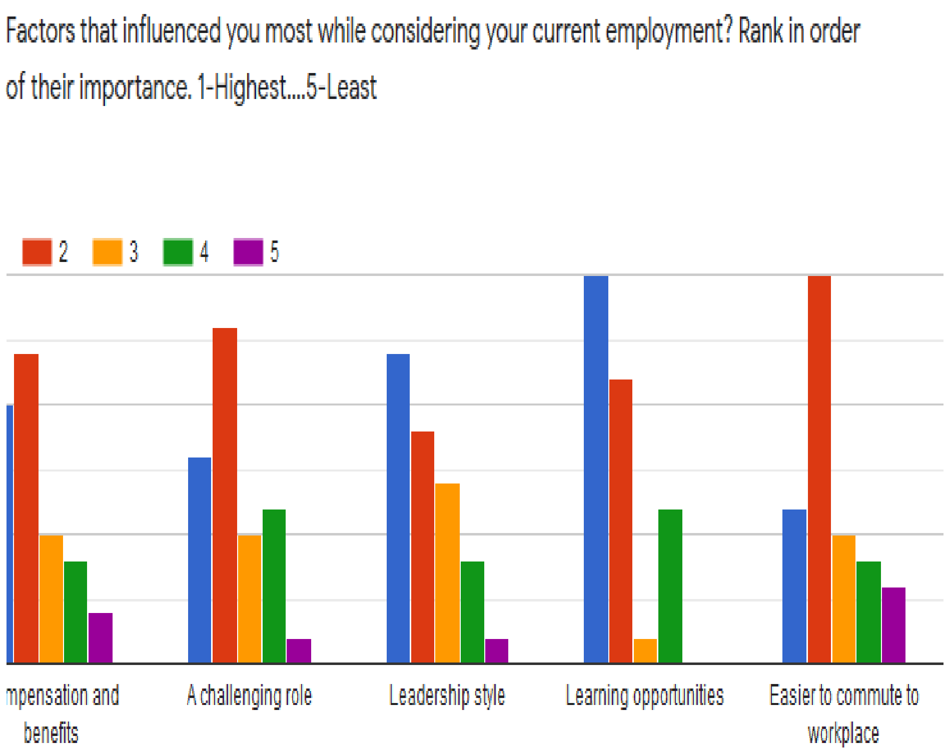


Figure 13: TMO Q10

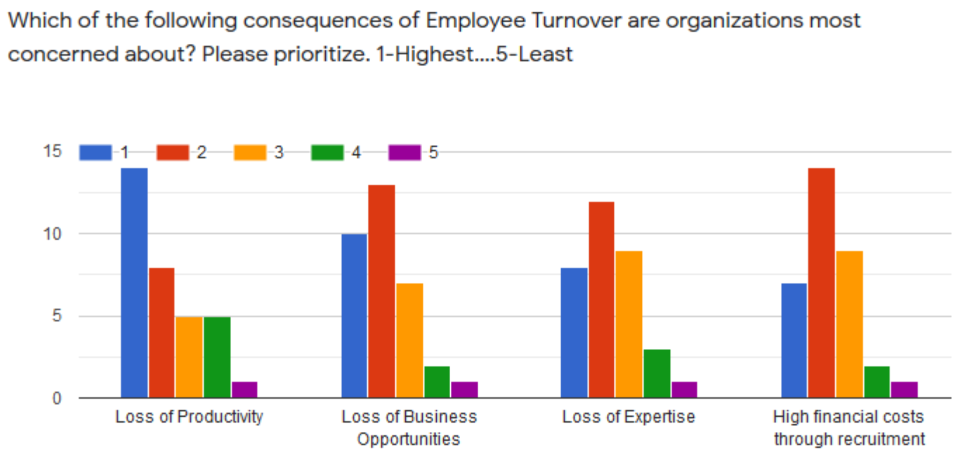


Figure 14: TMO Q11

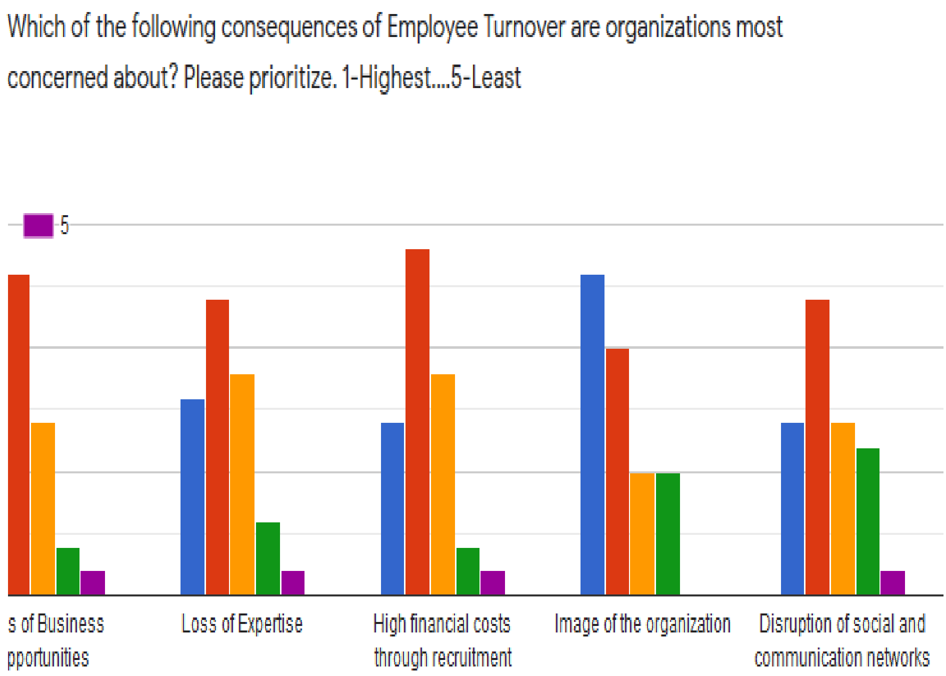


Figure 15: TMO Q12

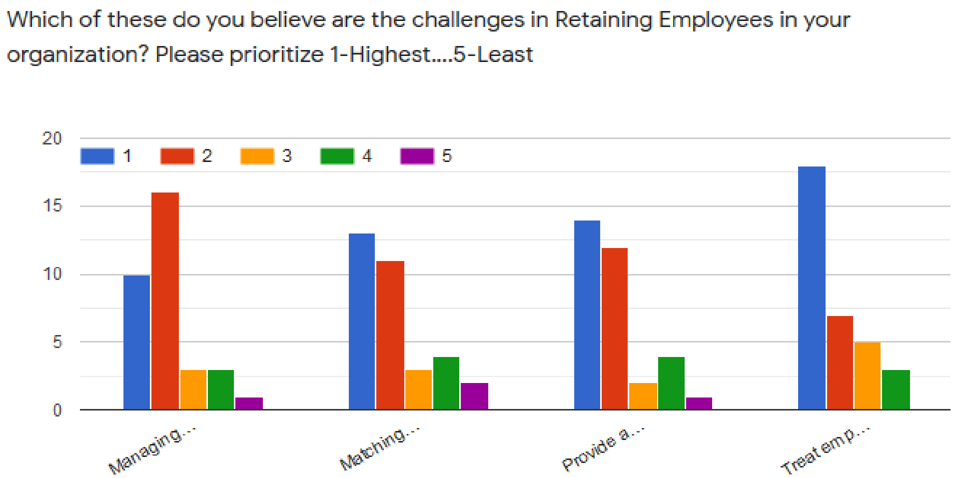


Figure 16: TMO Q13

Figure 17: TMO Q14

IX. QUANTITATIVE ANALYSIS AND INFERENCES

Future of HR believes in data driven decision making which comprises strategic decisions incorporating data driven predictions. HR Analytics proved to be an essential tool of deriving insights from the information. It mainly focuses on talent practices enabler, technology integrator, design and productivity architect, culture and employees' experience facilitator and educator and coach. In this case study exploration of each and every factor which contributes to talent management has been taken into consideration. IT Sector has been targeted and response from IT employees has been taken in order to understand their perspective towards the talent management process of their respective organization. Quantitative analysis has been done to bring out feasible inferences for increasing profitability of an organization as well as better decision making. Descriptive statistics takes the data and summarizes into understandable. It basically signifies "what is happening." In this descriptive statistics mean, standard deviation, skewness and kurtosis has been calculated. In Human Resources major emphasis is given on skewness value which should be in between -1 and +1. As skewness of these components did not lie in range of -1 and +1 so these components are removed which are as follows Age, experience, accumulated skill experience, technical skill and leadership, managing experience of employees, matching person to the job, career growth and opportunity, rewards and recognition. This step has been taken in order to improve the analysis in further process. In social science Kurtosis is not taken into consideration.

Cronbach's alpha is a measure of internal consistency, which means how closely related set of items are as a group. It is considered to be a measure of scale reliability. It checks the reliability of data. As Cronbach alpha is 0.944which is greater than 0.6 and 0.7. This shows that the data is reliable.

Kaiser-Meyer-Olkin (KMO) test is a measure of how suited data is used for factor analysis. This test measures sampling adequacy for each variable in the model to determine complete model. KMO should be greater than 0.7. If it is greater than 0.7, it is appropriate to ahead with factor analysis.

