



RESEARCH ARTICLES

- Assessment of Differential Factors of Burden of Multiple Disabilities Among The Older Population In India
- Fuel Cell: Solution For Electric Vehicle's Bottle Neck
- A Study In Stress Management – A General Perspective
- Artificial Intelligence and Its Implications For Management
- Sales Promotion Effectiveness and Its Relationship with Consumer's Price Consciousness and Quality Consciousness
- Consumption Behavior of Sunscreens and Fairness Creams by Indian Consumers
- The Effective Integration of Corporate Social Responsibility And Human Resource Development- The Need of The Hour
- Artificial Intelligence In Medicines



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From Editor's Desk



Dear Readers,

It is a great honor for me and my team to work in the area of publication and we feel delighted to complete our job of coming up with next issue of Bizcraft Journal of Contemporary Management Perspective for our readers.

Welcome to the Bizcraft Journal of Contemporary Management Perspective. Bizcraft is a bi annual, peer reviewed, broad- scope publication aiming to publish high-quality research and expert knowledge on topics that guarantee the functionality of the building stock throughout management domain for the enhancement of research in different areas of management. The aim of the Bizcraft is to give a highly readable and valuable addition to the literature which will serve as an indispensable reference tool for years to come hence strong emphasis on interdisciplinary issues has been given as we're conscious that many complex problems in the management require multi-disciplinary solutions.

We are pleased to publish the Volume 12 Issue 2, which includes diverse issues of Innovation and Integration of Management Practices & Technology for International Competitiveness and Domestic Trends that are significant for current debate. Organizations have significantly altered the way they do business in the wake of the digital era. The ascend of technology has prepared the means for an assortment of new business practices that many organizations are still rising familiarized to. Practically all main businesses observe digital makeover as a top priority, but some companies just require a slight push getting there. That's where managers role come into picture. It's simple to get

trapped in your calm region. Organizations can simply fall into a usual with the way they administer their business and human resources. With technology continuously growing, it's significant for managers to be unwrap and flexible to these changes. The ability to be supple and look towards the future is important management skills that need to be embraced before everything else. Managers should be enthusiastic to hold alteration and keep their team updated with the most recent technology. Organizations can never completely hold the digital period if their managers are not enthusiastic to change the manner they work and manage their employees. Technology savviness is one of the indispensable management skills for functioning in the digital age. Managers should have widespread knowledge about using diverse programs and technologies to assist give their employees the best resources promising.

As the Editor of the Bizcraft, I take this opportunity to convey my sincere gratitude to authors who have chosen the Bizcraft to publish their research articals. Further, I would like to thank Editor in Chief and other Faculty and Staff at Shri Ram Murti Smarak College of Engineering and Technology, Bareilly for the success of this Journal.

We are happy to accept contributions for our next issue from academicians, scholars and practitioners to make sure the uniformity and the accomplishment of the Journal. We receive comments and suggestions that would advance the objectives of the Journal and help in succeeding and improving to meet target of quality. I hope that this Issue will help us to better serve our readers.

We are very much grateful to our friends and all involved and contributed a lot in accomplishing this section of work to be a thriving one. All this can be achieved through steady response from our readers. So, please, do not hesitate to get in touch with me with your comments, complaints and suggestions. They will definitely help me in making this operation more and more helpful and advantageous.

We look forward to welcoming your submissions.

With best wishes,

Dr. Mohd Danish Chishti

Business Analytics: A step towards effective decision making



Dr. Ruchi Jain Garg
Editor-in-Chief

Business analytics is becoming a competitive edge for organizations. The utilization of business analytics is an expertise that is picking up standard incentive because of the undeniably slenderer edge for choice blunder. There is a requirement to gain insights, anticipation and speculations from the treasure chest of raw transactional data (both internal and external) that many organizations now store (and will continue to store) in a digital format. Analytics simplify data to amplify its value. The power of analytics is to turn huge volumes of data into a much smaller amount of information and insight.

The first step in this expedition is to recognize the significance of decision making based on data analysis and interpretation. After that the right framework needs to be in place. Thereafter, the organizational culture also needs to be adjusted. This data-driven approach is not a new concept. But things in terms of scope are diverse or may vary. The organizations involved in the collection of data and carrying on the analytics have an upper hand, however only a few organizations could actually afford it. It mostly involved after the fact. Thereafter, came up with clarifications and answer to problems. Business analytics is a twofold edged blade. On one hand, it has practically boundless potential for re-use over different business issues. On the other, there it is so

much it can do that it is anything but difficult to take on more than can ever be conveyed. Accomplishing the harmony between meeting vital objectives and conveying strategic returns is testing

This tsunami of information is the real ultimatum to all the levels of society. At individual level, we struggle to keep on priority of everything whatsoever is happening around us. The term “future shock” was coined by Alvin Toffler in 1970 to describe the immense and staggering impact realizes because of information overload. At the professional front, where we at a time suffered with the deficiency of information, we now struggle to decide which pieces of information are of significance out of the millions of calculations that are there on our fingertips. Irrespective of the facts from where you start, this ever-increasing bulk of information has changed the perspective of how we view the world; the way we reside and the way carry the business.

In order to deal with the overflowing data one needs to be smarter. It requires the potential to critically process information based on value and not on the basis of succession. It needs the awareness, more than anything else, the awareness that savage-force and manual efforts are a non feasible solution in the long-term perspective. The people having understanding of the fact that how this data flood can be managed are our future. To be able to get the real insights by interpreting the immense amount of data is beyond in fact it can be termed as competitive advantage processed. Nothing else offers an identical level of dexterity, productivity improvement or renewable value. Being “smarter” than your competitors isn’t just Exaggeration; it’s a real description of how important the impact of applied analytics is.

Equipped with the ability to quantify, communicate, deliver and measure the value they create, these modern day magicians understand that statistical proficiency alone is not enough. Instead they become

change agents, transforming the organization around them. The response to our request to authors for contribution has been overwhelming. Last, the success of any journal is built primarily on four groups of people: the contributors, the reviewers, the associate editors, and the publications staff. I would like to thank all of them and express my sincere appreciation for the support they have given to Bizcraft under my predecessors. I look forward to continuing this relationship and receiving your suggestions and ideas for making Bizcraft more valuable for our research community.

My sincere thanks to all associated directly or indirectly.

Editor in chief
(Dr). Ruchi Jain Garg

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ASSESSMENT OF DIFFERENTIAL FACTORS OF BURDEN OF MULTIPLE DISABILITIES AMONG THE OLDER POPULATION IN INDIA

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INTRODUCTION

Twenty first century is witnessing a serious health concern emerging out of unprecedented population ageing. The process of population ageing has begun to play a key role for the developed and most of the developing countries including India (National Research Council of the National Academies, 2011). According the census 2001, the older population of 60+ accounted for 6.9 percent of total population in India (RGI and Census commissioner,2001). The United Nations Population Division projected that India's population aged 50 and above will attain 34 percent by 2050. Between 2010 and 2050, the share of 65 and older is expected to raise from 5 percent to 14 percent, while the share in the oldest age group (80 and older) will triple from 1 percent to 3 percent (United Nations, 2006).As the population ageing continues in India, there will be a start pool of working age-group which will directly impact the means of supporting the older population (Yadav et al., 2011).It is extremely important in the field of health related research to not only to study the burden of multiple Disabilities among the older population but also to frame a better health policy, programmes and related measures which can provide remedy to reduce the burden of disease, in country like India. The term 'disability' has many different meanings; the Global Burden of Disease (GBD) however, uses the term disability to refer to loss of health, where health is conceptualized in terms of functioning capacity in a set of health domains such as mobility, cognition, hearing and vision (WHO, 2004). Despite the increase in prevalence of disability worldwide, due to various reasons, not much attention has been paid to its evaluation, management and prevention (WHO, 2002). The study also shows that injury other than burns is a vital cause of having disability in India.

Review of Literature

- Disability is any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being.
- Mental illness:- psychiatric disorder is a mental or behavioural pattern or anomaly that causes either suffering or an impaired ability to function in ordinary life (disability), and which is not a developmental or social norm.
- Locomotion illness -: is an organ system is not working that gives humans the ability to move using their muscular and skeletal systems. The musculoskeletal system provides form, support, stability, and movement to the body.
- Visual illness:- ability to recognize the things well by both the eyes is partially or fully impaired due to different kinds of disability.

According to the disablement model, diseases are the main cause of impairments and functional decline which ultimately may lead to disability. People aged 70 years and over usually have 2-3 chronic conditions, which accounts for around two thirds of total national health care expenditure. Sensory disorders and particularly vision and hearing impairments are important causes of problems in carrying out daily activities. The prevalence of clinically important depressive symptoms among community-dwelling older adults ranges from approximately 8% to 16% (Blazer 2003). For example in the India depression affects 10-15% of people over 65 living at home. Even higher figures have been reported (Heikkinen,2002). Depressive symptoms are more frequent among the oldest old, but the higher frequency is explained by factors associated with ageing, such as a higher proportion of women, more physical disability, and co-morbidity, more cognitive impairment, and lower economic status. It seems that depressive symptoms and disorders can result from functional limitations as well as cause them when depressive symptoms are associated with sufficient disruption in everyday function, they tend to have a demonstrable public health impact (Johnsson et al.2000, Judd et al. 1996). Despite a favourable response to treatment, late- life depression remains largely undetected and untreated (Anderson 2002& Blazer 2003).

MATERIALS AND METHODS

Objective :-

- To estimate the prevalence of disabilities among the older population in India.
- To explore the factors of disabilities among the people of above sixty years in India.

Research design :-

A descriptive and comparative study among the age group of Sixty, seventy, eighty and ninety years.

Methods of Collection of Data:-

The main sources, which provide information on disability at the national level, are the Census (various rounds), the NSSO (2002) and the IHDS (2005). Data is collected from the survey of disabled persons in India conducted nationwide by the National Sample Survey Organization (NSSO) and census. The study consider disabled person who have any of the five types of disabilities - mental, visual, hearing, speech and locomotors. This study used the India Human Development Survey 2011 (IHDS) data for the assessment of multiple dimensions of disability among the older people in India.

Table-1: Prevalence of different types of disability in India.

Types of disability	Census of India (2001)	NSSO (2002)
Movement (Locomoter)	28%	51%
Seeing (Visual)	49 %	14%
Hearing	06%	15%
Speech	07%	10%
Mental	10%	10%

Source census (2001) and NSSO (2002).

Table-1 shows that the disability among percentage of locomotors disability is more in 2002. However; the percentage of visual disability is comparatively lesser. On the other hand data shows that the disability of hearing and speech are relatively more in NSSO (2002). Though percentage of mental disability is same.

Age group	<i>males</i>	<i>females</i>
>60	50.4	49.5
>70	48.5	51.4
>80	45.7	54.21
>90	43.1	56.81

Table-2: Percentage of disability among males and females in India

Source Census 2011 and NSSO (2002)

It has been found from table-2 that the percentage of disabilities are more in more than sixty years of age in females except the age group of males who are above sixty years.

Table-: Percentage of different types of disabilities in India.

Age group	Seeing		Hearing		Speech		Movement		Mental retardation	
	M	F	M	F	M	F	M	F	M	F
>60	23.5	27.1	18.7	19.4	4.1	3.4	27.5	22.97	1.73	1.62
>70	24.1	26.6	19.8	19.2	3.2	2.5	26.5	23.5	1.2	1.2
>80	23.0	24.2	20.7	19.0	2.65	2.07	24.52	23.15	1.10	1.00
>90	20.8	21.3	20.4	18.2	3.09	2.22	21.74	21.39	1.47	1.11

Source census 2001 & 2011.

It has been observed from table-3 that the percentage of seeing, hearing, speech is more than the cases of males in case of more than 60 years. Though the percentage of disability of mental retardation are slightly lesser in case of females than males in the same age group. Further it has been noticed that the cases of seeing, hearing speech and locomotors disability are more in male than female except mental retardation which is same in both the groups at the age of people who are more than seventy years. In the age group of more than eighty years table-6 showed that the percentage of seeing or vision is more in females. However, the percentage of hearing, movement and mental retardation is more in males.

Factors affecting the various disabilities:-

The reasons of disability mentioned most often are genetic, birth defects, lack of concern during pregnancy and childbirth because of lack of coverage, unhygienic housing, natural disasters, illiteracy and the resulting lack of information on existing health services, poor sanitation and hygiene, congenital diseases, malnutrition, traffic accidents, work-related accidents and illnesses, sports accidents, the so-called diseases of “civilization” (cardiovascular disease, mental and nervous disorders, the use of certain chemicals, change of diet and lifestyle, etc.), marriage between close relatives, accidents in the home, respiratory diseases, metabolic diseases (diabetes, kidney failure, etc.), drugs, alcohol, smoking, high blood pressure,

old age, Cages' disease, poliomyelitis, measles, etc. Traffic accidents are referred to in nearly all the reports as a cause of disability, although they are obviously more frequent in the more developed countries.

Table 4: Factors responsible for locomotors disability

Cause of movement disability	>60 years
Cerebral palsy	3.8
Polio	3.4
Leprosy cured	1.1
Leprosy not cured	1.7
Heart stroke	15.3
Arthritis	6.5
Cardio respiratory disease	0.7
Cancer	0.3
Tuberculosis	-
Burns	0.7
Injury other than burns	29.9
Medical/Surgical Interventions	1.4

Cause of visual disability	>60
Sore eyes during 1st month of life	-
Severe diarrhoea before 6 th year of age	-
Cataract	27.8
Glaucoma	5.7
Corneal Opacity	2.2
Small pox	1.2
Burns	2.0

Source NSSO 2002

Table-5 Factors responsible for visual disability

Injury other than burns	2.6
Medical/Surgical Interventions	33.8
Old age	6.6
Other reasons	3.9

Source NSSO (2002)

Table-6 Factors responsible for Mental Disability

Cause of Mental disability	>60 years
Pregnancy and birth related	-
Serious illness during childhood	-
Head injury in childhood	-
Hereditarily	4.0
Other reasons	35.6
Not knows	56.3

Source NSSO (2002)

Table-7 Factors responsible for hearing Disability

Cause of hearing disability	>60 years
German measles/rubella	1.9
Noise induced hearing loss	8.5
Ear discharge	18.9
Injury other than burns	3.8
Medical/surgical interventions	1.1
Old age	45.0
Not known	13.5

Source NSSO (2002)

Table-8 factors responsible for speech disability

Cause of speech disability	>60
Hearing impairment	-
Voice disorder	-
Cleft palate/lips	-
Paralysis	48.4
Mental illness/retardation	-
Other illness	20.3
Injury other than burns	-
Not known	5.8

Conclusion

Because in significant part the predictors of old age disability stem from earlier phases of life, it is important to examine the predictors and risk factors also from the life-course perspective and not only rely on the relation to prevailing living conditions but also the behavioural factors. This report has focused on the relatively neglected area of emotional, psychological and mental health (EPMH) disability in order to understand the circumstances and needs of those affected. The percentage of disability in female is more than the males. According to percentage distribution of disability in elderly people table-3 that the percentage of seeing, hearing, speech is more than the cases of males in case of more than 60 years. Though the

percentage of disability of mental retardation are slightly lesser in case of females than males in the same age group. Further it has been noticed that the cases of seeing, hearing speech and locomotors disability are more in male than female except mental retardation which is same in both the groups at the age of people who are more than seventy years. In the age group of more than eighty years table-6 showed that the percentage of seeing or vision is more in females. However, the percentage of hearing, movement and mental retardation is more in males.

Recommendations:-

- Needs more resources for the educational provision and support.
- Need to improve the physical accessibility of buildings and facilities in old age homes.
- Facilitate and resource links so that disability agencies in the voluntary sector can provide supports to elderly peoples.
- Improve services in the wider community and co-ordination between services.
- Media coverage.
- Increase disability awareness.
- Enhance supports in multiple disability states.
- Promotion of surveillance system.
- Vocational Rehabilitation and community care.

REFERENCES

- ◆ *Alam, M. (2004) —Ageing, old age income security, and reforms: an exploration of Indian situation. □ Economic and Political Weekly, Vol.39 No.33, pp. 3731- 3740.*
- ◆ *Bloom, E. D. (2011), —India's Baby Boomers: Dividend or Disaster □□ Current History, Vol. 110 No. 735, pp.143-149.*
- ◆ *Bloom, E. D., Canning, D. Hu, L., Liu, Y., Mahal, A., Yip, W. (2010), —The contribution of population health and demographic change to economic growth in China and India □, Journal of Comparative Economics, Vol. 38 No.1, pp.17–33.*
- ◆ *Kennedy J, Minkler M (1998) —Disability theory and public policy: Implications for critical gerontology □ International Journal of Health Services Vol.28 No.4, pp.757-776.*
- ◆ *Mason A, Lee S, and Russo G (2005) —Demography of Aging Across Asia □ (Ch. 2), in H. Yoon and J. Hendricks, Handbook of Asian Aging Baywood Publishing Co. New York. pp.25-65.*
- ◆ *National Sample Survey Organization (2003) Disabled Persons in India: NSS 58th Round (July-December 2002)', Report No.485 (58/26/1) National Sample Survey Organization, Ministry of Statistics and Programme Implementation, Government of India. New Delhi.*
- ◆ *National Research Council of the National Academies. (2011) Preparing for the Challenges of Population Aging in Asia: Strengthening the Scientific Basis of Policy Development. National Academies Press. Washington DC.*
- 8. *United Nations Population Division (2006) Department for Economic and Social Information, —World Population Prospects: The 2006 Revision Population Database, □ December 2006.*
- ◆ *World Health Organization (2001). ICF International classification of functioning, disability and health. Geneva: World Health Organization. Template available online at:<http://www.who.int/classification/icf>.*
- ◆ *World Health Organization (1976) Document A29/INFDOCI/1, World Health Organization. Geneva.*
- ◆ *WHO (2004) Annex Table.4 Healthy Life Expectancy (HALE) for the WHO Member States, Estimates for 2004.*
- ◆ *Times of India. 'Fund for disabled not utilized: NGOs'. The Times of India, Bangalore, health. Geneva: World Health Organization. Template available online at: <http://www.who.int/classification/icf>.*
- ◆ *Yadav, P., Goli S., and Arokiasamy, P. (2011). “Employment and Its Linkage with Chronic Diseases and Medical Care among Older Population in India”, Health System Reform in Asia 2011 Conference, 9th – 12th December 2011, The University of Hong Kong, Hong Kong.*
- ◆ http://censusindia.gov.in/Census_And_You/disabled_population.aspx
- ◆ http://mospi.nic.in/mospi_new/upload/Revised-Disability_mANUAL_20june12.pdf

FUEL CELL: SOLUTION FOR ELECTRIC VEHICLE'S BOTTLE NECK

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Abstract

Reserves of fossil fuels have flashed a trend of revolution in energy. A transformative approach is required to meet the rising demand of zero emission alternatives for automobile industry. Step forward a revolutionary development of Hydrogen fuel cells is a radical new alternative to the existing internal combustion engines and rechargeable batteries in the automobile industry. Hydrogen fuel cell vehicles are zero emission and run on compressed hydrogen fed into a fuel cell "stack" that produces electricity to power the vehicle. These engines offer a combination of the range of conventional combustion engines with low fuel consumption, no harmful emissions, enhanced safety standards, low noise emissions, and the comfort of an electric vehicle. This paper includes how government policy will endorse the usage of the hydrogen fuel cell in combination of electrical vehicle where we can reduce cost and bottle neck of the Batteries. So that it will be easy for the companies and government to implement the EV policy in combination with Hydrogen Fuel Cells or Fuel Cells could be the alternative source so that the emission problem could be solved, and Automakers are aiming to increase the production volume to support the rising demand for fuel cell electric vehicles (FCEV). According to the Fuel Cells and Hydrogen (FCH) Organization, a standard fuel cell bus. Stringent regulatory norms toward emission reduction for automobile segment create a favourable scenario toward growth of FCEV. In July 2018, the Ministry of Trade, Industry, and Energy (MTIE) proposed a target of deploying five million zero emission vehicles by 2030.

The two major research strategies have been used: (1) Quantitative research of previous fuel cells policy and technological usage Research data and (2) The various research papers Hydrogen Fuel cells technology & Compatibility with EV. Data have been collected from archives and published Reports. It also explores the new opportunities and whitespaces which companies can follow to increase their market share by taking first mover advantage and increase their profit through using it on a feasible background.

KEYWORDS: *Hydrogen Fuel cells, Fuel cells electric vehicles (FCEV), Fuel cells & Hydrogen (FCH), Ministry of Trade, Industry, and Energy (MTIE), Fuel Cells and Hydrogen Joint Undertaking (FCHJU) Keywords: Consumer Behaviour, Lifestyle, Attitude, Online Shopping, Mobile Phones, Purchasing Decision*

INTRODUCTION

Reserves of fossil fuels have sparked a wave of innovation in energy, and with the world's energy consumption set to increase 35 percent by 2035, the need to develop cleaner and renewable alternatives is paramount. Growing concern to reduce the environmental pollution, as the transportation sector contributes to 13.1 % of global GHG emissions will pave the way forward for the development of carbon neutral power generation technologies. More than 1 billion automobiles used worldwide, the automotive industry stands out as one of the leading economic forces with value generation of \$3 trillion per year. Usage of fossil fuels in the automobile industry in a large scale has posed major threats for creating a sustainable and efficient mobility network. Ongoing effort for development of alternative fuels has gained momentum owing to the volatility of oil prices and stability of supplies. According to the American Automotive

Policy Council Report, in 2017, the U.S. automakers & suppliers spent more than USD 21 billion on the automotive R&D sector for development of emission free technologies. A transformative approach is required to meet the rising demand of zero emission alternatives for automobile industry. Several government entities are taking initiatives such as tax credits and favourable incentives to encourage the adoption of zero emission automobiles. Ministry of Trade, Industry, and Energy (MTIE) in July 2018 proposed a target of deploying five million zero emission vehicles by 2030. Step forward a revolutionary development of Hydrogen fuel cells is a radical new alternative to the existing internal combustion engines and rechargeable batteries in the automobile industry.

Fuel Cells: A fuel cell is an electro-chemical device that directly converts the chemical energy in hydrogen to electricity, to produce heat and water. The fuel cell consists

of an electrolyte between an anode and a cathode. Power produced by a fuel cell depends on various factors including the fuel cell type, size, operating temperatures, and pressure at which gases are supplied. A single fuel cell approximately produces 1 volt of power at favourable conditions. The amount of electricity generated by the fuel cells can be increased by combining the individual fuel cells into a stack depending on the capacity required by the application. Fuel cell electric vehicles are zero emission and run on compressed hydrogen fed into a fuel cell "stack" that produces electricity to power the vehicle. These engines offer a combination of the range of conventional combustion engines with low fuel consumption, no harmful emissions, enhanced safety standards, low noise emissions, and the comfort of an electric vehicle. FCEV provides significant environmental benefits while meeting operational requirements. Hydrogen holds substantial potential for carbon neutrality along the entire value chain. The gas can be produced from 100% renewable energy sources using electricity ensuring zero carbon dioxide emission during vehicle operation. According to the Fuel Cells and Hydrogen (FCH) Organization, a standard fuel cell bus can save approximately 800 tonnes of CO₂ in 12 years compared to buses operating on conventional fuels. The advantage of FCEV over electric vehicles is that their range and re-fuelling process is similar with conventional vehicles. The major challenge of FCEV is to produce hydrogen at competitive rates, ideally using clean domestic resources and to manufacture vehicles at significantly lower cost. The Indian hydrogen programme is one of the initiatives to increase hydrogen production, with an initial funding of Rs 100 crores, being supported through the Department of Scientific and Industrial Research (DSIR) and the Ministry of New and Renewable Energy (MNRE) and Oil Industry Development Board.

Review of Literature

Harvard business studies have forecasted that bio fuels and its products have more bright future than conventional fuels and its products. Hydrogen FCEV (car) was launched on the street of Great Britain during 2016. United Kingdom has plan to put 1.5million hydrogen fuelled cars up till 2030.

According to UN Framework Convention on climate Change, India submitted its Intended Nationally Determined Contribution (INDC) to reduce the emission level by 33-35% by 2030 with a level of 2005. The estimated cost is \$ 2.5 trillion to grow clean energy in electricity generation to 40% through non fossil fuel sources. Growth of hydrogen as a source of reliable energy generation contributes the government's non fossil fuel energy generation targets. IIT Delhi in collaboration with Mahindra & Mahindra developed a hydrogen fuelled three-wheeler

which uses hydrogen in gaseous phase. The total financial outlay provided for this project of development of hydrogen fuelled vehicle is Rs. 680 Cr. Government of India had launched three projects Mission Mode project (MMP), Research and Development Project (R&DP) and Basic and Fundamental Research Project (B/FRP) during the time frame of 2016-22 with a financial outlay of 750 Cr, which indirectly contributes for the development of hydrogen FCEV.