Factor analysis is done in order to reduce many individual items into a fewer number of dimensions. It can be used to make data simpler and making data ready for regression models. On the basis of factor analysis following factors have been identified on the basis of male and female:

Table 1: Descriptive Statistics

		Age	Gender	Experience	Do you identify Talent by Competencies? [Creating profile of leadership jobs.]	Do you identify Talent by Competencies? [Creating Profile management.]	Do you identify Talent by Competencies? [Creating Subjective measures.]	Do you identify Talent by Results? [Accountable for complex jobs]	Do you identify Talent by Results? [Objective measures like sales, profit margin etc.]	Do you identify Talent by Potential? [Accumulated skills/experience]	Do you identify Talent by Potential? [Ability to learn new skills.]
N	Valid	33	33	33	33	33	33	33	33	33	33
	Missing	0	0	0	0	0	0	0	0	0	0
Mean		1.0909	1.4242	1.2121	1.8485	1.8788	1.8788	1.7576	2.1515	1.6667	1.4848
Std. Deviation		.38435	.50189	.48461	.66714	.59987	.59987	.56071	.71244	.69222	.50752
Skewness		4.503	.321	2.310	.850	.038	.038	-.040	.874	1.159	.064
Std. Error of Skewness		.409	.409	.409	.409	.409	.409	.409	.409	.409	.409
Kurtosis		20.828	-2.023	5.036	2.334	-.072	-.072	-.201	1.524	2.572	-2.129
Std. Error of Kurtosis		.798	.798	.798	.798	.798	.798	.798	.798	.798	.798

Do you identify Talent by Potential? [Willing to tackle bigger/complex challenges.]	What is your Talent Development ? Acquire New Talents: [Attracting: create an employer brand.]	What is your Talent Development ? Acquire New Talents: [Sourcing: using varieties of strategies.]	What is your Talent Development ? Acquire New Talents: [Selecting: using effective selection process]	What is your Talent Development ? Acquire New Talents: [Leverize maximise: using effective selection process]	What is your Talent Development ? Leveraging Existing Talents: [Using the performance management systems.]	What is your Talent Development ? Leveraging Existing Talents: [Leveraging capability]	What is your Talent Development ? Retaining the Current Potential: [Employment value proposition- offer the potentials what they want.]	What is your Talent Development ? Retaining the Current Potential: [Offer the potentials systematic and targeted development oportunities.]	Please rank the following five Talent Development strategies from 1 to 5 in order of their importance. 1 Highest....5- Least [Job experience matters most]	Please rank the following five Talent Development strategies from 1 to 5 in order of their importance. 1 Highest....5- Least [Accelerated development of high performers.]
33	33	33	33	33	33	33	33	33	33	33
0	0	0	0	0	0	0	0	0	0	0
1.4545	1.7879	1.8485	1.6667	1.6667	1.7273	1.6364	1.8182	1.8788	2.4848	2.2727
.50565	.59987	.71244	.54006	.54006	.62614	.54876	.52764	.54530	1.39466	.97701
.191	.099	.782	-.094	-.094	.262	.020	-.213	-.099	.732	.690
.409	.409	.409	.409	.409	.409	.409	.409	.409	.409	.409
-2.094	-.284	1.364	-.743	-.743	-.524	-.841	.350	.501	-.706	-.403
.798	.798	.798	.798	.798	.798	.798	.798	.798	.798	.798

Please rank the following five Talent Development strategies from 1 to 5 in order of their importance. 1 Highest....5-Least [Forge mentoring relationship to build motivation and loyalty]	Please rank the following five Talent Development strategies from 1 to 5 in order of their importance. 1 Highest....5-Least [Focused training program or career transition, technical Skills and Leadership Development]	Please rank the following five Talent Development strategies from 1 to 5 in order of their importance. 1 Highest....5-Least [Making coaching a part of each development discussion]	Factors that influenced you most while considering your current employment? Rank in order of their importance. 1-Highest....5-Least [Compensation and benefits]	Factors that influenced you most while considering your current employment? Rank in order of their importance. 1-Highest....5-Least [A challenging role]	Factors that influenced you most while considering your current employment? Rank in order of their importance. 1-Highest....5-Least [Leadership style]	Factors that influenced you most while considering your current employment? Rank in order of their importance. 1-Highest....5-Least [Learning opportunities]	Factors that influenced you most while considering your current employment? Rank in order of their importance. 1-Highest....5-Least [Easier to commute to workplace]	Which of the following consequences of Employee Turnover are organizations most concerned about? Please prioritize. 1-Highest....5-Least [Loss of Productivity]	Which of the following consequences of Employee Turnover are organizations most concerned about? Please prioritize. 1-Highest....5-Least [Loss of Business Opportunities]	Which of the following consequences of Employee Turnover are organizations most concerned about? Please prioritize. 1-Highest....5-Least [Loss of Expertise]
33	33	33	33	33	33	33	33	33	33	33
0	0	0	0	0	0	0	0	0	0	0
2.2424	2.0606	2.5455	2.2727	2.3636	2.1818	1.9394	2.4848	2.1212	2.1212	2.3030
1.03169	1.11634	1.27698	1.20605	1.14067	1.15798	1.11634	1.20211	1.21854	1.02340	1.04537
.932	1.022	.563	.801	.560	.651	.987	.785	.748	.861	.562
.409	.409	.409	.409	.409	.409	.409	.409	.409	.409	.409
.492	.308	-.794	-.203	-.630	-.507	-.363	-.207	-.634	.601	-.049
.798	.798	.798	.798	.798	.798	.798	.798	.798	.798	.798

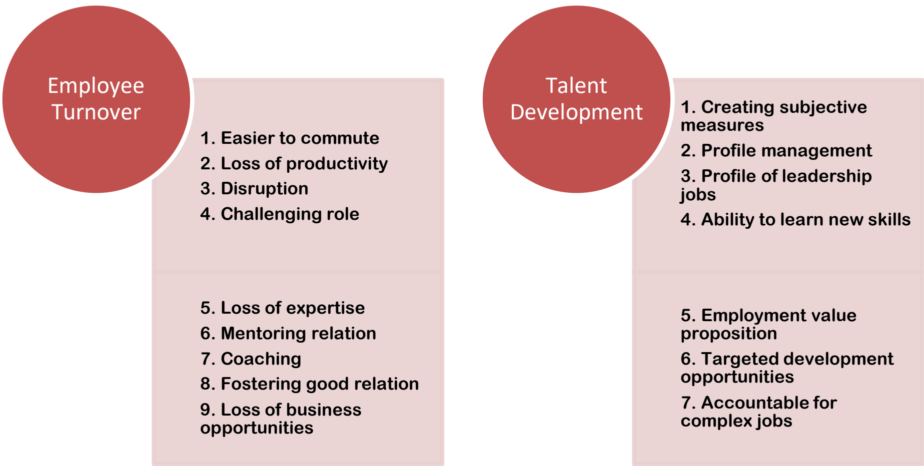
Which of the following consequences of Employee Turnover are organizations most concerned about? Please prioritize. 1-Highest....5-Least [Loss of Business Opportunities]	Which of the following consequences of Employee Turnover are organizations most concerned about? Please prioritize. 1-Highest....5-Least [Loss of Expertise]	Which of the following consequences of Employee Turnover are organizations most concerned about? Please prioritize. 1-Highest....5-Least [High financial costs through recruitment]	Which of the following consequences of Employee Turnover are organizations most concerned about? Please prioritize. 1-Highest....5-Least [Image of the organization]	Which of the following consequences of Employee Turnover are organizations most concerned about? Please prioritize. 1-Highest....5-Least [Disruption of social and communication networks]	Which of these do you believe are the challenges in Retaining Employees in your organization? Please prioritize 1-Highest....5-Least [Managing expectations of employees]	Which of these do you believe are the challenges in Retaining Employees in your organization? Please prioritize 1-Highest....5-Least [Matching person to the job]	Which of these do you believe are the challenges in Retaining Employees in your organization? Please prioritize 1-Highest....5-Least or matching job profile]	Which of these do you believe are the challenges in Retaining Employees in your organization? Please prioritize 1-Highest....5-Least [Providing opportunities]	the challenges in Retaining Employees in your organization? Please prioritize 1-Highest....5-Least [Treat employees fairly - through compensation, rewards and recognition schemes.]	Which of these do you believe are the challenges in Retaining Employees in your organization? Please prioritize 1-Highest....5-Least [Fostering good relationship with supervisors]
33	33	33	33	33	33	33	33	33	33	33
0	0	0	0	0	0	0	0	0	0	0
2.1212	2.3030	2.2727	2.0606	2.4545	2.0606	2.1212	1.9697	1.7879	2.5152	2.5152
1.02340	1.04537	.97701	1.08799	1.12057	1.02894	1.24392	1.13150	1.02340	1.32574	1.32574
.861	.562	.690	.648	.404	1.155	1.001	1.165	1.013	.651	.651
.409	.409	.409	.409	.409	.409	.409	.409	.409	.409	.409
.601	-.049	.590	-.853	-.705	1.139	-.004	.536	-.224	-.676	-.676
.798	.798	.798	.798	.798	.798	.798	.798	.798	.798	.798

Table 2: Reliability Test

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.949	.944	41

Figure 18: The Factors



Gender – Male: On the basis of rotated component matrix two main factors have been identified which include:

a. Employee Turnover: It includes variables which are the reason for employee turnover and also various strategies to retain employees.
b. Talent Development: It includes various variables which play an important role in developing talent by means of different approaches.

Gender – Female

On the basis of rotated component matrix five main factors have been identified which include:

a. Organizational effectiveness
b. Talent Competencies development
c. Retaining current Potential
d. Acquiring new talent
e. Factors influencing current employment.

Organizational effectiveness	Talent Competencies development	Retaining current potential	Acquiring new talent	Factors influencing current employment
Leadership style	Profile of leadership job	Employee value proposition	Effective selection process	Easier to commute
Loss of productivity	Profile management	Ability to learn	Leverage maximum	Job experience
Image of organization	Subjective measures	Target development opportunities	Sourcing	Compensation and benefits
Challenging role	Objective measures	Leveraging capability	Attracting	
Loss of business opportunities		Leveraging existing talent using PMS		
Learning opportunities		Willing to tackle complex problems		
Matching job profile				
Loss of expertise				
Fostering good relation with supervisors				
Disruption				
High financial cost				

Table 3: Observed Variables

Table 4: Rotated component Matrix	
Organizational Effectiveness	
Leadership style	0.925
Loss of productivity	0.876
Image of organization	0.858
Challenging role	0.835
Loss of business opportunities	0.824
Learning opportunities	0.816
Matching job profile	0.771
Loss of expertise	0.742
Fostering good relation with supervisors	0.696
Disruption	0.685
High financial cost	0.633
Talent Management by Competencies	
Profile of leadership job	0.874
Profile management	0.865
Subjective measures	0.865
Objective measures	0.635
Retaining Current Potential	
Employee value proposition	0.908
Ability to learn	0.705
Target development opportunities	0.689
Leveraging capability	0.689
Leveraging existing talent using PMS	0.688
Willing to tackle complex problems	0.620
Acquire new Talent	
Effective selection process	0.945
Leverage maximum	0.945
Sourcing	0.641
Attracting	0.633
Factors influencing current employment	
Easier to commute	0.776
Job Experience	0.763
Compensation and benefits	0.681
Employee Turnover	
Loss of productivity	0.853
Disruption of social and communication	0.722
A challenging role	0.680
Loss of expertise	0.677
mentoring relationship	0.664
Coaching	0.651
Fostering good relation with supervisor	0.635
Loss of business opportunities	0.585

Table 4…continued	
Talent Development	
Creating Subjective measures	0.885
Creating Profile management	0.885
Creating profile of leadership jobs	0.609
Ability to learn new skills	0.568
Employment value proposition	0.559
Targeted development opportunities	0.518
Accountability for complex jobs	0.511