Objective of The Study

This main objective is to do the analysis on the Fuel cells technologies for automotive segment to remove the bottle neck of Batteries in Electrical vehicles and by making it feasible to with our conventional supply chain of our existing oil and gas supply chain network. Another aim is to find out its profits to general people, for manufacturer & the path to market the Fuel cells technology in Indian consumers segment, they are all using conventional fuels cars which is most problematic for the environmental and cost point of view. Further, it is to find out the way to supply the hydrogen fuel without more expenses on its infrastructural development. For EV's, there is huge investment on developing the entire network and electric supply station other than conventional fuel supply chain. It is also to study about the government norms and other factors which affects its supply in market.

Research Methodology

In this paper, the authors have performed the secondary research work to find out the different factors and their influence on Fuel cell technological stake in the country & further on the basis of secondary research on the conventional supply chain analysis, the recommendations have been formulated to improve the market share by using the conventional strategy and supply chain with marketing.

Types Of Research

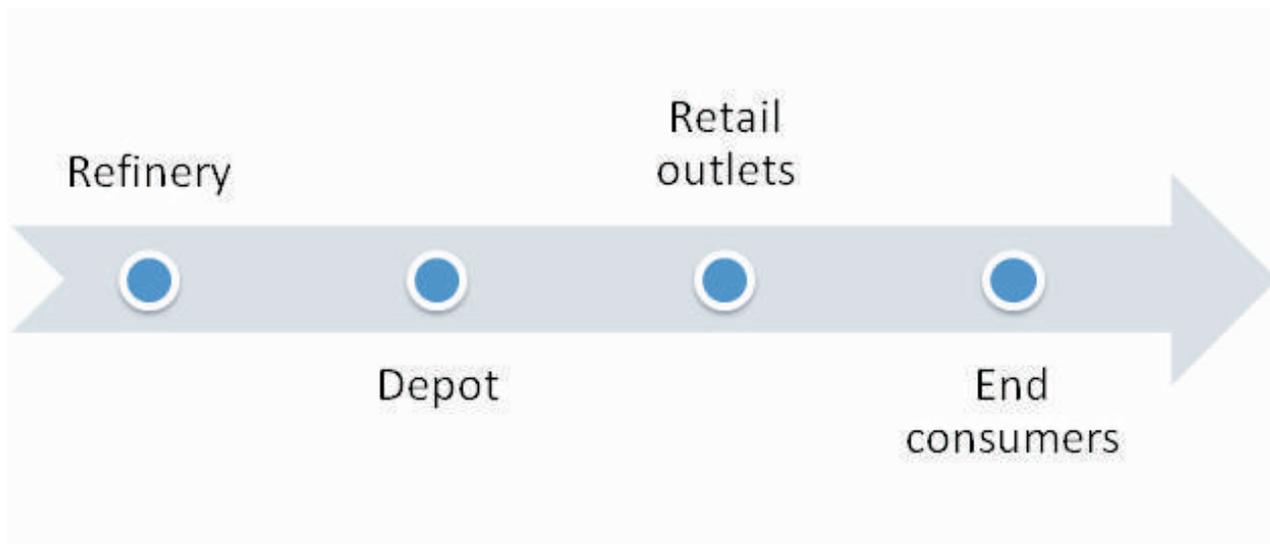
The researchers have performed the research on exploratory & descriptive, based on oil industry as well as renewable industry. The research has been used to identify the major factors which are going to make fuel cells available in the market on a feasible and affordable rate and companies can start generating profit by selling them in automotive segments. This has been an exploratory and descriptive research, as it used both the secondary sources as research papers and other relevant study material. For this research, the major data has been gathered from secondary sources as in Indian context the technology it yet not implemented.

Analysis And Findings

What is the conventional supply chain in oil industry still in use and how hydrogen fuel cells can be implemented in the same supply chain?

As per this research, researcher found that in India there is the conventional supply chain of oil as given below:

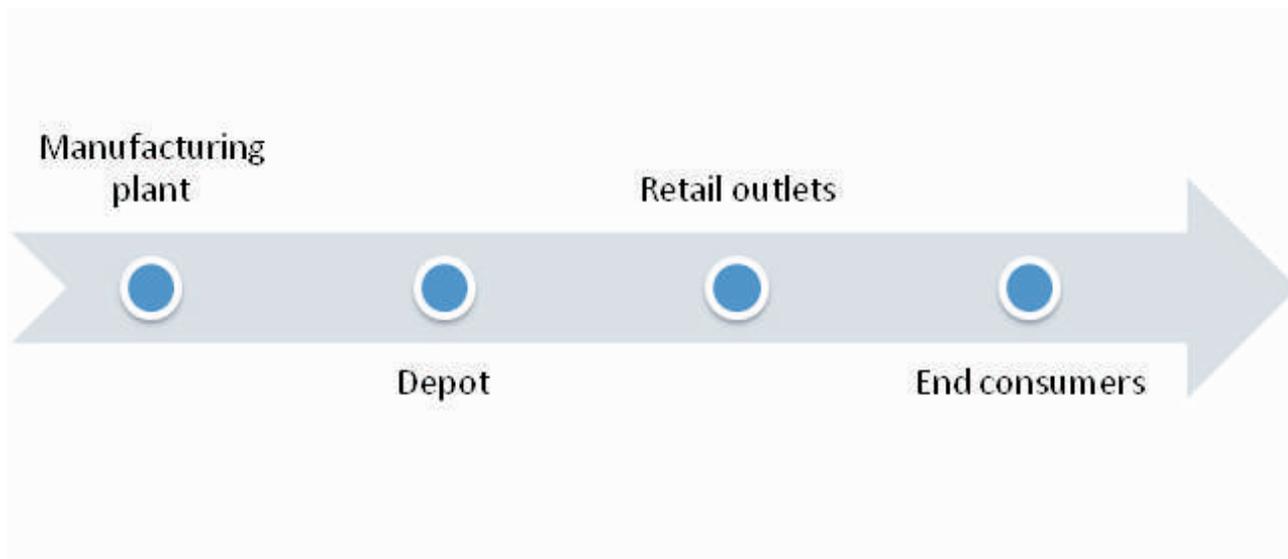
Figure - 1



It can be seen in the above figures that we can use the transmission network as same as the conventional for our hydrogen fuel cells. In this risk of hazardous accidents are less because in this after being supplied of the Hydrogen

For Hydrogen the existing network can be used as given below:

Figure - 2



only do internal combustion which lead to production of electricity which turns into mechanical energy and motor start running.

What could be the feasibility of the Fuel cells powered vehicles?

As per California fuel cells Report, Fuel cells costs run from \$12.85 for more than \$16 per kilogram (kg), yet the most

Whereas for EV's, there should be developed the proper and strong infrastructure from where electricity can be generated & provided to power vehicle which could be more costly and Hazardous affair for life of the general public.

well-known cost is \$13.99 per kg (comparable on a cost for each vitality premise to \$5.60 per gallon of gas), which means a working expense of \$0.21 per mile. Automakers are including three years of hydrogen fuel with their underlying

deals and rent contributions, which will shield early showcase adopters from this at first high fuel cost. While future cost is dubious, NREL gauges that hydrogen fuel costs may tumble to the \$10 to \$8 per kg go in the 2020 to 2025 period. A kilogram of hydrogen has about a similar vitality content as a gallon of gas. FCEVs are about twice as productive as gas-controlled vehicles: a FCEV goes about twice to the extent a regular vehicle given a similar measure of fuel vitality. At \$3.50 per gallon gas, a customary vehicle costs about \$0.13 per mile to work, while a FCEV utilizing \$8 per kg hydrogen fuel would cost about \$0.12 per mile. It is given in their report that initially the prices are high in terms of gasoline but after developing a proper plant we can be able to curb the costs from 3 to 4 percent which will be much more efficient than the cost of gasoline in future & with increasing period of time it will come from 4 to about 12 percent. Other than the production cost we can see that our whole infrastructural development cost has been declined to almost 85 percent in comparison to the infrastructural development cost of electrical vehicles charging stations.

How we will be going to position our fuel cell vehicles in front of Conventional fuel vehicles and in front of EV's which are already in market.

After the feasibility study, our major motive is to position our FCEV's in front of conventional and normal EV's vehicles which is much tougher job.

It has been found that Indian government & judiciary have already announced that by 2030 there will be removal of conventional fuel-based vehicles from roads. They are going to invest billions of dollars in creating infrastructure on it. India policy Making association NITI AAYOG have already announced the budget for it.

Now there is a need to segment the markets which are interested to buy the EV's and there is a huge scope to demonstrate our strengths that with normal EV's one can travel up to 160 km averagely per full charge with cost of 0.14\$ per unit but for the Fuel cells powered you can travel up to 250 miles with full tank which will cost 0.9 to 0.11 \$ per kg which much more efficient and even its by products will be water vapour which will positively affect the environment and water cycle also.

Tagline could be as "Purchase FCEV and feed water to thirsty"

FCEV's is not only Vehicle but also a contribution from your side to safeguard your environment. FCEV's should be positioned according to vehicle segment analysis. Like SUV's, Sedan, because it can produce more power than a normal EV does it can be easily acceptable in Heavy Duty vehicle like army tanks and trucks.

And the main segment of conventional fuel will be targeted by changing policy and providing fuel cell technology at much lower rate to the end consumer for their use with existing network of Supply Chain in which their availability of resources will be next to their homes.

CONCLUSION

Fuel cells technology is one of the most promising & profitable in terms of environment and economic side. It is a reforming substitute for a better future of today's vehicle manufacturing industry and their fuel utilizing capacity. The major motive is to basically combine the necessary energy need and requirements and supply of the convenience of fuel for efficient operational capability of the vehicles for the better future of energy industry and renewable industry as well. Fuel cells technology with comprises of existing network and supply chain will be much more feasible and less capital intensive for the market as whole and infrastructure investment could be saved also from its supply in the market.

REFERENCES

- ◆ *Abhilasha Singh (2018). India's first-ever hydrogen fuel cell powered bus by Tata Motors is here! Made in India bus emits only water. Retrieved from <https://www.financialexpress.com/auto/car-news/tata-motors-indianoil-corporation-flag-off-countrys-first-hydrogen-fuel-cell-powered-bus/1096895/>*
- ◆ *California Fuel Cell Partnership. Citation: Cost to refill. Retrieved from <https://cafcp.org/content/cost-refill>*
- ◆ *Clarity Fuel Cell. Retrieved from <https://automobiles.honda.com/clarity-fuel-cell>*
- ◆ *C. E. Sandy Thomas (2009). Fuel Cell and Battery Electric Vehicles Compared. Retrieved from https://www.energy.gov/sites/prod/files/2014/03/f9/thomas_fcev_vs_battery_evs.pdf*
- ◆ *Dipayan Dutta (2018). Hydrogen cars could be the Future of Indian Motoring: Why this tech is more usable than battery-run EVs. Retrieved from <https://www.financialexpress.com/auto/car-news/hydrogen-cars-could-be-the-future-of-indian-motoring-why-this-tech-is-more-usable-than-battery-run-evs/1254661/>*
- ◆ *Environmental and Energy Study Institute (2015). Citation: Fact Sheet - Fuel Cells. Retrieved from <https://www.eesi.org/papers/view/fact-sheet-fuel-cells>*
- ◆ *Geerten van de Kaa et al (2017). Citation: The Battle between Battery and Fuel Cell Powered Electric Vehicles: A BWM Approach. Retrieved from <https://www.mdpi.com/1996-1073/10/11/1707/pdf>*
- ◆ *How do hydrogen fuel cell vehicles work? Retrieved from <https://www.ucsusa.org/clean-vehicles/electric-vehicles/how-do-hydrogen-fuel-cells-work>*
- ◆ *Jinfeng Wu et al (2008). Citation: A review of PEM fuel cell durability. Journal of Power Sources. Retrieved from <https://www.sciencedirect.com/science/article/abs/pii/S0378775308011968>*
- ◆ *Ministry of New and Renewable Energy (2016). Retrieved from https://drive.google.com/file/d/17EFZDaC7jnmPE85yk6Dw8yG8Fe2Qd_0J/view*
- ◆ *Office of Energy Efficiency & Renewable Energy (2017). Citation: 5 Fast Facts about Hydrogen and Fuel Cells. Retrieved from <https://www.energy.gov/eere/articles/5-fast-facts-about-hydrogen-and-fuel-cells>*
- ◆ *U.S Department of Energy. Citation: Fuel Cell Electric Vehicles. Retrieved from https://afdc.energy.gov/vehicles/fuel_cell.html*

A STUDY IN STRESS MANAGEMENT – A GENERAL PERSPECTIVE

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Abstract

Stress is taken to be synonymous with tension or strain, or generally having a negative feeling associated with it. Stress is always present in every day life even in the simplest work. A high stress level affects considerably the health and efficiency of individual, which in turn affects the productivity of the individual.