Table 5: Correlation

Correlations

Correlations

		org_effec	Talentmanagement by Competencies	Retaining Current Potential	Acquire new talent	Factors influencing current employment
org_effec	Pearson Correlation	1	.426*	.456**	.301	.684**
	Sig. (2-tailed)		.013	.008	.089	.000
	N	33	33	33	33	33
Talentmanagement by Competencies	Pearson Correlation	.426*	1	.481**	.337	.271
	Sig. (2-tailed)	.013		.005	.055	.128
	N	33	33	33	33	33
Retaining Current Potential	Pearson Correlation	.456**	.481**	1	.549**	.362*
	Sig. (2-tailed)	.008	.005		.001	.038
	N	33	33	33	33	33
Acquire new talent	Pearson Correlation	.301	.337	.549**	1	.367*
	Sig. (2-tailed)	.089	.055	.001		.036
	N	33	33	33	33	33
Factors influencing current employment	Pearson Correlation	.684**	.271	.362*	.367*	1
	Sig. (2-tailed)	.000	.128	.038	.036	
	N	33	33	33	33	33

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

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

Correlations

Correlations

		Challenges & Solutions of employee turnover	Talent development Strategies
Challenges & Solutions of employee turnover	Pearson Correlation	1	.376*
	Sig. (2-tailed)		.031
	N	33	33
Talent development Strategies	Pearson Correlation	.376*	1
	Sig. (2-tailed)	.031	
	N	33	33

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

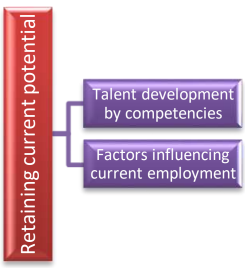


Figure 19: Outcome Female employees

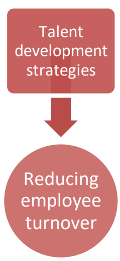


Figure 20: Outcome for Male employees

A. Correlation Result

- Organizational effectiveness is highly correlated to factors influencing current employment.
- Talent management by competencies is medium correlated with retaining current potential.
- Retaining current potential is correlated with acquiring new talent.
- Correlation between challenges and solutions of employee turnover and talent development strategies is low.

B. Regression Analysis:

1. Impact of acquiring new talent on organizational effectiveness (Female)

Null Hypotheses: There is no impact of acquiring new talent on organizational effectiveness.

Alternate Hypotheses: There is impact of acquiring new talent on organizational effectiveness.

R Squared Change: 0.090, Significant value: 0.089, p value>0.05. So we accept null hypotheses which say that there is no impact of acquiring new talent on organizational effectiveness. Durbin Watson Test: 1.984, Value lies between 1 and 3 so multi co linearity exist.

2. Influence of development by competencies on retaining current potential (Female)

Null Hypotheses: There is no influence of development by competencies on retaining current potential.

Alternate Hypotheses: There is influence of development by competencies on retaining current potential.

R Squared Change: 0.231, 23% influence of development by competencies on retaining current potential exists. Significant value: 0.005, Alternate hypothesis accepted. There is influence of development by competencies on retaining current potential. Durbin Watson Test: 2.02: Close to 3 interdependence between the development by competencies and retaining current potential exists.

3. Impact of factors influencing current employment on retaining current potential (Female)

Null Hypotheses: There is no impact of factors influencing current employment on retaining current potential.

Alternate Hypotheses: There is impact of factors influencing current employment on retaining current potential.

R Squared Change: 0.131, There is 13% impact of factors influencing current employment on retaining potential. Significant value: 0.038. There is impact of factors influencing current employment on retaining potential. Durbin Watson Test: 2.079 close to 3, strong interdependence among the factors.

4. Impact of talent development strategies on employee turnover (Male)

Null Hypotheses: There is no impact of talent development strategies on employee turnover.

Alternate hypotheses: There is impact of talent development strategies on employee turnover. R Squared Change: 0.141, There is 14% impact of talent development strategies on employee turnover. Significant value: 0.031,

There is 14% impact of talent development strategies on employee turnover. Durbin Watson test: 1.961, Medium interdependence between talent development strategies and employee turnover.

X. CONCLUSION

Talent management proves to be an essential business strategy that IT organizations hope will enable them to retain their topmost talented and skilled employees. In the research analysis it has been clear in order to retain female employees' talent development by competencies and factors influencing current employment plays very important role. In order to reduce male employees' turnover talent development strategies are required to be ameliorated.

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IMPORTANCE OF A SCALE UP METHOD OF AUTOMATION TECHNOLOGY FOR BLOOD COMPONENT SEPARATION IN BLOOD CENTRES FOR OPTIMISING BLOOD AVAILABILITY IN THE POST COVID SCENARIO IN INDIA – A REVIEW REPORT IN THE INDUSTRY PERSPECTIVE .

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ABSTRACT

Blood Collection traditionally in India has been below the requirements as tipulated by the WHO thus leaving a shortage of blood. This has been aggravated with the Covid 19 induced lock downs which has brought down collection of blood further . Thus the only option available to bridge the gap is to Optimise use of available units of blood collected . It is in this context that a scale up model was looked into as the objective of the study to encourage the Optimisation of blood units through component separation with minimum increase in costs incurred by the blood centres while trying to do this. The blood collections figures and the industry secondary data with regard to component separation devices available currently were looked at. The updated Drugs & Cosmetics Act which governs the Blood Transfusion in India was also considered as well as the current challenges to blood transfusion. The finding was that blood centres be given a model of ramping up their infrastructure for increasing blood component separation , taking into consideration the commercial burden that it brings along. This review article discusses the need for a scale up model for blood component separation to optimise the use of blood in Covid 19 times, combined with a win win aspect for the Industry which provides the devices and the blood centres who use them and ensures that the blood requirement is met in the country at all times.

Keywords--- *Transfusion, Blood Component Separation, Market Segmentation*

XI. INTRODUCTION

India collects around 11 Billion units of blood annually , which runs short of the minimum prescribed 1% donation called for by WHO for a nation to be self sufficient in its requirement of blood for its patients. Blood and blood products (Red Cells, Plasma, Platelets, Plasma Fractions from Plasma, Buffy Coat etc) are one of the most critical components of the healthcare delivery systems of a nation. The table 1 below highlights the health profile of India in reference to the blood collection, population, GDP and the total blood centres in the country . It shows that only1.7% of the GDP is spent on healthcare in the country , indicates the rising costs of treatment & as mentioned above shows the imbalance in blood donation vis a vis the total population.

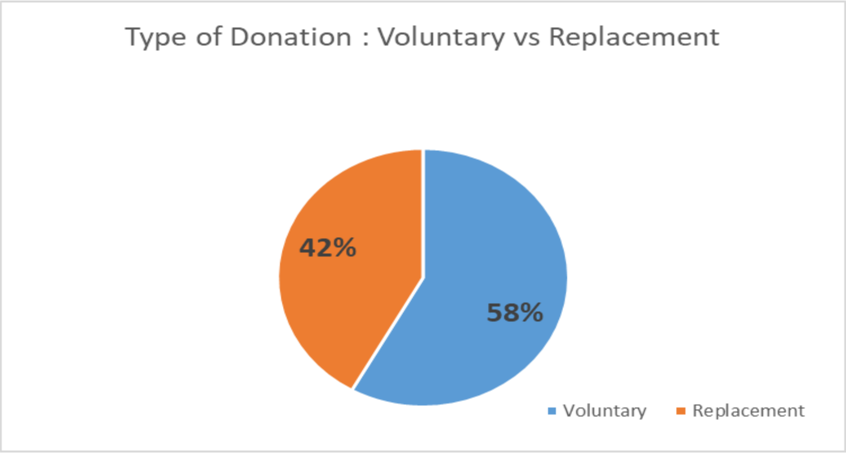
Table 1: Key Indicators

India Country Profile	Key Indicators
Population	1.33 billion
GDP Per Capita	US$ 2015
Healthcare Spending	1.7% of GDP
Total Blood Collection	11.00Mn
Number of Donors per 1000	10
Blood collection sites (number)	2903
Average Collection per blood centre	3789 units/annum

Source: National Health Profile and NACO.

Blood which cannot be manufactured artificially yet outside the human body, can only be made available by altruistic voluntary donation from one human being to another in licensed blood centres. The regulatory aspect regarding blood collection in the country is done by the Drugs Controller General of India under the Drugs & Cosmetics Act 1940 and related amendments till date. Accordingly Blood & blood products are classified as drugs in India and mandatory drug laws, quality control measures and testing of blood collected. Blood collection in India is from two category of donors – basically a). Vountary Donors and b). Replacement Donors (essentially kith and kin of patients who donate their or their friend's/associate's blood as a replacement for their patient).

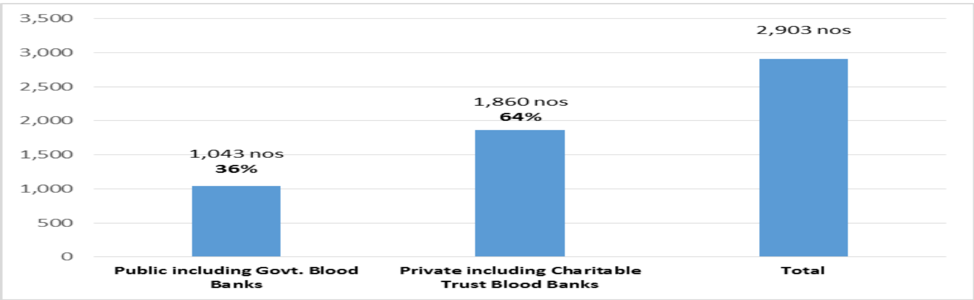
Figure 1: Type of Blood Donation



Source: National AIDS Control Society.

Figure 1 shows the percentage of voluntary and replacement donation blood collections done in the country with voluntary donation leading the way at 58% followed by a close 42% of replacement donation. Blood is collected across the country by licensed blood centres which number to around 2903 centres. These blood centres are licensed to collect blood and its components using specific processes and devices from willing donors, process, store and issue to the collected blood to patients. They do this following the strict quality guidelines laid down by the Drugs Controller General of India. These blood centres are categorised as public blood centres (run by the government) and as private or charitable centres (run by private entities or charitable institutions). Figure 2 shows the split of the categories of blood centers across the country. Cost of blood and components are regulated by the DCGI as well so that the public has access to units of blood at affordable costs. Separate pricing guidelines with cut off rates have been stipulated by the regulator for both blood centers in both segments. The government has also regulated the charges of tests that are done to ensure quality of the blood processed.

Figure 2: Categories of Blood centres



Source: National AIDS Control Society.