In the present part of the paper, stress and its causes and, methodology to measure, stress levels have been dealt with, along with the analysis.

INTRODUCTION

During the last decade and a half, health consciousness has suddenly increased in all sections of our society. More and more persons are becoming health conscious now. People are trying to become fit both physically and mentally. The living and working conditions in most of our towns, as well as the working environment contains high amount of pollutants. Unhygienic living conditions, commuting long distances on public transport six days a week, pressures of reaching the workplace in time, operating and working with in organizational discipline, being the part of rat race for doing better than other, have contributed for increased stress in life for all.

Of course the stress is an essential part for survival but excessive stress leads to the reduction in efficiency as well as the poor health of individuals, this affects the motivation to improve, which in turn leads to reduction in commitment, leading to an overall downslide for the individual, organization, society and the ration as a whole.

Thus, stress management is an extremely important factor, which is required and very much essential in our day – to – day life.

So far the authors have come across a number of research papers, which deal mostly with the clinical aspects of stress management [1]. The present paper is an attempt to relate the stress management in general perspective, specially in the age groups of (20-30 years, 30-40 years, 50-60 years, 60-70 years) by conducting a survey on 230 individuals exposed to ordinary working conditions.

STRESS AND STRESS MANAGEMENT

According to R.S. Schuler [2] “stress is a dynamic condition in which an individual is confronted with an opportunity, constraint and demand related to what he or she

desired and for which the outcome is perceived to be both uncertain and important”.

According to Beehr and Newman [3] “Job stress is defined as a condition arising from the interaction of people and their jobs and characterized by changes with in people that force them to deviate from their normal functioning”.

Another definition is given by Ivancevich and Matteson [4] which defines, “Stress as the interaction of the individual with the environment and it is an adaptive response, mediated by individual differences and psychological processes that is a consequence of only external environmental action, situation or event that place excessive psychological and physical demands on a person”.

Stress is also defined according to Hitchcock Medical Centre (USA) official website [5] as “A state of tension that is created, when a person responds to the demands and pressures that come from educational institutions, work, family and other external sources, as well as those that are internally generated from self imposed demands, obligations and self criticisms”.

Stress causes anxiety, which in small doses is healthy, because it motivates the person to get things done. Stress is both additive and cumulative and it adds up over time, until a state of crisis is reached and symptoms (susceptibility to colds, respiratory disorders, tooth decay, high blood pressure, diabetes, asthma, ulcers, colitis and even cancer). Symptoms appear, which is untreated may lead to physical illness and sometimes death.

The Figure no (1) show the relationship between job stress and its causative factors.

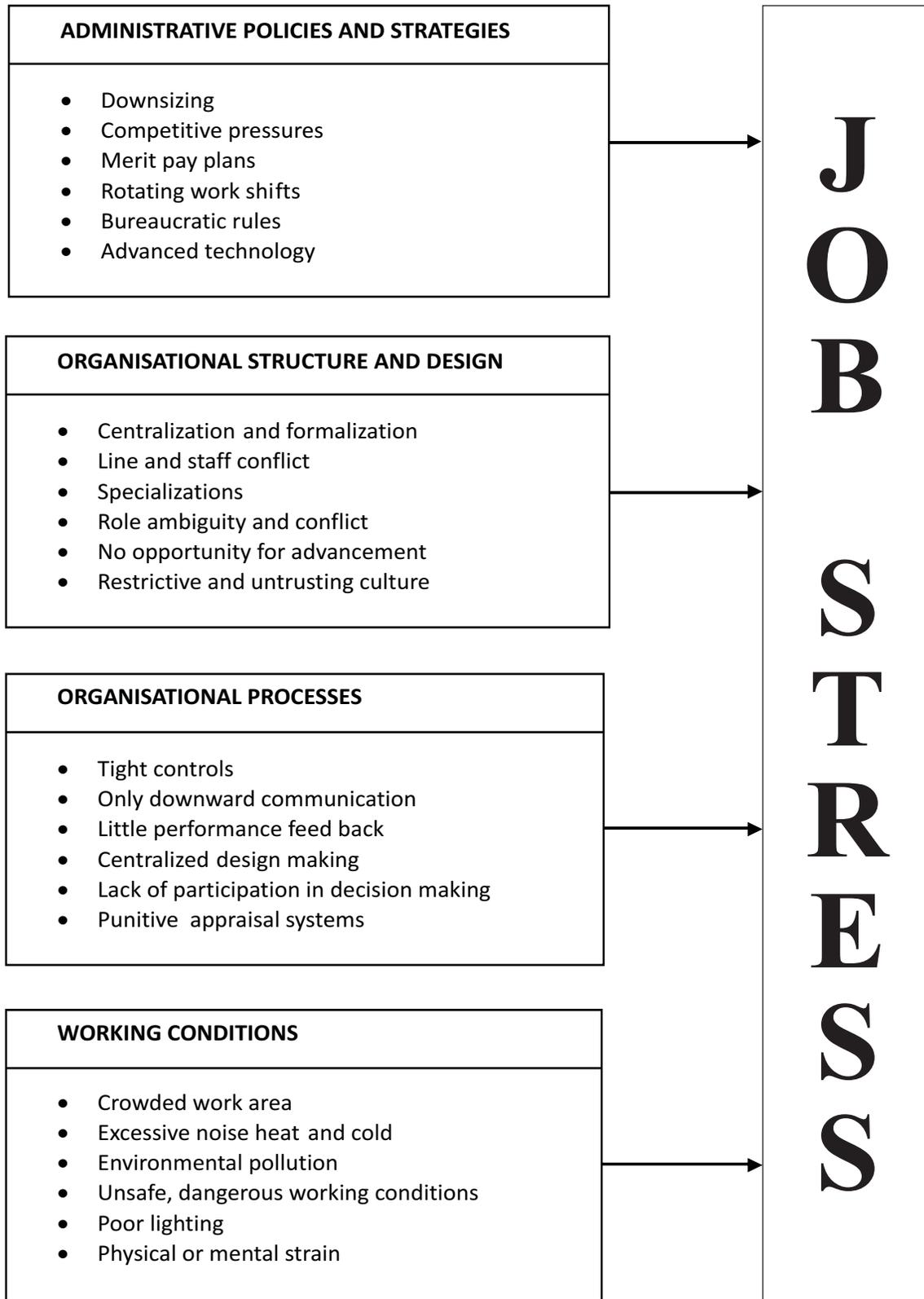
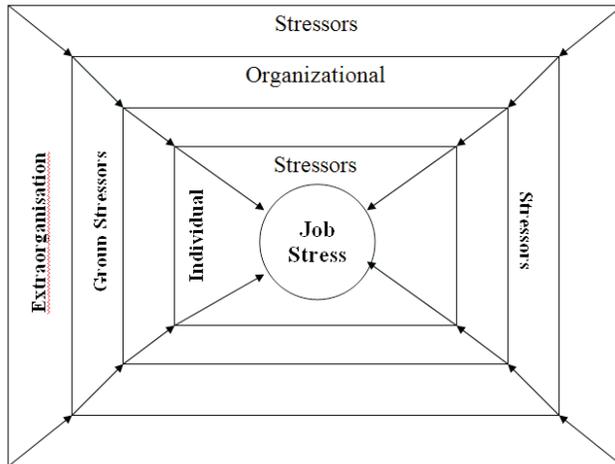


Fig. 1 JOB STRESS AND ITS CAUSATIVE FACTORS

Job stress is also caused by outside forcercs and events. Extra-organisational stressors include things such as societal and technological changes, globalizations, the family, lack of relaxation economic and financial conditions, residential and community conditions.

Job stress is also caused by organizational stressors, group stressors, and also by individual stressors. [See Fig. 2]



CATEGORIES OF STRESSORS AFFECTING OCCUPATIONAL STRESS [Fig. 2]

Early in the 20th Century Walter Cannon's research [6] in biological psychology, describes the “fight or flight” response of the 'SYMPATHETIC NERVOUS SYSTEM (SNS)’ threats. Cannon found that SNS arousal in response to a perceived threat includes several elements which prepare the body physiologically, either to take on and face the attacker or flee from danger.

These results into

1. Heart rate and blood pressure increase.
2. Perspiration increases
3. Hearing and vision being affected.
4. Hands and feet get cold. Because blood is directed away from large muscles in order to prepare for fighting or fleeing.

SIGNS OF STRESS

Stress causes anxiety, which, in small doses, is healthy, because it motivates the person to get the things done. It adds up overtime until a state of crisis is reached and symptoms appear. Stress is both additive and cumulative.

Stress can make a person susceptible to colds, respiratory disorders and even tooth decay. It can also increase the risk for developing heart disease, high blood pressure, diabetes, asthma, ulcers, colitis and various other mental disorders as well.

Following signs are exhibited at time: - [6]

1. Normal emotions that are displayed to an extreme degree or for a prolonged period of time (for example tearfulness, nervousness).
2. Marked changes in personality or mood.
3. Listlessness, Lack of energy.
4. Inability to make decision or to concentrate on other activities.
5. High levels of irritability, including aggressive, violent behavior.
6. Use of alcohol or other drugs that leads to recklessness, impairment of loss of control etc.
7. Thought or desire to take drastic action or make impulsive decisions.
8. Suicidal thoughts.
9. Muscle tension, headaches, low back pain, insomnia and high blood pressure.
10. General body complaints such as weakness, dizziness, headache, stomachache, etc.
11. Loss of or increased appetite, cold or sweaty hands, anxiety, indigestion, etc.

RESEARCH METHODOLOGY

A total of 230 individuals were surveyed by authors using questionnaire method and interview method in Ranchi. Twenty questions regarding stress were asked. A five point rating scale was used to tabulate the results. The stress levels were classified in four categories as follows-

1. If the sum total is in between 20-29, then the stress level is known as Normal stress. (Then the person is having a high degree of self control, self esteem and identity).
2. If the sum is in between 30-49, then the stress level is

Age Group	Number of Individuals*
*20-30	101
31-40	38
41-50	39
51-60	24
Greater than 60	28

known as Anxiety level. (The person is having a healthy sense of control over the life, but occasionally negative self-talk causes a lot of anxiety).

3. If the sum is between in 50-69, then the stress level is known as confused state of mind. (The individual's options are often clouded and due to negative thinking. Individuals feel trapped by situations).
4. If the sum is between in 70-80, then the stress level is known as Crisis state (For individuals in this state the life have become a crisis and struggle).

*These individuals were students, self-employed individuals and various other professionals in Ranchi City.

QUESTIONNAIRE

Name (Optional) _____

_____ Age _____ Gender _____

Qualification: _____

4 = All the time 3 = Often 2 = Sometimes 1 = Never

1. I am tired by the routine jobs. []
2. My fate is controlled by outside force, beyond my control. []
3. I am always troubled by changes which are introduced in any field. []
4. I am unable to meet the demands of my schedule. []
5. I am worried about financial matters. []
6. I have a risk averse personality. []
7. I am always worried about my social status. []
8. I feel responsible for the happiness of people around me. []
9. I never ask for help from others. []
10. I am not sure of my career goals. []
11. I am satisfied with what I have achieved so far. []
12. No matter how much success I have, I feel empty []
13. I feel happy only when I interact with competent people. []
14. People let me down always. []
15. I do not believe in expressing the anger. []
16. If I am angry, I am willing to express it. []
17. If anyone is criticizing me, I am always hurt. []
18. I am always afraid of outcomes, whenever I am taking up a new activity. []
19. I never express my feelings of sadness OR happiness. []
20. I do not have faith in others. []

Results And Discussion –After Tabulating the results following trends were obtained

Figure (8) shows that 60.71% of individuals are experiencing anxiety levels in the age group above 60 years confused state of mind was shown by 57.14% individuals and 7.14% of them experienced crisis and normal stress above 60.