Table 2: Comparative Pricing Guidelines

Sl.No	Blood Component	Public /Govt Blood Banks (INR/Unit)	Private /charitable(INR /Unit)
1	Whole Blood	1050	1450
2.	Packed Red Cells	1050	1450
3.	Fresh Frozen Plasma	300	400
4.	Platelet Concentrate	300	400
5.	Cryoprecipitate	200	250

Source: Ministry of Health & Family Welfare, Dept of Aids Control

Table 2 shows us the comparative pricing guidelines that the different blood centers can charge for blood products to the patients as stipulated by the government of India. Specialied component specific charges as stipulated by the Government should added extra .(Eg. Leucoreduction of red cells& platelets; Phenotyping for extended serology,Irradiation , Bacterial Detectioin , Grouping & Cross Matching by semi automation & automation). The suppliers of raw materials to these blood transfusion centres from the Industry supply disposables needed for collection, storage and issue of blood as well as equipment related to the same. Prominent disposables would include Blood & Apheresis Collection Bags, Blood Testing Kits and Blood Transfusion sets for issue of blood to patients. Examples of equipment used for these purposes would be Collection Monitors, Plasma Expressors, Scales, Separation Devices, Deep Freezers for storing plasma , Refrigerators for storing Red Cell, Platelet Agitators for storing platelets etc. The industry also provides high end devices like Apheresis Equipment for collection of specific components of blood from the donor. These allow for providing specific clinical doses of the blood components to the patients from single donors. Terumo Blood & Cell Technologies Japan, Fresenius Kabi , Macopharma , Hindustan Latex , J Mitra are some of the leading industry players who ensure continuous supply of disposables and devices to the blood centres across the country.

Table 3: key industry players in the Indian Blood Transfusion scenario

Sl.No	Manufacturer	Estimated Collections	Estimated Market
1	Terumo Blood & Cell	3.93 Mn units	35%
2.	Hindustan Latex	3.64 Mn units	32%
3.	J Mitra Limited	1.89 Mn units	17%
4.	Fresenius	0.54 Mn units	5%
5.	Others (Macopharma, Span, BioLife	1.23Mn units	11%

Source: Internal Estimates

The industry keeps updating the devices and disposables for blood processing with due feedback form the end users and the regulator . Some of the rapid strides made in the recent years have been the Automation of the Blood Processing process ; Machines enabling collection of specific components of blood , Blood Bags integrated with filters for removal of leukocytes, devices for separation of blood components etc. The industry witnesses mergers and acquisitions in due course having the way for emergence of better technology and better ideas for enabling timely and quality units of blood to the needy patients.The Office of the Drugs Controller General of India which regulates the whole blood transfusion scenario in the country keeps updating the rules and regulations which ensures strict compliance to quality control during the process of collection, processing, storage and issue of blood. A New Medical Devices Bill and other amendments in the Drugs Act are additions from the regulator which ensures upkeep and upgrading of the

XII. Statement of the Problem

Covid -19 Pandemic since February 2020 and the resultant lockdowns in the country has pulled down the blood collection even more in the country. Estimates from National Blood Transfusion Council show that voluntary donation dropped almost 100% and replacement donations dropped by almost 50%. This has been the result of a). People staying indoors and the blood donation drives being curbed in times of the lockdown and b). Hospitals severely cutting down on the surgeries so that the blood demand has come down. But with 1.50Mn cancer patients in the country and with close to 0.40Mn Thalassaemic and Haemophiliac patients and with child births happening across the country, the demand for blood is still very high. The situation is further compounded by the fact that close to 45% of the blood collected in the county is still not separated into components and given to the patient as whole blood.

While it is evident that separating maximum units of blood into components would be ideal to the optimum use of the society, there are several constraints that stop the blood centres from fully converting collected blood to components. Key among the factors which hamper component separation are :

1. Lack of awareness among efficacy of component separation amongst the clinicians
2. Lack of infrastructure at government centres to do component separation
3. Cost aspects in upgrading the infrastructure from whole blood to a component separation unit.

parameters for blood in the country.

4. Lack of a plan to aid a scale up conversion model of all whole blood processing centres to component separation centres.

It is in this context that this review article aims to look at the current scenario and the possible options available to come out with a newer model which would benefit the Industry, the blood centre and the common man in terms of availability of blood, ease of processing and the requisite satisfaction of commercial aspects.

XIII. Literature Review

Mammen John Joy (2020) conducted a study on the topic, The Demand and Supply of Blood in India. The study looked at the aspect of demand and supply gap in blood requirement in India and the various factors influencing them. The finding was that a combined aspect of componentisation of blood collected combined with co ordinate logistics would be the key to a sustained system of blood availability in India. Ratouri M Kusum A (2020) conducted a study on the topic, The Blood Supply Management amidst the Covid 19 outbreak. The study assessed the blood collection in India in two scenarios of prior and during the outbreak and tried to see what are the impacts on blood inventory management. The assessment was that to get back to normal would take time and depend on the extent and time of this pandemic. Gupta Swati and Popli Harvinder (2018) did a study on the topic, Regulation of Blood and Blood Products in India, USA and the EU. This study looked at the regulatory frame work and aspects governing the GMP of blood processed in India vis a vis similar developing countries. The

Study assessed that there is a need for regulations or enforcement in many areas which could influence the availability of blood in India. Sharma Anu, Gupta Pankaj, Jha Rishabh (2020) in their study titled , Covid-19: Impact on supply chain and the lessons learnt analysed the impact of disruptions in supply chain post outbreak and input of lockdown in the country . They analysed that encouraging local manufacturing reducing dependence on imports in improving the demand supply gap and availability.

Priyadarsini (2020), Potential Challenges Faced by Blood Bank Services during Covid 19 Pandemic and their mitigative measures : The Indian Scenario, in this study looked at the 4 factors of blood shortage, safety aspects of healthcare professional , inventory management of consumables and others and the availability of convalescent plasma for fighting the Covid Pandemic and the mitigative steps to come out of this. Williamson (2013) in their study , Challenges in the management of blood supply, mentions the need to look at alternative methods of enhancing the blood requirement in developing countries, which is set to peek in the coming years .They mention that scaling up to meet the demands is not easy and would require adequate planning. According to Basu (2014) overview of Blood Components and their preparation talks about the different components and patient value added products that the blood can be separated into and the importance of maintaining a blood inventory in particular related to rare groups. Pastacos (1984), Blood Inventory Management – An Overview of Theory and Practice – talks about the interest raised by the Operations Research Profession in contributing to the inventory management of blood at blood centers. The contributions more than often cover the entire gamut of operations from Blood Collections to processing, storage and issue based on first in first out model. They also talk about the importance of continued research in this field as the medical technology advances in this field.

Arya Chand Rajesh, Wander GS, Pankaj Gupta (2011) , Blood Component Therapy: Which , When and How Much discusses the importance and essentiality of blood components in treatments owing to the Adverse effects that can otherwise arise and the cost implications of not following component therapy. It also discusses the in use methods of component therapy as well as the future advances that are in the offing. R Pieteresz (2015), Processing and Storage of Blood Components : Strategies to improve Patient Safety, Talks about the different versions of advanced blood compoeenents that can be prepared and the benefits that it brings to the patient when a clinician prescribes a specific component. They also talk about the importance of a robust safety system for the preparation of the components and criticality of tracing a unit of blood from collection to issue to usage by the patient, thus ensuring accountability at all stages.

Hess R John (2010), Conventional Blood Banking & Blood Component Storage Regulation: Opportunities for Improvement-discusses the different regulations in place for ensuring safety and efficacy of blood components .They discuss the aspect that if we know more about the different viruses and bacteria that effect the stored blood, then more regulations could be set in place for the safety of blood components prepared.

Talks about the critical importance of the component of blood – Plasma , taken from the blood of a recovered Covid 19 patient in the treatment of Covid 19 patients. Studies showed that the viral load came down significantly when the patients were given Convalescent plasma . This is a good straw in the treatment option of Covid 19 in the absence of a medicine.

Premkanth Puwanenthiren (2012) "Market Segmentation and Its Impact on Customer Satisfaction with Especial Reference to Commercial Bank of Ceylon PLC" – Talks about the impact of market segmentation in improving customer satisfaction. He did this in reference to the banking sector in Ceylon. Foedermayr (2008), Market Segmentation in Practice: Review of Empirical Studies, Methodological Assessment, and Agenda for Future Research – this study focussed on how a market segmentation was arrived at in three stages. First looking at empirical evidence of a firm's segmentation practices,comparing this with normal segmenting process to find out deviations or good methods and then finally charting a method for any furture segmentation process. Malcom (2017) says still the Bedrock of Commercial Success- looks at averting certain myths related to the marketing segmentation and to prove that market segmentation is still the ideal way to gain commercial success.

Goyat Sulekha, (2011), The basis of market segmentation: a critical review of literature- discussed the issues related to market segmentation, definition and the very basis for doing a market segmentation. It finally came up with answers for further road map for further research into Market Segmentation.

Wind Yoram (1978), Issues and Advances in Segmentation Research in his article talked about the recent advances and current methods of Segmentation and various aspects of data related to this – interpretation, analysis, implementation etc. It also covered Research Design Considerations and Problem Definitions.

Gichuru J Mwenda (2017) market segmentation as a strategy for customer satisfaction and retention talks about the barriers to market segmentation and the checks that are needed to be considered by segmenting the market. The research article reiterates the importance of segmentation as a tool for commercial success and also provides further insights to future research in this direction. Clerk Hojbjerg Ann (2001), Business to Business Market Segmentation – in their article talks about doing an indepth requirement of the customer in terms of his characterestics, furture, current needs and overall perception of relationship by the customer related to an industrial marketing scenario, characterised by relationships and networks. It stresses the importance of identifying, selecting and monitoring of market segments.

Atul B Hulwan (2019), Pattern of utilization of blood and blood components in a teaching hospital -looks at the requirement of components of blood for different clinical indications . This provides an insight into the inventory management and Optimisation of available units of blood. Sebastian H W Stanger(2012),Blood Inventory Management , Hospital Best Practice-talks about how more than complex algorithms and forumule, how experiencd and trained blood centre staff can ensure that the inventory is managed very well at all times at the blood centre.

XIV. CURRENT AND PROPOSED SYSTEM

Blood component separation is done in those blood centres which have component processing licence from the DCGI and have the requisite spacing and more importantly the right devices /equipment and people to prepare the components of requisite components of consistent quality. This would require a perfect coordination of man, equipment and the good manufacturing processes followed by the blood centre. Figure 3 illustrates the steps taken by the blood centre in the government sector in deciding to go for separation of blood components in its facility. A normal process would be to look at the

They talk about simple management coupled with electronic data logging to facilitate a smooth inventory management.

requirement for components from the clinicians or look for a go ahead from the government, educate the local clinicians on the requirement and then set up the blood component unit based on the fund availability and then the components prepared are determined by again the funds available for the disposables and the equipment. If funds are available higher end state of the art facilities are set up and then if it not, basic material is used, where often a compromise could be made on the vendor used. Purchases would be on a tender mode & never on the rental option given the given regulations.