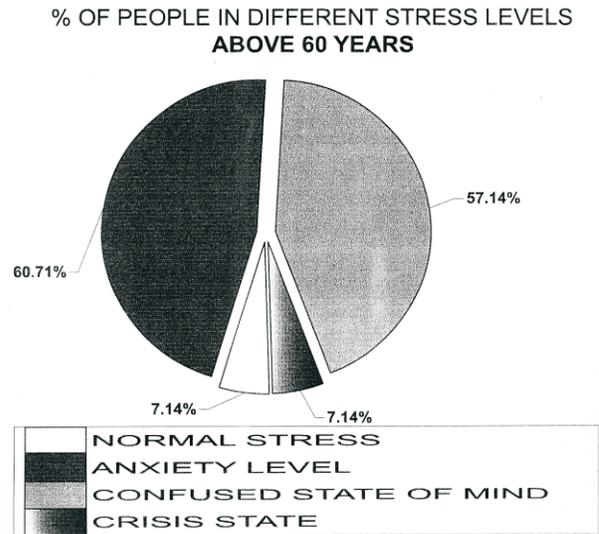


Figure-8

Figure (7) shows that 84.62% of individuals in age group of 41-50 years are experiencing anxiety levels and 12.82% of individuals were found to be in confused state of mind.

25.6% of individuals in age group of 41-50 years were found to be in crisis stage.

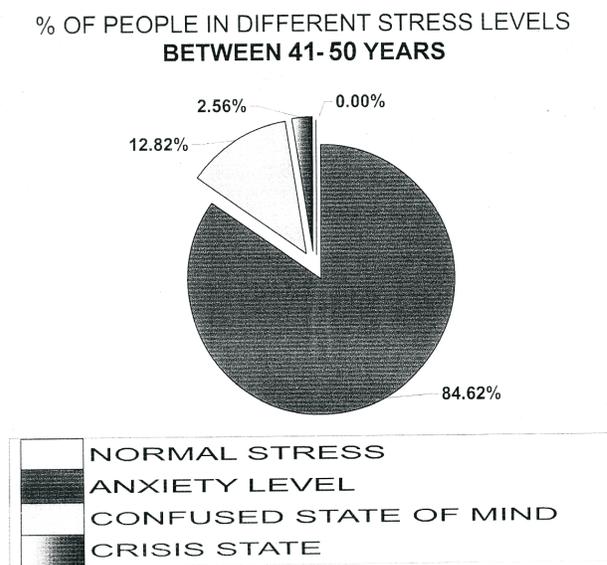


Figure-7

Figure (6) shows that 76.32% of individuals in the age group of 31-40 years are experiencing anxiety levels and 47.37% were found to be in confused state of mind.

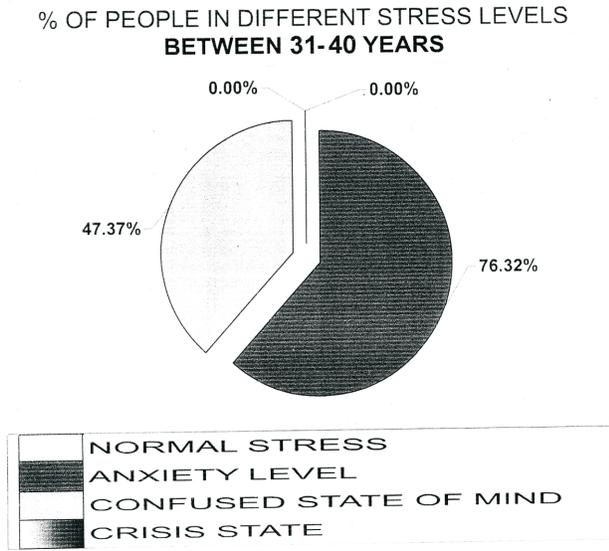


Figure- 6

Figure (5) shows that 89.11% of individuals in age group of 20-30 years are experiencing anxiety levels which is neither good for individuals nor for the society nor for the nation as a whole Also 20.79% individuals were found to be in confused state of mind.

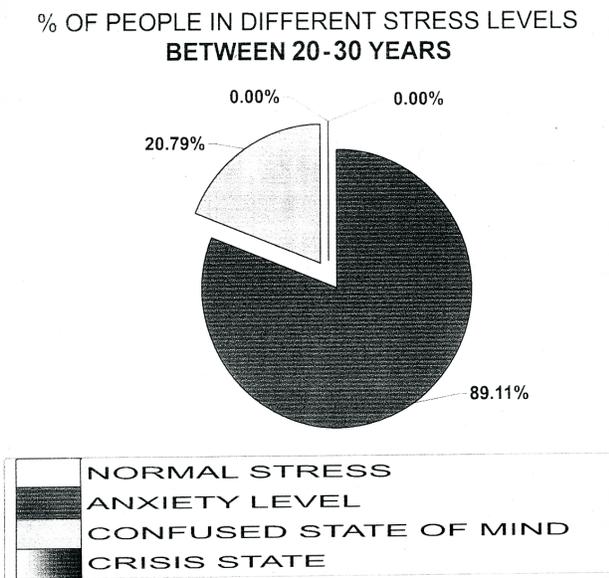


Figure- 5

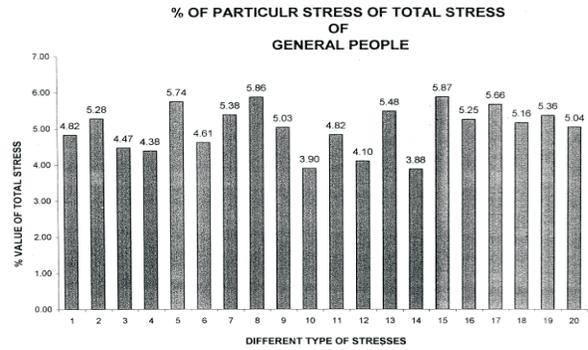


Figure- 4

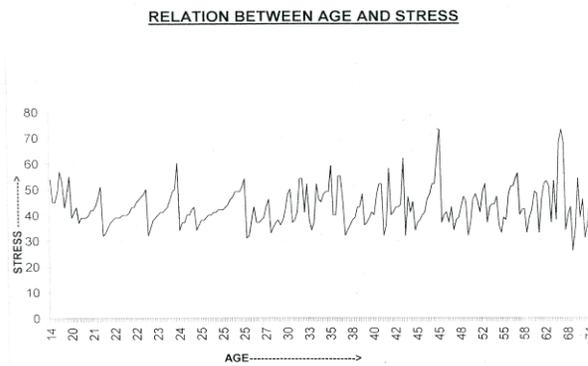


Figure- 3

CHANGE OF STRESS WITH RESPECT TO AGE

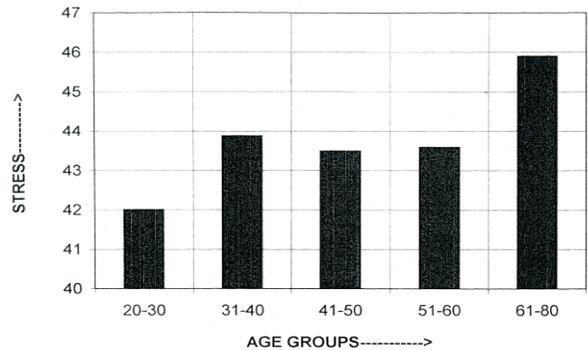


Figure- 2

CHANGE OF STRESS WITH RESPECT TO AGE

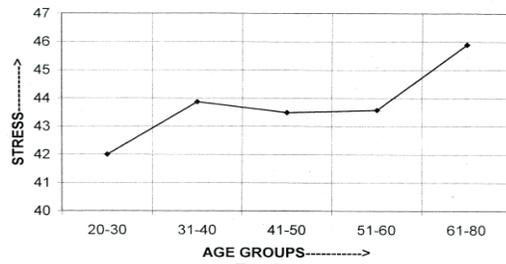


Figure- 1

ANALYSIS AND INTERPRETATION

1. Figure (1) shows a relationship between age groups and means stress levels experienced by individuals. The curve shows an gradual increase in stress levels from age group 20-30 years and maximum stress levels are experienced from 51-60 years onwards.

Figure (2) also shows the same relationship in the form of a bar chart.

2. Figure (3) shows a distribution of different age groups in relation to average stress levels of the whole population.
3. Figure (4) shows the percentage of a particular stress of the total stress of general people in relation to the whole of population.

? It was found that “Item no (14) “ people let me down always” was found to be contributing least to the stress.

? It was found that item no (8) and (15) were found to be contributing maximum to the stress levels. People were feeling more responsible for happiness of other people around them.

? Also people did not believe in expressing their anger, which actually caused a lot of stress.

4. Figure (5) shows that 89.11% of individuals in age group of 20-30 years are experiencing anxiety levels which is neither good for individuals nor for the society nor for the nation as a whole

Also 20.79% individuals were found to be in confused state of mind.

5. Figure (6) shows that 76.32% of individuals in the age group of 31-40 years are experiencing anxiety levels and 47.37% were found to be in confused state of mind.

6. Figure (7) shows that 84.62% of individuals in age group of 41-50 years are experiencing anxiety levels and 12.82% of individuals were found to be in confused state of mind.

25.6% of individuals in age group of 41-50 years were found to be in crisis stage.

7. It was found that 79.17% of individuals in the age group of 51-60 years are experiencing anxiety levels and 20.83% of individuals were found to be in confused state of mind.

8. Figure (8) shows that 60.71% of individuals are experiencing anxiety levels in the age group above 60 years confused state of mind was shown by 57.14% individuals and 7.14% of them experienced crisis and normal stress above 60.

Conclusion

The current article tries to find out the different stress distribution among

different age groups in a quantitative manner.

REFERENCES

1. David B, Posen, The Canadian Journal of continuing Medical Education. April 1995.
2. R.S. Schuler, Definition and conceptualization of stress in organizations, Organizational Behavior and Human Performance. pp 189.
3. T.A. Beehr, “The current debate about the meaning of job stress”, Journal of Organizational Behaviour Management, Fall/ Winter 1986, pp. 5-18.
4. John M. Ivancevich and Michael T. Matteson, Organizational Behaviour and Management, 3rd ed., Irwin, Burr ridge, III, 1993, p. 244.
5. Official website of Dart Mouth – Hitchcock Medical Centre, USA.
6. Cannon W.B., Bodily changes in pain, hunger, fear and race: an account of recent research into the functions of emotional excitement (2nd ed.) New York: Appleton – Century- Crofts.

ARTIFICIAL INTELLIGENCE AND ITS IMPLICATIONS FOR MANAGEMENT

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Abstract

This research paper investigates about the awareness and attitude of people about Artificial Intelligence; by asking them to rate the enablers like Automation, Adaptive Learning, Growing Internet etc. and the barriers like Technophobia, High Cost, and Emotions etc. Now these days dependency on AI has been rapidly increasing day by day, example: Robot are working in Hotel, Manufacturing Plants, and other areas also. In this paper, first we want to know that what people think about the society to become better or worse from increasing use of A.I. and Automation, whether people know about Sophia the Robot. Secondly, researcher want to know the source of information as from where the people have heard about A.I. and in which sector A.I. is coming in big way. To test the knowledge about the usage of machine learning in Smart phone applications like Predictive Text, Route Suggestions ,Voice Assistance and the apps using A.I like Siri ,Amazon , Facebook , Netflix. And also to get the final perception about the future of A.I. as whether they are excited or concerned.

KEYWORDS: *Artificial Intelligence, Adoptive Learning, Technophobia,, Emotions, etc..*

INTRODUCTION

In the past few years back, there has been an influx of software that utilize elements of Artificial Intelligence (AI). Subfields of AI such as Machine Learning, Natural Language Processing, Image Processing, and Data Mining have become important for many of today's tech giants. Machine Learning is actively being used in Google's predictive search bar, in the Gmail spam filter, in Netflix's show suggestions, and in the Cleverbot chat website. Natural Language Processing exists in Apple's Siri and Google Voice. Image Processing is necessary for Facebook's facial recognition tagging software and in Google's self driving cars.

Data Mining has become a “buzz word” in the software industry due to the mass amounts of data being collected every day. Companies like Facebook and Google collect large amounts of statistics from users every second and need a way to interpret the data they receive. Artificial Intelligence has already proven to be a useful new tool in today's technology heavy culture. Almost all of these technologies that have begun to implement facets of AI have only been around for a decade or less. Many of these aspects of AI have proven to be hugely helpful in industry, but these are merely applications of the technologies being researched. AI has greatly advanced in the last few years and there have been countless improvements within each subfield.

1.1 Background of A.I

Father of “AI’ Alan Turning wrote Computing Machinery and Intelligence in 1950. He tried to answer the question “Can machines think?” by developing a type of “Imitation Game” between two subjects. This game is called the Turing Test and it involves written communication between two subjects without being able to see, hear, or otherwise sense the other subject. The first subject, a human, will attempt to figure out if the second subject is a machine or another human simply from written communiqué. If the first subject cannot tell, or chooses incorrectly, then Turing declared that his Turing Test proved that machines can think.