Figure 3: Decision Pattern (Govt. run Blood centres)

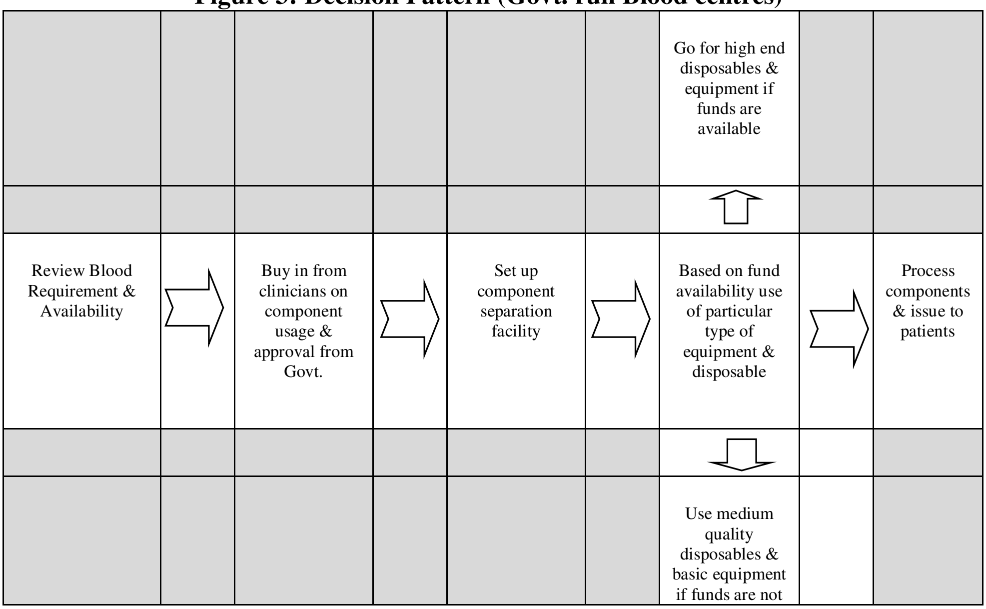
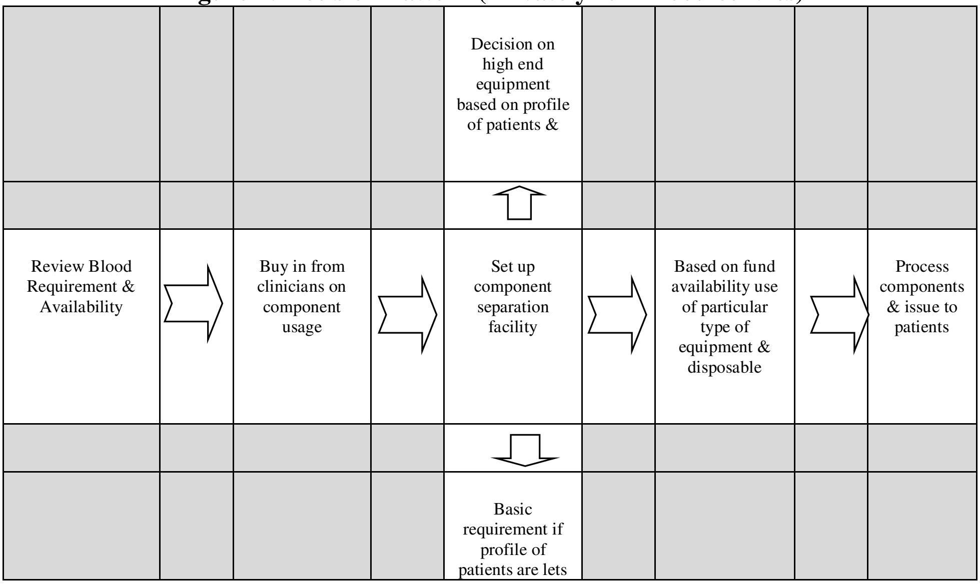


Figure 4: Decision Pattern (Privately run Blood centres)



Source: Internal Estimates

Figure 4 shows the decision making pattern of going for a component separation unit in a private based blood center, which follows pretty much the same pattern, but here they are also influenced by the patient profile they cater to in their hospital , their recovery rate aspects and ratings. Here the aspect is also that most of the patients who come to these centres have the capacity to pay and most often the cost of blood is included in the package of treatment. From an industry point of view, the rooting is for pushing through with componentisation of blood centres within the non governmental realm as the decision making is faster and makes sense more business sense . The profile of equipment suggested and supplied to these centres in the private sector would also vary from what goes into a government sector. This sector would see more of the high end equipment (given the patient paying power) for component processing and would be part of the component scale up strategy. In the Government Sector, the decision to scale up more than often comes from the Government and then the funds are allocated bear minimum to set up a facility. This deprives these centres many a times of early access to path breaking technology.

Table 3 indicates the devices equipments for component separation and their rating based on usage currently as perceived by customer along with mode of purchase. The cost of equipment hampers sometimes the decision making process in a scale up to componentisation as the blood centres are forced to stay within the price capping mentioned by the government for the blood and blood products after investing so much. This delays the upgrade to higher end disposables and resultant high quality , safer blood component products to the patients and ultimately a gap in blood products and optimum use of blood.

Table 4: Devices equipments for component separation

Sl.No	Equipment	Used for	Type of equipment	Categorization	Mode of selling
1.	Plasma Expressors	Expressing Plasma	Basic	Necessity	Outright purchase
2.	Platelet Agitator incubators	Storing platelets	Basic	Necessity	Outright purchase
3.	Deep Freezers	Storing Plasma	Basic	Necessity	Outright purchase
4.	Refrigerators	Storing Re d Cells	Basic	Necessity	Outright purchase
5.	Automatic Component Extractors	Expressing red cells, plasma & Platelets	High end	Necessity for standardisation	Lease/Rental wit h disposable

6.	Centrifuge	Critical in layering out the components by spinning	Basic	Necessity	Outright/Lease/Rental with disposable
7.	Apheresis Devices	Automated platforms for Red Cells, Plasma & Platelet collection from single donor	High End	Based on clinical indication	Rental mostly.
8.	Automated whole blood Separation Devices.	Total automation of component preparation.	High end	Wish List	None yet. Could be a rental only model.

Table 5: Suggested Model

Sl. No	Model (s)	Blood Collection /annum	Profile	Equipment Required for componentisation	Scale Up flow	Mode
1.	Blood Centre Segment 1	➢ 6000	Whole blood collection & processing	Basic Equipment	Satellite Centre. Does not scale up.	Outright
2.	Blood Centre Segment 2	<6000 >10000	Whole Blood +	Mandatory Equipment		Outright rental on disposables
3.	Blood Centre Segment 3	<10,000>15000	Blood Component Lab	Basic Equipment + Automatic Component Extractor +higher		Outright + rental on reagents & disposables
4.	Blood Centre Segment 4	<15000	Blood Component Lab	Basic Equipment + Whole Blood Automation& its disposables	Taper off Here as currently this system is the best.	Rental Disposables.

XV. SUGGESTIONS

Industry (especially the key players who are innovating with new technologies) players have a big role to play in ensuring optimisation of available blood resources so that the shortage of blood at time to the patient is minimised. While there is a limit to the controls on cost of a product manufactured without compromise on quality (especially in an area like blood transfusion) , what they can do is to formulate strategies which can help faster and universal adoption of equipment and disposables for component separation by the blood centres, which would in turn help them stay within the cost controls for end products mentioned by the government and also make optimum use of blood available to them. (Refer Table 5).

The suggestions base their frame work on segmenting the blood centres based on blood collected by them per annum . This allows realistically addressing and prioritising the component separation drive providing the right approach to the right segment. The model proposes four categories or segments – where the first segment which has the lowest collections (and who would basically be today doing only whole blood processing today – start moving into basic components (Red cells and plasma). This would require basic equipment. The focus here would be to vitalise the clinicians who use blood from these centres and make them aware of the benefits of blood collection. Once they are aware, they start to slowly switching from whole blood to component usage in a phased manner and then completely . The graduation to the next category can happen once the componentisation is complete. This helps the commercials as well by bringing down the investment on a stand alone centre doing components. These can be satellite centres who are attached to blood centres in the next two categories who have more blood collection and are better viable candidates commercially for switching over to componentisation. The next two segments have a higher collection per annum catering to a larger population which then makes them already a viable candidate for semi automation in componentisation. Hence the suggestion for basic equipment plus equipment helping them process blood semi automatically, which then helps introduction into standardization of consistent quality of blood produced. This would bring down the human intervention and reduce the requirement for manpower. These units who would then be doing partial mix of whole blood processing and components, could fully be shifted to component production.

The last and the fourth category which has the highest collections per annum would be the ideal candidates to move into complete automation to process blood. They would then use higher end devices to process blood components based on their clinician requirement and patient profiles. They would switch to apheresis procedures for plasma and platelets and use basic equipment to process red cells and plasma. They would split their donor pool to this concept and manage inventory. If there are sufficient collections to justify the cost of very high end whole blood processing devices, then they would then do that in them there by switching to complete automation.

XVI. Conclusion

The study has been conducted with an objective to suggest ways to look at addressing the demand of blood to the patients by making use of blood available by encouraging componentisation. The study aims to look at whether there is a change required in the approach to get this done by the industry who would primarily drive this with the blood centres. This study is exploratory or descriptive since it aims at looking at reviewing available literature and data concerning the topic.

A scale up model based on segmentation where the blood centres graduate from one scale to another based on their changing profiles would be ideal in faster switch over from whole blood usage to component usage in the country. This would allow more patients to have access to blood resources by having one unit of blood collected being used by more patients, better recovery time for patients as specific requisite components being given increases recovery rate and reduces chances of transfusion reactions and last but not the least improves the consistent quality of blood processes at blood centres by reducing human intervention through semi automation and full automation.

- Allows time for developing awareness amongst clinicians on componentisation of blood collected.
- Encourages blood centres to go in for componentisation regardless of the constraints of investment required as they look at only their profile of equipment.
- Enables embrace of technology faster at blood centres thereby help standardise the quality of components prepared.
- Enables use of better processes for processing blood increasing quality of components prepared and transferred to patients.

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A STUDY ON ENERGY DRINK CONSUMPTION PATTERNS AMONG STUDENT-ATHLETES

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ABSTRACT

There are a large number of student-athletes in the Trivandrum district of Kerala, India. Among them, the consumption of energy drinks increased. The main objective of the study is to classify student-athletes' energy drink consumption habits, the prevalence and frequency of energy drink intake, and the reasons why athletes consume energy drinks. This research would be useful for advisors and sports managers who should be aware of their rivals' energy drink usage habits and ready to provide details on the well-being effects of caffeinated drinks over the top admissions and also correct misinterpretations concerning the implied benefits of caffeinated beverages.