However, there has been some doubt that just because a computer can respond coherently to a user questions or statement doesn't mean the computer can actually think. Does the computer really understand the meaning behind the words, or is it simply regurgitating symbols? This was somewhat addressed in Turing's paper, but more formally covered in a paper 30 years later by John Searle. In 1980, Searle published a thought experiment called The Chinese Room that addressed the idea that the machine in the Turing Test is simply throwing symbols together without actually understanding the concepts. The Chinese Room uses the analogy of a native English speaker with no knowledge of how to speak, write, or read Chinese who is given a couple of sets of rules in English. These rules correlate input in Chinese to coherent output also in Chinese, even though the

“translator” only speaks English. This question has been the topic of various research topics in Machine Learning and Natural Language Processing.

1.2 Types of artificial intelligence are as follows:

i) Weak artificial intelligence

Weak artificial intelligence (weak AI) is an approach to artificial intelligence research and development with the consideration that AI is and will always be a simulation of human cognitive function, and that computers can only appear to think but are not actually conscious in any sense of the word. Weak AI simply acts upon and is bound by the rules imposed on it and it could not go beyond those rules. A good example of weak AI are characters in a computer game that act believably within the context of their game character, but are unable to do anything beyond that. Weak artificial intelligence is also known as narrow artificial intelligence.

Weak artificial intelligence is a form of AI specifically designed to be focused on a narrow task and to seem very intelligent at it. It contrasts with strong AI, in which an AI is capable of all and any cognitive functions that a human may have, and is in essence no different than a real human mind. Weak AI is never taken as a general intelligence but rather a construct designed to be intelligent in the narrow task that it is assigned to. A very good example of a weak AI is Apple's Siri, which has the Internet behind it serving as a powerful database. Siri seems very intelligent, as it is able to hold a conversation with actual people, even giving snide remarks and a few jokes, but actually operates in a very narrow, predefined manner. However, the "narrowness" of its function can be evidenced by its inaccurate results when it is engaged in conversations that it is not programmed to respond to.

Robots used in the manufacturing process can also seem very intelligent because of the accuracy and the fact that they are doing very complicated actions that could seem incomprehensible to a normal human mind. But that is the extent of their intelligence; they know what to do in the situations that they are programmed for, and outside of that they have no way of determining what to do. Even AI equipped for machine learning can only learn and apply what it learns to the scope it is programmed for.

ii) Strong artificial intelligence

Strong artificial intelligence (strong AI) is an artificial intelligence construct that has mental capabilities and functions that mimic the human brain. In the philosophy of strong AI, there is no essential difference between the piece of software, which is the AI, exactly emulating the actions of the human brain, and actions of a human being, including its power of understanding and even its consciousness. Strong

artificial intelligence is also known as full AI. Strong artificial intelligence is more of a philosophy rather than an actual approach to creating AI. It is a different perception of AI wherein it equates AI to humans. It stipulates that a computer can be programmed to actually be a human mind, to be intelligent in every sense of the word, to have perception, beliefs and have other cognitive states that are normally only ascribed to humans.

However, since humans cannot even properly define what intelligence is, it is very difficult to give a clear criterion as to what would count as a success in the development of strong artificial intelligence. Weak AI, on the other hand, is very achievable because of how it stipulates what intelligence is. Rather than try to fully emulate a human mind, weak AI focuses on developing intelligence concerned with a particular task or field of study. That is a set of activities that can be broken down into smaller processes and therefore can be achieved in the scale that is set for it.

2. Objectives of the research paper are as follows:

- 1.) To know about the awareness of A.I. among general public, experts, business houses.
- 2.) To know about the attitude of A.I. among general public, experts, business houses.
3. Need of the study:

The Artificial Intelligence is a newer concept which will take time to adopt by the people and thus it is necessary to know the attitude, awareness among people.

4. Literature Review

PwC, in their study, demonstrate viable possibilities that are applicable today for both technologies, specifically in the retail and consumer goods industry. They have explained how AI is applied and covered the topics namely automated checkout, sales forecasting, how to optimise your energy usage, churn rate minimisation, online search recommendation and IoT in-store analysis.

AT&T FOUNRY, In their study, discuss the emerging trends and developments in AI space. They interviewed over 50 successful entrepreneurs, executives and academics leading the charge on new technologies and applications. They developed 5 bold projections that showcase how AI will impact the consumer experience in coming years. They have also done 5 bold projections on the future of AI in consumer experience

Sandeep Kumar and Mohammed Abdul Qadeer (2012), In their study aims at finding the types of home automation systems and see how these system can utilize the AI tools so as to increase the effectiveness, powerfulness etc. It also studies the implementation of AI in the 4 main categories of

service i.e., Comfortable management includes automatic adjustment of AC(air conditioning) setting, fan regulation setting etc. Remote controlling services include accessing devices from remote location and setting them ON/OFF. Efficient utilization includes running the home appliances at their optimal -setting (setting at which we get the required output at minimum cost). Last category of service includes all those services which are used for securing the home environment. They conclude that AI is emerging as a very useful and applicable technology for Home automation. On the other hand, home automation systems provide AI a vast range of Application.

According to Rodgers, 2014, British physicist Stephen Hawking has warned of the apocalyptic threat artificial intelligence (AI) poses to people, echoing concerns raised by American entrepreneur Elon Musk earlier in the year."The development of full artificial intelligence could spell the end of the human race," Professor Hawking told the BBC."It would take off on its own, and re-design itself at an ever increasing rate," he said. "Humans, who are limited by slow biological evolution, couldn't compete, and would be superseded."The scenario where computers become self-aware and begin evolving themselves at super-human speeds is sometimes referred to as "the singularity", a term also used by Professor Hawking in his work on Black Holes and the Big Bang.Musk warned last summer that AI was potentially "more dangerous than nukes".

In the second of a pair of pessimistic tweets, the boss of Tesla Motors and Space X said: "Hope we're not just the biological boot loader for digital superintelligence. Unfortunately, that is increasingly probable

Avneet Pannu(2015), In her study, aims at exploring the current use of Artificial Intelligence technologies in the PSS design to damp the power system oscillations caused by interruptions, in Network Intrusion for protecting computer and communication networks from intruders, in the medical area-medicine, to improve hospital inpatient care, for medical image classification, in the accounting databases to mitigate the problems of it and in the computer games. They have also discussed the application of AI in various other fields.

EktaNehra(2015), In her study, tries to find out how AI affects the modern life. She also identifies the various fields where AI is used such as transportation, journalism, gaming etc. She also identifies the various inventions being done in this field and the future of AI. She also mentions the threats that AI brings to human beings. She suggests that machines should be used only where they are actually required.

AnupamNarula, David Schatsky, Ben Stiller, Robert Libbey(2015), In their Article ,talk about cognitive technologies, their impact on consumer goods, their growth

in e-commerce, investments and how these technologies can benefit consumers. In a study of over 100 applications and pilots of cognitive technologies across 17 sectors, they found out that most of the applications fall under 3 main categories: enhancing products or services, automating processes, and uncovering insights that can inform operational and strategic decisions. They have also reviewed over 40 examples of consumer product companies—across staples and durables sectors—that have implemented or piloted an application of cognitive technologies to help improve functionality, simplify design, or offer services that significantly enhance the user experience. In studying these examples, they identified four core ways in which such products generally benefit consumers:

- ◆? Ease of use and convenience
- ◆ Simplicity
- ◆ Empowering consumers and instilling confidence in purchase
- ◆? Emotional effects

Stanford University, in their study, reviews AI's progress over the years, envisions the potential advances that lie ahead and describes the technical and societal challenges and opportunities these advances raise including in such arenas as ethics, economics, and the design of systems compatible with human cognition.

According to Wong,2016, AI is becoming a popular managerial tool to make company operations more efficient. Sean Captain's article "Can Using Artificial Intelligence Make Hiring Less Biased?" in the series The Future of Workdescribes how using machine learning to optimize hiring algorithms benefits managers. He describes testing two applications designed to vet candidates. The first, Fama, examines an applicant's web presence (Facebook page, newspaper articles, Twitter, blogs) to see if it contains alarming or offensive qualities while the second, Interviewed, uses automated tests to assess candidate knowledge. Both programs use different standards to knock out candidates who don't have the qualities or skill sets for the job. They also add a level of objectivity to the candidate vetting process.

AI's big data capabilities have also helped companies organize and translate customer data into predictive models of key trends.

The Role of Artificial Intelligence in People Management, 2016, With an influx of data in the HR space, AI has the capacity to provide a wealth of insights in areas including talent assessment, employee engagement, manager effectiveness, and team productivity — insights that might otherwise go undiscovered. This helps HR teams better

understand and predict workforce trends and problem areas. More importantly, it can also help solve one of the most important challenges HR teams face today — building and executing plans for improvement — by recommending specific actions to take to solve the biggest problems. Here's how it works:

By gathering data including employee engagement levels, performance information, feedback on culture, and insights on why people leave, AI can surface company- and team-specific predictions instantly. These predictions can include the types of employees that will be the most successful, the populations that are most at risk for turnover or performance issues, or the kinds of teams that will develop the most innovative solutions. AI is poised to help HR teams and managers make better, less biased decisions and help them take more impactful actions.

Vegard Kolbjørnsrud, 2016, Artificial intelligence will soon

out, we surveyed 1,770 managers from 14 countries and interviewed 37 executives in charge of digital transformation at their organizations. Using this data, we identified five practices that successful managers will need to master.

Keeping Ai At Arm's Length:

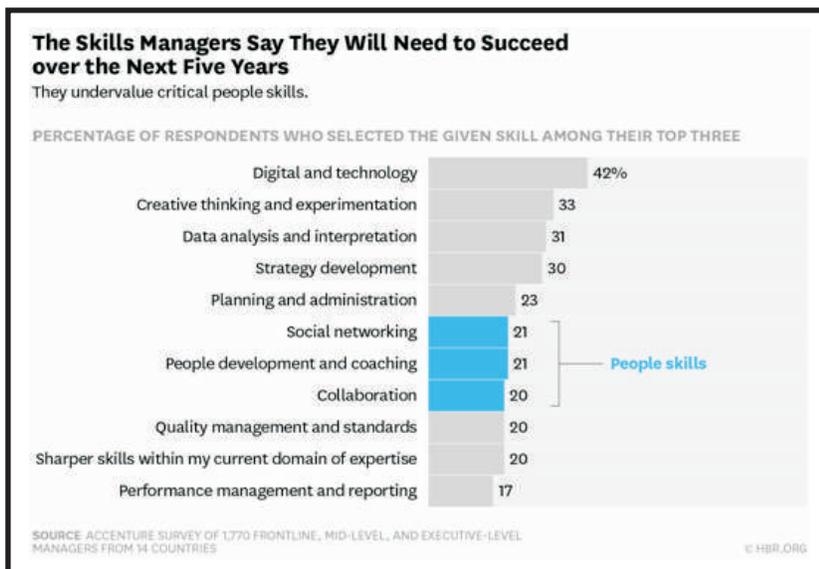
Despite the promise of artificial intelligence, Europe's managers aren't yet ready to embrace it.

The Accenture Institute for High Performance recently surveyed nearly 1,800 managers and executives across 14 countries to gauge their feelings about the emergence of AI on the job. Unlike their counterparts in the Americas and Asia Pacific, European managers are significantly more cautious about adopting artificial intelligence in their work and reluctant to regard intelligent machines as active partners in the workplace.

Basis	Europe	America	Asia Pacific
Effectiveness	29	47	51
Decision making	15	30	42
Performance evaluation	16	28	42
Accountability	18	31	42
Privacy	13	29	25
Observation	20	33	39

be able to do the administrative tasks that consume much of managers' time faster, better, and at a lower cost.. To find

Keerti. S. Mahajan, S.S.Jamsandekar, Dr. A M. Gurav (2017), in their study describe about the potential benefits associated with the application of machine learning techniques to the field of marketing management. It also describes the fundamental techniques and introduces relevant marketing fields to which machine learning approach such as Data Mining, AI, and Soft Computing techniques could be applied. Their aim at knowing the concept of marketing intelligence system for machine learning techniques and drawing and suggesting appropriate suggestions and model for effective use of AI for marketing.



The role of AI in Field Service Management: Artificial Intelligence presents a new horizon for service

excellence!: (Role of AI in field of Management,2017), We all are familiar with the concept of AI through movies. It gives a glimpse of the machine supremacy. A few years back, AI was about gaming, movies, fiction, advanced science, entertainment, and books. But, now it's getting into field service industry to optimise day-to-day operations. 80% of technical experts across the industry believe that AI enhances workforce skills and increases work efficiency.

5. Research Methodology use for data collection are as follows:

- ◆ Since few similar studies have been done especially in institutions of higher learning, there is limited empirical literature on the area Artificial intelligence and its implications for management.
- ◆ Another expected limitation is that the people might fail to give correct information on the basis of invasion of their privacy.
- ◆ There can be chances of biasness about some topic or question

Type of Research	Descriptive Research
Data type	Questionnaire, Schedules
Data Source	Primary as well as secondary
Sampling technique	Judgmental as well convenience
Sample size	100 for general public, 5-10 interviews of experts

6. Results and Discussions

- ◆ In the Enablers of A.I. “Automation” is ranked as highest while in case of Barriers of A.I. “High Cost” has been ranked the most.
- ◆ When talking about the risks, Cyber Attacks were agreed by 41% , while the robot accidents killing humans are agreed by 48%, even decreasing employment and Health Risk are marked as risky for people.
- ◆ Out of the total 100 responses 38% said that the people should proceed only when A.I is fully safe.
- ◆ 56% people believe that increasing use of A.I. and automation will make society better.
- ◆ Majority of people (73%) know about Sophia the robot, and the major source of knowledge about A.I. comes from Newspapers, apps and articles.
- ◆ Thus to conclude we can say that people are more aware about A.I. and the developers should focus on decreasing the risk of health and cyber attacks. 53% people are enthusiastic about A.I. in future.

7. Limitations of the study

- ◆ The study is limited by time and financial resources and as result the research will have to source for more financial resources and use alternative means.

REFERENCES

- ◆ Insight-outlook-europe-managers-and-artificial-intelligence. (2016). Retrieved January 30, 2018, from [www.accenture.com: https://www.accenture.com/us-en/insight-outlook-europe-managers-and-artificial-intelligence](https://www.accenture.com/us-en/insight-outlook-europe-managers-and-artificial-intelligence)
- ◆ " The Role of Artificial Intelligence in People Management. (2016, June 22). Retrieved January 30, 2018, from [www.aibusiness.org: http://aibusiness.org/the-role-of-artificial-intelligence-in-people-management/](http://aibusiness.org/the-role-of-artificial-intelligence-in-people-management/)
- ◆ ARTIFICIAL INTELLIGENCE: IMPLICATIONS FOR CHINA. (2017, April). Retrieved January 28, 2018
- ◆ strong-artificial-intelligence. (2017, September). Retrieved February 04, 2018, from [www.techopedia.com: https://www.techopedia.com/definition/31622/strong-artificial-intelligence-strong-ai](https://www.techopedia.com/definition/31622/strong-artificial-intelligence-strong-ai)
- ◆ weak-artificial-intelligence. (2017, August). Retrieved February 2018, from [www.techopedia.com: https://www.techopedia.com/definition/31621/weak-artificial-intelligence-weak-ai](https://www.techopedia.com/definition/31621/weak-artificial-intelligence-weak-ai)
- ◆ Automobile Industry in India. (2018, January 05). Retrieved January 28, 2018, from [www.ibef.org: https://www.ibef.org/industry/india-automobiles.aspx](https://www.ibef.org/industry/india-automobiles.aspx)
- ◆ Anton Korinek, J. E. (Issued in December 2017). Artificial Intelligence and Its Implications for Income Distribution and Unemployment. NBER Working Paper No. 24174.
- ◆ Columbus, L. (2017, September 10). How Artificial Intelligence Is Revolutionizing Business In 2017. Retrieved February 03, 2018, from [www.forbes.com: HTTPS://WWW.FORBES.COM/SITES/LOUISCOLUMBUS/2017/09/10/HOW-ARTIFICIAL-INTELLIGENCE-IS-REVOLUTIONIZING-BUSINESS-IN-2017/#471ADA8A5463](https://www.forbes.com/sites/LOUISCOLUMBUS/2017/09/10/HOW-ARTIFICIAL-INTELLIGENCE-IS-REVOLUTIONIZING-BUSINESS-IN-2017/#471ADA8A5463)
- ◆ Dominic Barton, J. W. (JANUARY 20, 2018 7:03 PM). A candid take on the future of AI and job automation. McKinsey Global Institute .
- ◆ Gharbawi, A. (2017, June 21). The rise of AI and RPA and its implications on employment. Retrieved January 28, 2018, from [www.processexcellencenetwork.com: https://www.processexcellencenetwork.com/rpa-artificial-intelligence/articles/the-rise-of-ai-and-rpa-and-its-implications-on-0](https://www.processexcellencenetwork.com/rpa-artificial-intelligence/articles/the-rise-of-ai-and-rpa-and-its-implications-on-0)
- ◆ Kaptein, P. (2017, June 22). GROWTH CORNER, HUMAN RESOURCES. Retrieved January 29, 2018, from [www.oracle.com: https://blogs.oracle.com/smb/hr-and-artificial-intelligence:-what-are-the-implications](https://blogs.oracle.com/smb/hr-and-artificial-intelligence:-what-are-the-implications)
- ◆ KUMAR, N. (2017, August 08). Artificial Intelligence and its Applications in Healthcare. Retrieved February 02, 2018, from [www.iamwire.com: http://www.iamwire.com/2017/08/artificial-intelligence-healthcare-2/157464](http://www.iamwire.com/2017/08/artificial-intelligence-healthcare-2/157464)

- ◆ Mortensen, D. R. (2017, August 10). Artificial Intelligence Is About To Make Us All Managers. But Are We Ready? Retrieved February 01, 2018, from www.trello.com: <https://blog.trello.com/artificial-intelligence-is-about-to-make-us-all-managers>
- ◆ PELT, E. J. (2017, August 01). Artificial intelligence in supply chain management: its development and implications explained. Retrieved January 31, 2018
- ◆ Penker, M. (2017, July 25). Artificial Intelligence & Innovation Management for Business Leaders. Retrieved February 02, 2018, from www.innovation360.com: <https://innovation360.com/artificial-intelligence-innovation-management-for-business-leaders/>
- ◆ Rodgers, P. (2014, December 03). Beware The Robots, Says Hawking. Retrieved January 30, 2018, from www.forbes.com: <https://www.forbes.com/sites/paulroddgers/2014/12/03/computers-will-destroy-humanity-warns-stephen-hawking/#2bc19d2a3e0d>
- ◆ SAM RANSBOTHAM, D. K. (2017, September 06). RESHAPING BUSINESS WITH ARTIFICIAL INTELLIGENCE. Retrieved February 03, 2018, from www.sloanreview.mit.edu: <https://sloanreview.mit.edu/projects/reshaping-business-with-artificial-intelligence/>
- ◆ Shaw, M. (2017, October 10). How Artificial Intelligence (AI) Will Impact IT Service Management. Retrieved February 04, 2018, from www.ivanti.com: <https://www.ivanti.com/blog/artificial-intelligence-ai-will-impact-service-management/>
- ◆ Vegard Kolbjørnsrud, R. A. (2016, November 02). How Artificial Intelligence Will Redefine Management. Retrieved January 30, 2018, from www.hbr.org: <https://hbr.org/2016/11/how-artificial-intelligence-will-redefine-management>.

SALES PROMOTION EFFECTIVENESS AND ITS RELATIONSHIP WITH CONSUMER'S PRICE CONSCIOUSNESS AND QUALITY CONSCIOUSNESS

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INTRODUCTION

Sales Promotion is one of the components of Promotion Mix which provides incentives, mostly short-term, to accelerate the sales of a product. As per Kotler (2008), "Sales promotion consists of a diverse collection of incentive tools, mostly short-term, designed to stimulate quicker and/or greater purchase of a particular product by consumers or the trade." It is a technique used to attract the consumers to immediately buy a particular product so as to receive the incentives offered for a short duration of time. In fact, it is among the most influential and popular components of Promotion mix (Kazmi & Batra, 2008). Sales Promotion can either be directed towards the consumer, to stimulate their purchase, or towards the trader & sales force, to stimulate their stockpiling and sale. It can be therefore categorized as (i) Consumer Sales Promotion; and (ii) Trade Sales Promotion (Stewart & Gallen, 1998). Commonly used consumer sales promotion techniques include discount, free sample, premium, bonus, coupons, buy one get 'some' free, etc. While trade sales promotion techniques include trade coupons, contests, point of sale display, demonstration, advertising allowance, etc. The purpose of Sales Promotion activities is served by influencing the Consumer Behavior.

"Consumer Behavior entails all consumer activities associated with the purchase, use, and disposal of goods and services, including the consumer's emotional, mental, and behavioral responses that precede, determine, or follow these activities". It answers the questions relating to how, why and when does consumers buy. The study of consumer

behavior also enlightens about the buying behavior and attitude of the consumers (Shamsi & Khan, 2018). The consumers may show different behaviors with respect to purchase decision based on their attitude towards price as well as quality. Based on the psychology, a consumer may show price or quality conscious behavior. Price consciousness is defined as "the degree to which the consumer focuses exclusively on paying a low price" (Lichtenstein, Ridgway & Netemeyer, 1993 cited by Alford & Biswas, 2002). While taking a purchase decision, price conscious consumer's main priority is to pay the lowest possible price for the product being acquired. However, Quality Consciousness can be defined as the degree to which consumer gives preference to quality level of the product. In this case, a consumer's priority is to get a product or service without compromising on the quality. A consumer's state of consciousness influences his or her buying behavior up to great extent. Additionally, the attitude and behavior of the consumer towards different marketing activities of the company is also influenced by their degree of price or quality consciousness. For instance, the effect of price discount on consumer is moderated by price consciousness (Alford & Biswas, 2002). It is thus, very important to study the Sales Promotion and above-mentioned aspects of Consumer Behavior simultaneously to draw beneficial inferences. The present study is focused to investigate the differences among different demographic variables with regard to Sales Promotion effectiveness. The relationship between Price Consciousness, Quality Consciousness and Sales Promotion effectiveness is also enquired.

The study starts with a brief Introduction to the topic followed by Literature Review of few credible researches in the selected field. Based on the literature review, Research Gap has been identified followed by briefly highlighting the Objectives of the study. A comprehensive Research Methodology is explained including the design & nature of the study, sources & sampling of data and the tools used for data analysis. Careful Data Analysis has been done using statistical tools listing the Key Findings followed by the Conclusion and Limitations of the study.

Literature Review

Sales Promotion

Gilbert (1999) writes 'Sales promotion is the offer of an incentive to induce a desired sales result'. As per Gupta and

Singh (2013)'Sales promotion is myopic incentives which majorly try to invoke consumer responses like product trial, brand switching, spending more, stockpiling, purchase acceleration towards a product or service, over a limited time period'.

Over the past few decades sales promotion has been in wide practice by marketers to grab a substantial market share and to increase the sales by influencing the consumer behavior (Neha & Manoj, 2013). It has indeed become a very useful tool for the marketers to stimulate the sales (Chaharsoughi and Yasory, 2012). To increase the appeal and perceived value of the product, organizations are spending increasingly on Sales Promotion activities (Alvarez & Casielles, 2005). Organizations perceive Sales Promotion as an important strategy to survive in the cut throat competition (Mittal & Sethi, 2011). Due to huge investment in terms of money as well as other resources towards Sales Promotion, it becomes inevitable to enquire about its effectiveness (Shamsi & Khan, 2017).

History has witnessed that Sales Promotion tools are utilized by marketers to attract, aware and retain customers by influencing their purchase behavior (Alvarez & Casielles, 2005). Many previous researchers (Chakraborty, Hossain, Azad & Islam, 2013; Bhandari, 2014; Alvarez & Casielles, 2005) studied the impact of Sales Promotion tools on consumer buying behavior while there are others (Salvi, 2013; Neha & Manoj, 2013; Nagadeepa, Selvi & Pushpa, 2015; Mittal & Sethi, 2011; Crespo-Almendros & Del Barrio-García, 2016; Shamsi & Khan, 2017) who enquired about the effect and impact of specific Sales Promotion tools with respect to different consumer behavior variables.

Alvarez & Casielles (2005) suggested that promotion is a very successful tool to influence consumer's decisions. The study highlighted that the promotion state of the product is well considered by the customers before making a purchase. In addition, Bhandari (2014) reveals a strong relationship between Sales Promotion and customer buying behavior. In fact, Sales Promotion is found to be more effective than advertisement in case of low involvement products (Chakraborty et al., 2013). It is a powerful tool to aware customers about brands and also to motivate them for trying new products or brands (Oly Ndubisi & Tung Moi, 2005).