Keywords---*Energy drink Consumption, Student Athletes, Sports Discipline groups, Training hours*

I. INTRODUCTION

The consumption of energy drinks, particularly among teenagers and young adults, has increased dramatically in the last two decades. If these goods offer a jolt of energy to enhance physical and psychological execution, energy drinks are aggressively retailed. Energy drinks belong to a category of products usually containing caffeine in liquid form, with or without any other dietary supplements. In 1949, the first energy drink in the U.S. appeared and was advertised as 'Dr. 'Enuf'. The annual consumption of energy drinks in about 160 countries surpassed 5.8 billion litres in 2013. Manufacturers have concentrated more on athletes lately (Humayun et al., 2017).

Energy drinks contain a high concentration of stimulants, high levels of caffeine, taurine, guarana, and others. Along with mental alertness, it also improves physical efficiency. Energy drinks may or may not be carbonated (Clauson et al., 2008). Red Bull, Blast, Beast, Sting, Mountain Dew, Gatorade, and Enerzal are the types of energy drinks available in the Trivandrum district. The global demand for energy drinks was estimated at $53.01 billion in 2018 and is expected to rise to $86.01 billion by 2026 at a CAGR (Compound Annual Growth Rate) of 7.20%. Energy drinks vary from sports drinks which, during or after physical activity, are used to replace electrolytes and water. Besides, they are distinct from brewed tea and coffee, containing smaller ingredients, and maybe decaffeinated.

Energy drink manufacturers say that their goods increase energy levels. One of the main reasons for the increasing popularity of energy drinks is that, along with mental and physical stimulation, they offer instant energy. If not consumed safely or as directed, energy drinks often incur potential side effects. There is no safe amount of an energy drink for specific individuals, particularly children. As consumption has increased among children and adolescents, the safety of energy drinks is becoming a significant problem. Some jurisdictions have even prohibited the sale of energy drinks to minors or those under 16 years of age. The intake of an energy drink with 3mg of caffeine increased the prevalence of side effects. At present, serious questions about the safety of these items have been raised. Different studies have been published indicating adverse health effects associated with energy drinks. Nonetheless, energy drink manufacturers say that these goods are ideal for customers and that they are safe. Scientists appear to question the adverse health effects associated with energy drinks.

II. Literature review

Energy Drinks (EDs) containing caffeine are deeply spent, particularly among youthful adults. The purpose of this study was to analyse the data and useful impacts of shoppers of energy drinks, to investigate their usage models and to assess the troublesome effects encountered in Saudi Arabia by different ED buyer bunches dwelling in other EDs. They guided the analysis by haphazardly collecting data from a chosen Saudi population and were led using a pre-tried 43-thing survey from January 15, 2015, to April 15, 2015. They found that consumers attributed the success of energy drinks to large advertising media (46%) and their calming and refreshing effects (37%). In daily consumers, lower awareness scores were reported less than four times monthly, and higher adverse incidents were encountered by everyday consumers less than four times monthly. They concluded that the use of excessive EDs is correlated with an increased risk of many adverse effects being experienced (Subaiea1 et al., 2019).

The study aimed to determine the use of energy drinks among college students, the frequency of use of energy drinks in six circumstances, namely for inadequate sleep, to increase energy while studying, driving for long periods, consuming alcohol during parties, and the prevalence of adverse side effects and use of energy drinks during parties. Nineteen item surveys were used to measure the consumption of energy drinks by 496 randomly surveyed students attending a state university in the Central Atlantic region of the United States. They received responses from a 32 member student focus group and a field test. They notice that in a typical month for their current semester, 51% of participants have been reported to consume more than one energy drink per month. For inadequate sleep, the majority of consumers eat energy drinks-about 67%, to raise energy (65%), and to drink alcohol while partying-about 54%. While consuming three or more was everyday use to drink alcohol throughout drinking, the majority of users use one energy drink to treat most conditions, around 49%. They concluded that users consumed one energy drink with a recorded frequency of 1-4 days per month in most of the circumstances examined; many users consumed three or more when combined with alcohol while partying (Malinauskas et al., 2007).

In a total of 36 volunteers, the effects of Red Bull Energy Drinks, which contains taurine, glucuronolactone and caffeine among the ingredients, were studied over three trials. Reaction time, attention and memory, subjective alertness and physical endurance were included in the tests. Red Bull Energy Drink dramatically increased aerobic endurance as compared with other drinks-maintaining maximum heart rate and anaerobic efficiency of 65-75% maintaining max. Speed on the Ergometer Period. Substantial mental performance gains included response time, attention and memory of preference, indicating increased subjective alertness. These consistent and wide-ranging improvements in performance are interpreted as reflecting the effects of the combination of ingredients (Alford et al., 2001).

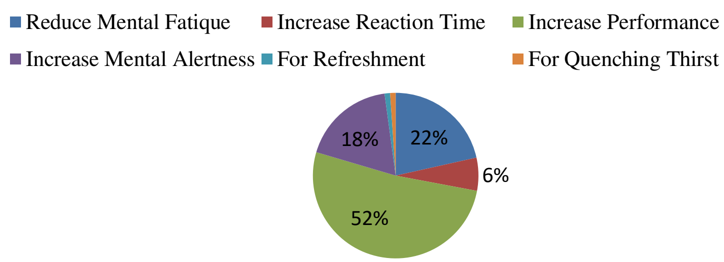
No study has been undertaken to evaluate the understanding and compliance with ED intake recommendations shown on product packaging in Australia, amid concerns about side effects of energy drink (ED) consumption. Via an online poll, they gathered a selection of 1922 individuals. According to Australian guidelines, participants confirmed their awareness of the overall recommended daily energy drink intake. 19, 23 and 38% of non-consumers, lifetime, and last year consumers, respectively, reported guideline awareness. Accurate estimators recorded higher energy drink consumption among last year's customers and were more likely to exceed consumption guidelines and consume alcohol combined with ED (AmED). Guideline comprehension projected an increased risk of exceeding guidelines in ED sessions after adjusting for demographics and frequency of usage. Still, it was not correlated with exceeding ED guidelines in AmED sessions. They concluded that, globally, Australia is considered to have the most stringent regulatory approach to EDs. Advisory statements, however, are not correlated with greater understanding and compliance with recommendations for intake. It is essential to resolve the inability to comply with requirements for appropriate product labelling and the lack of broader instruction training (Peacock et al., 2015).

Energy drinks are commonly consumed by competitors with a thinking process to improve their appearance. The purpose of the evaluation was to survey the regularity of the use of energy drinks among football players from Maharashtra's Aurangabad territory. The study analysed prototypes for the benefit of energy drinks, types of caffeinated beverages usually expended, recurrence of use and thought processes of competitors behind the consumption of energy drinks. They took a sample population of 150 football players to perform the analysis. They completed an outline that was tracked during a football match, including Aurangabad's distinctive football clubs. Insights about the use of energy drinks have accumulated and broken down. They found that about 30% of football players who drank at any rate one serving of energy drink in a week and approximately 37.77% of respondents spent energy drinks reported that after practice or a game, caffeinated drinks helped them regain stamina. They concluded that there was a shallow level of awareness among football players of the content, advantages and acceptable methods of using energy drinks, and there was a need for initiatives and educational programmes to inform football players about the reason for drinking energy drinks (Badaam and Masroor, 2013).

III. METHODOLOGY

The descriptive research design is used to classify attributes, frequencies, categories using a survey approach, through a pre-drafted questionnaire that mainly focuses on energy drink consumption from Trivandrum district of Kerala. The population of college students in Trivandrum is higher than 5,000. Among this, around 1000 were actively participating in athletes. Applying the principles of simple random sampling, a sample size of 100 student-athletes is selected from different colleges located in the district of Trivandrum. Data collected is kept confidential and used only for analysis purposes. The questionnaire is used for collecting tangible information for understanding the energy drink consumption among student-athletes. The questionnaire contains an open-ended question and closed-ended questions with different scales.

Figure 1: Reason for the consumption of energy drinks



Source: Primary Data

I.V. ANALYSIS

From primary data, For all sports discipline groups, the main reason for consumption is to increase performance and also the sports discipline groups have a relation with the brand of energy drinks. The analysis is done for the data that has been collected through the questionnaire. For research, chi-square test, ANOVA test and correlation test are used.

Table 1: Chi-Square Test Results

Test No	Relationship	P-value	Result
1	Gender Number of cans consumed	0.392417503	No significant association
2	Sports discipline groups Number of cans consumed	0.131274673	No significant association
3	Sports discipline groups Consumption of energy drinks	0.650701217	No significant association
4	Training hours per day Number of cans consumed	0.00000309	There is a significant association
5	Consumption of energy drinks Training hours per day	0.452212882	No significant association

Source: Primary Data

Table 2: Correlation Test Results

Test No	Relationship	Correlation Coefficient
1	Age groups Consumption of energy drinks	-0.60599
2	Gender Consumption of energy drinks	-1
3	Training hours per day Consumption of energy drinks	-0.91954

Source: Primary Data

Training hours per day have a significant association with the consumption of energy drinks, influencing the number of cans consumed and can be because of the different physical exercise, strain stress etc. The reason for the consumption of energy drinks depends upon sports discipline as various sports discipline indulges multiple kinds of practices in strengthening different parts of the body. The frequency of consumption of energy drinks is dependent on the type of brand of energy drinks because each energy drink has its energy-producing agent and the ability of energy-producing agents has the desired effect and may depend upon the brands of energy drinks. The type of exercise taken for each sports discipline is different. So every kind of activity taken for each sports group consumes energy drinks for another reason, even the training hours are different (Refer Table 1). The correlation coefficient of all the three correlation tests is negative, showing an inverse relationship between the variables and is non-linearly related (Refer Table 2).

V. FINDINGS

From the data collected, about 90% of student-athletes consume energy drinks. The age group doesn't have any effect on the consumption of energy drinks. From 90%, the majority (83%) of student-athletes consume 1 – 2 cans per day. Significant brands of energy drinks consumed by student-athletes are Red bull, around 42%, Mountain Dew approximately 30% and Monster around 17%. The student engaged in team events such as cricket, football, tennis etc., consumes energy drinks more about 47% rather than the short distance (25%) and both track and field events (15%). Significant reasons for consumption of energy drinks and the corresponding percentage of responses are, for increasing performance - 52%, reducing mental alertness – 22%, increasing mental alertness - 18%, and increasing reaction time - 6%. From the analysis, find out that the consumption of energy drinks had a relationship with training hours. Student-athletes consume more cans as training hours increase due to the reasons mentioned above.

For all sports discipline groups, the main reason for consumption is to increase performance and also the sports discipline groups have a relation with the brand of energy drinks. The student-athletes belonging to the different sports discipline categories with the number of cans of energy drinks consumed per day is statistically significant. Both males and females student-athletes' consumption of energy drinks is the same.

From this study, It is clear students-athletes engaged in team events (cricket, football, tennis, etc.) consume more energy drinks rather than other sports disciplines. From this study, the energy drink producing company can devise two strategies. The first strategy is to focus more on student-athletes engaged in team events. The second strategy is to focus on team events as well as the short distance (less than 400m). Criteria for selecting the strategists should be based on existing student-athletes reach and popularity towards the brand. The primary reason for the consumption of energy drinks is for increasing performance so that the energy drink producing company can devise a marketing strategy based on this reason.

It will increase the popularity of energy drink brands.

VI. CONCLUSION

Consumption of energy is a widespread practice among student-athletes in Trivandrum, Kerala. Every student-athletes consume at least one can of energy drink per day. Most of the student-athletes take energy drinks for increasing their performance. Students engaged in team events consume more energy drinks rather than other sports disciplines. The reason for the consumption of energy is different for different sports due to various kinds is exercises which strengthen different parts of the body. Student-athletes also focus more on the brand of energy drinks because the energy providing agents in the energy drinks are different for various brands of energy drinks. Some of the athletes have the wrong perception about drinking energy drinks for reducing mental alertness and so on. This is mainly due to the lack of knowledge about the advantages and disadvantages of energy drinks. From this understand that health awareness programs must be given to the student-athletes.

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REVIEW OF LITERATURE ON ORGANIZATION COMMITMENT: A LOOK BACK FROM "1916 TO 2019"

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ABSTRACT

Effective utilization of resources is very important for the success of any organization. Committed employees are treated as the most important asset and key to the success of all business concern. Increase in the rate of attrition of employee is one among the critical issue faced by various business concerns. Various studies explained that organizational commitment has close impact with several positive organizational and employee outcomes. Research work explains issues like low morale increasing financial pressures, and various other challenges adversely impact on the workforce's organizational commitment and performance. Yet a grounded exploration about the conceptual and empirical literatures on organizational commitment is set as the major objective of current paper. With this focus to understand the relevance of commitment the paper incorporates review of literature over the last five decades. This helped to elucidate the evolution of the concept and also investigate various dimensions associated with the concept of Organization Commitment. Particular attention is paid to the three-dimension model of Allen and Meyer which has being widely accepted as the most prominent study in the field of commitment. Research agenda for future research is set with gap analysis of need of more studies into the negative impacts of OC which will act as guide lines for other research scholars

Keywords--- *Organizational Commitment (OC), Affective Commitment(AC), Normative Commitment(NC), Continuance Commitment(CC), Exchange Theory, Side-bet Theory of employee commitment.*

XVII. INTRODUCTION

Projections made by world renowned consultants and the International Monetary Fund (IMF) (Biswas. A 2017), regardless of some socio- economic constraints India is considered to be one of the fastest growing economy among the world and suggested that it could became the first world power by 2050 (United Trade Agency : UNCTAD, 2019). One of the key growth factor is rapidly accelerating working age population (ICCR India). Taking this into account and as the fastest growing economy with high working age population several multinational companies (MNCs) or transnational companies initiated their business in Indian market which created new opportunities for world's youth. Scholars in human resource management started focusing more on wellness and motivation of workforce ,hence every organization considers employees are their most valuable asset (Miller et al 2001).Forbes Women recent study reports that "Happy employees equal happy customers"(Prossack,A.2019). Committed employees, in any organization have a significant role in the long-term success of the organization (Sila E, et.al 2018). They contribute to its overall organizational effectiveness and performance (Sila E, et.al 2018). Committed employees contributes towards attaining competitive advantage, so motivating them becomes crucial to individual performance and improving organizational productivity. Various researcher concluded that there exists a positive correlation between employee commitment and organizational performance

Elementary work on the research of this paper particularly focused on identifying the conceptual background for the origin of the concept on organizational commitment, factors that takes the forms of antecedents and precedents which positively and negatively impacts the commitment of employees in the organization. Secondary objective is imparted as understanding the most prominent and widely accepted studies in the field of commitment. Preliminary study and basic literature review imparted the idea that from among various organizational factors job satisfaction, stress level, leadership styles, organizational culture and climate, performance appraisal systems, organizational citizenship behaviour have strong relationship between employee commitment of the organization. Work commitment is an extremely important topic for organizations to understand. Thus it is consequential to understand when and how commitments develop and how they shape attitude and behaviour and organizations will be in a better position with improved competitive advantage (Meyer & Allen, 1997).

Before tracing out the real history of commitment, it is desirable to understand the fact that there are almost 2000 entries pertaining to the research in the area of OC (Al-Shurafat .F.M & Halim A.B ,2018) . The relative level of employee commitment is connected with several factors such as job satisfaction, variations in the hierarchical levels, job performance and turnover (U.K Essays,2020). Extensive works are their in analysing the dimensionality or typology of commitment. It is to be noted that from among all the frame work developed, an exemplary work is the three dimensional framework formed by Meyer & Allen's . This was developed further as the 'Workplace model of Meyer and Herscovitch in 2001. This formed as a base to several other conceptualisations presented in extant research. It is indeed a tough work to get a complete understanding and we may not be able to do real justice to the entire body of work. But this research work will cover a brief history by touching upon the significant works which now exists in the field of OC.

XVIII. RESEARCH DESIGN AND METHODOLOGY

Descriptive research design is used for this study as this paper undergoes with an extensive review and provides with an integrated description about the conceptual framework on organizational commitment. Secondary data has taken from various journals, write-ups, publication and from various online sources, etc. Thirty-five articles have been specifically taken for the literature review. Hence the existing research work makes an in-depth analysis into various pre-existing research works on OC which supports to throw light into the specifications on the concept of OC. The purpose of this study was to identify the conceptual background for the origin of the concept of OC and its major antecedents and precedents which positively and negatively impact organizational outcomes. This study also aims to understand the most prominent and widely accepted study in the field of OC.

Conceptual clarity from the current research paper will guide the scholars to develop theoretical frame work for future research. The major limitation are the fact about the existence of more than 2000 entries in the area of OC made the identification of delivery of best articles a tough process and the study completely depends on the data form secondary source.

XIX. ORGANIZATION COMMITMENT

From 1916 the construct has been discussed roughly in literature. ‘Organizational Commitment’ traces its roots from the concepts introduced by Max Weber and Fayol in the 1940s. Weber wrote about ‘zweckrational action’, or rational action in relation to goals, and ‘zwertrational’, or rational action in relation to values.

Whyte's (1956) book led to deeper examinations of the concept of "commitment" and "loyalty" within corporations. Whyte described about the ‘organization man’ as a person who not only worked for organization but basically belonged to it. An explanation about commitment was found in Whyte’s (1956) book where loyalty was being explained as one of the factors which is exhibited by individuals to their organization as an important variable. The book published by Whyte “The Organization Man” described the danger of over commitment. Here individuals own personal goals were considered secondary to the demands of the organization in his book. Since that period the basic assumption was that, high level commitment is always good for organization. After the explanation given by Whyte, the concept of OC was studied extensively.

Employees are said to be committed to the organization when their goals are in congruent with the goals of organization. OC has been proved to be the antecedent of various employee attitude and behaviour. Research suggest that employees with higher level of commitment tend to get more in case of role and extra role and lower level of turn-over. OC is believed to predict some organizational outcomes like attitude, behaviour, turnover, absenteeism, job satisfaction etc. These are the entry reviews from 1960 for the conceptual clarity about OC.

Researchers have been seriously involved in the study about OC from 1960 to know about antecedents and its outcomes due to the reason that OC plays a major role in organizational effectiveness. Various studies included three main approaches in measuring OC: a) Calculative approach, b) Multidimensional approach and c) Attitudinal approach.

Side-Bet theory by Becker is identified as the base for conceptualization of OC. This initial level notion about OC stems from the sociological perspective. Becker (1960) introduced the “exchanged-based definition” or "side-bet" theory of organizational commitment. The theory

declares that individuals, regardless of the stressful conditions(what they undergo), are committed to the organization as far as they hold their positions; however, if they are given an alternative benefit or side bet, they may be willing to leave the organization.

OC gained substantial empirical focus in the 1970s.Porter et al. (1974) described organisational commitment as “an attachment to the organisation, characterised by three aspects where by (1) an intention to remain in it; (2)an identification with the values and goals of the organisation;(3) and a willingness to exert extra effort on its behalf" . These three aspects are considered as constitutes for "Affective Commitment". Employees who have a high degree of emotional commitment will feel integrated into the organization and identify themselves with it (Mowday, Steers & Porter, 1982). The publication of a book by Porter, Mowday and Steers (1982) acted as a mile stone in the area of study on OC. The analysis result in the book which talked about high levels of turnover and waning loyalty amongst North American employees (see Mowday et al, 1982) which gain momentum during that time period.

O'Reilly (1986) describes organizational commitment as, "an individual's psychological bond to the organisation, including a sense of job involvement, loyalty and belief in the values of the organisation". Several articles discussed about the positive and negative effect of commitment from the employee and organization point of view. Some of them concluded by explaining that high level of commitment will leads to effect the organization and employee negatively.

Meyer, Allen, and Smith (1993) declared that their exists three types of commitment, normative, continuance and emotional commitments, which explains the different psychological state, by determining the employees' relationship with the organizations and whether the employees will stay with the organizations (Kanning U.P 2018).

XX. ANTECEDENTS AND PRECEDENTS

Meta-analyses on commitment designate that this concept is sensitive to various demographic factors. Age, gender, tenure, educational qualification are accepted to be the major antecedents of OC by several researchers (Meyer & Allen:1990, Mathieu & Zajac:1990, Dunham,et.al: 1994).OC is negatively related to turnover (Cooper-Hakim & Viswesvaran, 2005), absenteeism (Farrell & Stamm, 1988), and positively related to job satisfaction, (Cooper-Hakim & Viswesvaran, 2005), productivity (Meyer, Paunonen, Gellatly, Goffin, & Jackson, 1989) , motivation (Mathieu & Zajac, 1990), and organizational citizenship behaviors (Riketta, 2002). Low commitment has also been associated with low levels of morale (DeCottis & Summers, 1987).It is proved that non-committed employees may describe the organization in negative terms to outsiders thereby inhibiting the organization's ability to recruit high-quality employees (Mowday, Porter, & Steers, 1982). These findings have important implications for both organization theory and the practice of management. It is also specified in some studies that more committed employees experience high stress, work family conflict, lower life satisfaction (Meyer et al., 2010). Recent trends in organization divulge the need and importance of developing OCB and its relation with organizational commitment (García-Cabrera & García-Soto, 2011). Research work explained that the growth of organization depends on performance of the employees who act beyond their duties and roles; these efforts that are beyond roles and expectations of organization and management literature, this is being called as OCB . Workplace with good wellness initiatives leads to satisfied and highly committed employees, good organizational climate, high morale and a good organizational culture. Various studies has been there about organizational culture and organizational commitment, such Al-Shurafat .F.M,2018, Bharucha M.A. J (2016). Furthermore the studies revealed assumptions that an institution can maintain highly committed and motivated employees through fostering a strong culture, which support employees' affective and continuance commitment to the organization (Al-Shurafat .F.M & Halim A.B ,2018).

V. OC- DIFFERENT APPROACHES

Calculative Approach or Behavioural Approach rooted from the "side bet theory" of Howard Beckor (1960). Beckor introduced the concept of Side bet theory in 1960 which refers to the secondary investments made by the employees which could be lost or remain worthless if he or she leaves the organization. Beckor stated that over a period of time, employee's side bets various factors like status, relationship, promotional opportunity, pension fund, seniority etc which tie them into the particular organization. Scales for measuring the concept has also been developed by Ritzer and Trice in (1969)which includes various questions like job freedom, status, promotion opportunities, friendship etc. Some methodological modifictions were being added later by Hrebiniak & Alutto in (1972).Beckor approach showed a close connection between commitment and turnover. Various studies supported this by stating commitment as one of the major reason which can cause a person not to leave the organization. Side bet approach is evident in a study by Meyer and Allen's(1990) scale as "continuance commitment". Calculative Approach is also called as Behavioural Approach hence it talks about the way people get locked in the organization and how they deal (behave) with this issue.

The second approach that is Attitudinal Approach which is often called as Organizational Behaviour (Staw 1977) or Psychology Approach explained commitment as attitudinal. The commitment under this approach has been termed as Affective or Value Commitment. The origin of this commitment have subjected to some meta analyses. But criticism have raised that Porter et al (1974) measure OCQ. Commitment under this approach has three dimensions (1) Desire to maintain the membership in the organization (2) belief in and acceptance of the values and goals of the organization (3) Willingness to exert more effort for the organization. This approach gave rise to most important scale of OC which is named as OCQ (Organizational Commitment Questionnaire). This OCQ dominated most of the research from 1970 to 1980's.

Multi-Dimensional Approach: The two types of prominent multi-dimensional approach was discussed from 1980's. One was by Meyer and Allen (1984) and the second was by O'Reilly & Chatman(1986).O'Reilly & Chatman(1986) defined commitment as a psychological attachment felt by the employee to the organization. This will reflect to the degree to which how employee adopts the characteristics or features of the organization. By arguing OC can be better understood by a multidimensional concept John P Meyer and Natalie Jean Allen in (1984) developed a new scale which is popularly used now days. They initially proposed (1984) to make a differentiation between two components that the first one termed as Affective commitment and the second one as Continuance Commitment. Affective commitment denoting an emotional attachment to, identification with, and involvement in the organization and continuance commitment denoting the perceived costs associated with leaving the organization . Here Conceptually they developed two dimensions in the initial stage by making use of calculative approach (Continuance) and attitudinal approach (affective).

According to O'Reilly & Chatman (1986) one's psychological attachment can be determined using three independent factors (a) instrumental involvement for specific extrinsic reward (b) involvement based on desire or affiliation (3) involvement based on congruence between individual and organizational goals.

Two sub scales for continuance commitment was being identified by McGee & Ford (1987). Confirmatory factor analysis was conducted by Hackett, Bycio & Hausdorf (1994) to know the difference between Meyer & Allen's (1991) three-component model and a four-component model of McGee & Ford . The study proved that no significant difference is their between the three component model and the four-component model (Hackett, Bycio & Hausdorf ,1994).

Later Allen and Meyer (1990) suggested a third distinguishable component of commitment. New dimension was called by scholars as normative commitment which is explained as the perceived obligation to remain in the organization.

The studies by Meyer and Allen presents a summary of the links between the three components of commitment and variables considered to be their antecedents, correlates, and consequences (Meyer & Allen, 1990,1991, 1997). Meyer and Allen (1997) were aware of the difficulties associated with the three-dimensional scales. Over the years, changes were proposed and tested. Major revisions in the continuance commitment scale were advanced . These changes made improvement in the psychometric properties of the scales.

Zangaro.G(2001) suggests an additional type of commitment and termed it as "Alienative commitment". It is considered to be the negative form of commitment which may also exist in organizations. This occurs when individuals feel they have little or no control over the result or impact, and would not like to leave their jobs. These employees usually demonstrate low levels of performance. A person refuses to change to a job with a higher salary because the new job is higher risk in terms of potential failure and the person has made a side-bet of buying a new house based on the assumption of a continued and stable income.

The multi-dimensional measurement of Meyer and Allen is now mostly adopted by major studies in OC even after the existence of various criticism (Cohen A 2014).

VI. THE THREE DIMENSIONAL FRAMEWORK

Meyer and Allen's (1991) proposed three-component model of commitment. Initially the scholars stated about two components (1984) ie Affective and Continuance and later the third (1990) one Normative Commitment. Meyer and Allen (1991) created this model for two main reasons: first " to give a conceptual clarity for the existing research interpretations" and next "to propose a framework which supports for the future research". Their study was based mainly around previous studies of organizational commitment. According to Meyer and Allen's research there are three "psychological aspects" which creates an employee's commitment to the organization. The model developed by Meyer & Allen (1991) integrated the approaches by Becker (1960), Porter et al. (1974) and Mowday, Steers & Porter (1979) by including three components; affective commitment, continuance commitment, and normative commitment.

Meyer J.P & Stanley D.J et.al (2002)have done a meta-analyses to analyse two main objectives as (a) to find out the relationship between three components of commitment (affective, continuance, and normative commitment)and (b) to know the relations between the three component model of commitment and its variables which is identified as their antecedents, correlates, and consequences (Meyer and Allen's 1991) . The major findings of this study were, that the three components is correlated but at the same time distinguishable to each other. Also, as previously identified in various studies, all three forms of commitment related negatively to withdrawal cognition, absenteeism and turnover behaviour of employees. When compared with the outcomes variables of OC, affective commitment has the strongest and most favourable correlations with organization-relevant (attendance, performance, and organizational citizenship behaviour) and employee-relevant (stress and work–family conflict) outcomes. Normative commitment also showed an association with desirable outcomes, but not a strong association. But at the same time continuance commitment was unrelated, or related negatively, to these outcomes. This meta analyses drawn light into the areas as a real investigation and comparison of real correlation among the variables identified in Three component model of OC by Meyer & Allen in (1990,1991& 1997).

Recently, Wang (2004) have proposed a five components model of commitment. With the purpose of checking the validity of five component scale a study was being conducted by Wong A (2014) in Hong Kong. Data was collected from ICT professionals. The result explained that Wang's Model was effective in studying OC among employees of Hong Kong. It would be better that Wang's model is useful for researchers to apply in a Western context and examine its validity (Wong A 2014). All this studies give a clear evidence that construct of commitment has been receiving wide attention in organizational psychological research for many years .

Another model (Keiningham 2015) has been developed in the context of product and service consumption. This model proposes habitual and forced commitment as two additional dimensions which are considered important in consumption settings. It seems, however, that habitual commitment or inertial may also become relevant in many job settings. People get habituated to a job—the routine, the processes, the cognitive schemas associated with a job can make people develop a latent commitment to the job—just as it may occur in a consumption setting. As it deals with service and product consumption it is not considered for the current review.

Cooper-Hakim & Viswesvarin(2005) concluded by explaining that various forms of OC studied by various researchers share a commmon psychological construct with an exception in continuance commitment.

V11. THE TWO SCHOOLS

Literature has provided sufficient evidence on the two main schools of commitment ie (1) Attitudinal School & (2) Behavioral School. Attitudinal Commitment talks about the way an employee think about and its emotional attachment towards the organization. They consider the way how their goals and values are similar with the goals and values of their organization. Behavioural Commitment on the other hand explains the way by which employee get stuck inside the organization. It also makes a clear explanation on how they get rid out of this problem. Attitudinal school tries to study the antecedents that contribute to the development of OC whereas behavioural school focus on the identification of outcome or consequences of OC in organization(Buchanan 1974, Steers 1977).

In 1991, Meyer and Allen recommended that employee commitment be studied from both the attitudinal and behavioural perspectives. In attitudinal commitment, research focuses on identifying the antecedents and behavioural consequences of it. Here it identifies the event that contributes towards the development of OC (Meyer & Allen 1991). For behavioural commitment, research is more focused on under which conditions a once exhibited behaviour is repeated and how this behaviour affects attitude change (Mowday et al., 1982).

VIII. AFFECTIVE AND CONTINUANCE COMMITMENT

From various reviews about organizational commitment models, it is clear that affective commitment has more significant effect on organizational commitment than the other components. Affective commitment is explained as emotional attachment of the employees towards the organization . Reports states that employees who show a high degree of emotional commitment feel integrated into the organization and identify themselves with it (Mowday, Steers & Porter, 1979; Meyer, Meyer, Stanley, Herscovitch & Topolnytsky, 2002; van Dick, 2013).But it is important to note that continuance commitment should also be considered as an indivisible component (Mathieu &Zajac, 1990; Jaros, 1997).A meta analysis carried out by Meyer ,Stanley,Herscovitch and Topolnytsky (2002) reports a positive relation between affective commitment and work related variables. 'The model of love' towards one's own job proposed by Kelloway K &Barling J et.al (2010) focuses on Affective Commitment. It is being find out that (Kelloway K 2010) Affective commitment is having positive association with several individual and organization outcomes. Mercurio (2015) extended this model by reviewing the empirical and theoretical studies on organizational commitment. Mercurio posits that emotional or affective commitment is the core essence of organizational commitment. Employees association with the organization is also based on the evaluation of the economic benefit by way of remaining in the organization (Faloye 2014). The role of positive extrinsic rewards is very high in this case (Faloye, 2014).

IX. CONCLUSION

With critical understanding about the role of committed employee and its impact on various organizational outcomes ,the present research work suggest that the concept of OC needs to be further analyzed and studied exclusively. Even though much has been written in the area of OC, this research paper will give grounded information about the origin, models, antecedents and precedents and various approaches to OC. It has been identified that from among various dimensions, the frame work developed by Allen and Meyer is accepted as predominant in the field of commitment. In-depth analysis of various literature proved that it is difficult to measure and conceptualize OC and very few studies are available relating to the negative impact of increase in commitment in relation to work-life balance. Further research in these areas will help as to fetch some light to the unknown sides of organizational outcomes. Categorization in the selection of articles was not there for the current study, so more number of categorical studies are needed to explore further details which serves as scope of future research.

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Printed and Published by T.K. Shahal Hassan Musaliar and owned by TKM College Trust and Printed at Sujilee Colour Printers, Mampallikunnam, Chathannoor P.O, , Kollam, Kerala, PIN 691572 and Published from TKM Institute of Management, Musaliar Hills, Karuvelil P.O, Kollam, Kerala, PIN 691505.
Editor: T.K. Shahal Hassan Musaliar