Oly Ndubisi & Tung Moi (2005) accepts that there are many studies to provide deep insight into Sales Promotion effectiveness but more work needs to be done with respect to individual Sales Promotion techniques. Mittal & Sethi (2011) reveals that premium offers are most effective followed by bonus packs and price discount as Indian consumers prefer passive promotions over active ones. This argument is also supported by the results displayed by Neha & Manoj (2013). In a similar study conducted by Salvi

(2013) it was found that discount and price-offs play a significant role in shaping consumer behavior. While Nagadeepa, Selvi & Pushpa (2015) stated that Rebate & Discount highly influences consumers' impulse buying behavior followed by Loyalty Program in Apparel segment.

Price and Quality Perception

About 40% - 50% of the consumer purchases are influenced by their past price experience (Murthi & Rao, 2012). The consumers who are highly price conscious end up having a lower buying intention for products with low offer value (Alford & Biswas, 2002). Sinha & Batra (1999) observed that when perceived risk is low, consumers are more price-conscious and thereby suggested the managers to maintain a price-quality balance so that consumers may clearly witness the value added due to purchase. Consumers make purchase decisions based on price-quality comparison and in case of insufficient information for this comparison consumers take decisions on the basis of benefits drawn from products (Lambert, 1972). In line with Lambert's observations, Rakesh & Khare (2012) opined that consumers who are shopping online are value conscious rather than deal prone. It was added that different deals, offers, etc. used by online retailers doesn't seem to be interesting to online customers in front of the value they derive from the purchase. However, Peterson and Wilson (1985) were of the opinion that a universal relationship does not exist between price and perceived quality as it may differ based on product, consumer, market, etc. The price deals create base for brand knowledge which contribute to brand association, while quality perception influences attitude and behavior towards the brand (Rungtrakulchai, 2018). This deal-quality association contributes to the brand equity creation (Rungtrakulchai, 2018). Furthermore, the evaluation and processing of discount depends on the price consciousness, value consciousness, and price-quality schema along with few other psychological variables of the consumers (Lichtenstein et al., 1993).

Research Gap

Through extensive literature survey it was found that there is abundance literature studying the effectiveness of Sales Promotion. The impact of different sales promotion tools on various consumer behavior aspects is also studied by many previous researchers. The existing literature also uncovered various aspects of price & quality and how they can influence the consumer decisions. However, lack of literature is witnessed in terms of establishing or confirming correlation between Sales Promotion, Price Consciousness and Quality Consciousness. The differences among demographic variables regarding Sales Promotion also need to be studied as consumer preferences are very dynamic.

Objectives

The study was taken up to fill the research gap (mentioned earlier). Through observation it has been found that in footwear segment Sales Promotion techniques are applied quite often. So, it is very important to study it with respect to footwear segment. It is thereby intended in this research to specify the common Sales Promotion techniques used by different brands. Furthermore, the Sales Promotion effectiveness is also tried to be uncovered. The study also intends to enquire whether the footwear customers are Price Conscious or Quality Conscious. In addition, the relationship between Sales Promotion and Price Consciousness & Quality Consciousness is also sought.

Hypotheses of the Study

Based on the literature review, research gap and objectives of the study, following hypotheses have been framed:

H01- There is no significant difference across age groups in terms of Sales Promotion effectiveness.

H02- There is no significant difference across gender groups in terms of Sales Promotion effectiveness.

H03- There is no significant difference across different income groups in terms of Sales Promotion effectiveness.

H04- There is no significant difference across different qualification groups in terms of Sales Promotion effectiveness.

H05- There is no significant difference based on marital status in terms of Sales Promotion effectiveness.

As discussed in the review of literature, the importance of price as well as quality cannot be sidelined. Few researches pointed on the importance of price while others displayed the inevitable consumer requirement of quality. In addition, few researchers also stressed upon a careful price-quality combination for attracting consumers. In literature review section, it is also seen that the consumer evaluation of deals and discount also depends on the price & quality perception of the consumers. On the basis of these arguments, following hypotheses have been framed to confirm the relationship between Sales Promotion, Price Consciousness and Quality Consciousness:

H06- There is no significant relationship between Price Consciousness and Sales Promotion effectiveness.

H07- There is no significant relationship between Quality Consciousness and Sales Promotion effectiveness.

H08- There is no significant relationship between Price Consciousness and Quality Consciousness.

Research Methodology

Design & Nature

The present study is exploratory in nature which is aimed at exploring the Consumer Behavior through Price Consciousness & Quality Consciousness. It also consists of descriptive study characteristic as it is aimed at describing the relationship between selected Consumer Behavior variables (Price Consciousness & Quality Consciousness) and Sales Promotion.

Sampling

The data has been collected from 122 respondents through structured questionnaire tailored according to the objectives of the study. Initially the questionnaires were distributed to 200 respondents out of which 156 were filled and returned. On further screening, 34 filled questionnaires were found to be partially filled, thereby, dropping them from further analysis. The respondents were selected through convenience sampling in Bareilly and Aligarh district of Uttar Pradesh (West).

The sample consists of 46% males and 54% females with a great proportion aged below 35 years of age. The majority of respondents were Post Graduates (57.4%) followed by Graduates (20.5%), Intermediates (15.5%) and Doctorates (6.6%). The per annum income of 56.6% of respondents was Below Rs. 2 Lakh, while those earning between Rs. 2 Lakh and Rs. 4 Lakh constituted 23.8% of the sample followed by those earning (i) above Rs. 6 Lakh p.a (13%) and (ii) between Rs. 4 Lakh and Rs. 6 Lakh p.a (6.6%). The marital status of respondents was also enquired which displayed 82.8% as unmarried and 17.2% as married.

Data Analysis

For analysis of data SPSS have been used. The reliability of scale was tested using Cronbach's Alpha and a value greater than 0.6 was considered to be reliable, based on Nunnally's recommendation. For analyzing the differences among respondents based on demographics, independent sample T-test and ANOVA (Analysis Of Variance) were used. To find out the relationship between Consumer Behavior variables (Price Consciousness & Quality Consciousness) and Sales Promotion, Pearson Correlation was used.

Analysis & Results

Table-1 Reliability Analysis (Cronbach's Alpha)

S. no.	Dimension	Alpha
1.	Overall Scale	0.61
2.	Quality Consciousness (3 items)	0.69
3.	Price Consciousness (3 items)	0.71
4.	Sales Promotion Effectiveness (4 items) ¹	0.63

Source: Author's own findings.

Table 1 shows values of Cronbach Alpha for confirming the reliability of the scale. The Cronbach's Alpha for overall scale as well as individual dimensions is found to be satisfactory (> 0.60). This dictates that the scale used and data collected are reliable and the results can be trusted upon.

Table 1 Mean Values

S. no.	Variable	Mean Value
1.	Price Consciousness	3.106
2.	Quality Consciousness	4.238
3.	Sales Promotion Effectiveness	3.229

After deleting 2 items.

Source: Author's own findings.

The variables in Table 2 are measured on 5 point Likert-scale ranging from 1= Strongly Disagree to 5= Strongly Agree. Hence, it can now be interpreted as the consumers studied are Quality Conscious more than Price Conscious. However, their Price Consciousness cannot be ignored as it is not in the disagree range. As far as Sales Promotion effectiveness is considered, value of 3.229 is inclined towards the positive side i.e. towards the 'agree' range. Hence, it can be said that Sales Promotion techniques are somewhat effective in terms of footwear customers.

Table -3 Results of Independent Sample T-test

Variables	T value	df	Sig. (p value)
Gender X Sales Promotion Effectiveness	.040	120	.968
Marital Status X Sales Promotion Effectiveness	-.245	120	.807

Source: Author's own findings.

Table 3 shows the results of Independent Sample T-test, conducted to know the significant differences among the respondents in terms of Sales Promotion effectiveness based on gender and marital status. With the significance value much greater than 0.05 it is clear that there is no difference based on the select demographic factors.

Table-4 Results of One Way ANOVA

Variable	F value	df	Sig (p value)
Age X Sales Promotion Effectiveness	.654	3	.522
Income X Sales Promotion Effectiveness	2.324	3	.078
Education X Sales Promotion Effectiveness	1.256	3	.293

Source: Author's own findings.

Table 4 shows the results of one-way ANOVA that was applied to know if there is any difference in Sales Promotion effectiveness on the basis of age, income and education. Since the p values of all the three demographic variables are greater than 0.05 it is clear that there is no difference based on these factors.

Table - 5 Results of Pearson's Correlation

Correlations				
		QC	PC	SP
QC	Pearson Correlation	1	.005	.016
	Sig. (2-tailed)		.960	.864
	N	122	122	122
PC	Pearson Correlation	.005	1	.203*
	Sig. (2-tailed)	.960		.025
	N	122	122	122
SP	Pearson Correlation	.016	.203*	1
	Sig. (2-tailed)	.864	.025	
	N	122	122	122

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

Source: Author's own findings.

For ascertaining the relationship between Sales Promotion and Price Consciousness, Sales Promotion and Quality Consciousness & Price Consciousness and Quality Consciousness, Pearson's Correlation has been used. Table 5 shows the result of Pearson's Correlation test. It is quite evident that there is a significant relationship between Sales Promotion effectiveness and Price Consciousness with correlation of 0.203 and p=0.025 (< 0.05). The correlation obtained is positive that means increase in Price Consciousness of customers will increase the effectiveness of Sales Promotion tools and vice-versa.

Results of Hypotheses

1. H01, H02, H03, H04 and H05 are accepted with a p value (significance) of 0.522, 0.968, 0.078, 0.293, and 0.807 respectively (p> 0.05). The accepted null hypotheses convey that there is no significant difference in Sales Promotion Effectiveness among the respondents based on their age, gender, income, educational qualification and marital status.

2. H06 is rejected with a p value of 0.025 that's less than 0.05. The rejected hypothesis shows a significant

relationship between Sales Promotion Effectiveness and Price Consciousness. This result is in line with Lichtenstein et al. (1993) and Alford & Biswas (2002) which states that Sales Promotion evaluation is influenced by consumer's price consciousness.

3. H07 is accepted at $p = 0.864 (< 0.05)$. This shows that there is no significant relationship between Sales Promotion Effectiveness and Quality Consciousness. This result is however contrary to the findings of Rungtrakulchai (2018) which confirmed the association of Sales Promotion deals and Quality of the product.

4. No significant relationship between Price Consciousness and Quality Consciousness is found as H08 is accepted with a p value of $0.960 (> 0.05)$.

Key Findings

1. Sales Promotion is found effective without differences among respondents based on select demographic factors.
2. The consumers for footwear segment seem to be more Quality Conscious than Price Conscious.
3. Price Consciousness is significantly (and positively) correlated to Sales Promotion Effectiveness.
4. Commonly used Sales Promotion Techniques in footwear segment are Discount, Buy One Get One, Cash Back, Loyalty Points and In-store Display.

Conclusion

Depending on the product, consumers may show different behavior during purchase. In some cases same person can be Price Conscious while Quality Conscious in others. However, in case of footwear the consumers are found to be Quality Conscious with a slight instinct of Price Consciousness. This can be understood as they are Value Conscious. Rakesh & Khare (2012) also suggested that the consumers are value driven. Hence, it is suggested that manufacturers must consider carefully the price-quality balance to promote their product efficiently. This suggestion is quite similar to the observations made by Sinha & Batra (1999). Sales Promotion is an effective tool to

boost up the sales of a product. These tools are being used since decades and due to their wide usage it is very important to plan and execute them strategically (Shamsi & Khan, 2017). In footwear segment, it is found to be effective across different demographic factors without differences within them. Moreover, Sales Promotion effectiveness is found to be significantly correlated with the Price Consciousness. So the managers and marketers planning to use Sales Promotion must consider this and try to attract the Price Conscious customers. However, when the target customers are Quality Conscious it is not advisable to use Sales Promotion alone.

The present study gives a clear prediction that consumers are value driven and it is the Quality not the Price that drives them. Sales Promotion techniques must be designed by the marketers in a way that it does not compromise with the Quality perception of the product.

Limitations of the Study

The study conducted focused on the respondents in Bareilly and Aligarh districts of Uttar Pradesh (West) only. Both the selected cities fall in Tier-II category so the findings can be applied to the cities of Tier-II category only. Moreover, India being a culturally and behaviorally diverse country, the consumer behavior in other regions with substantially different values may differ. The study was aimed at Footwear segment only and accordingly the results may vary in other segments. Furthermore, the data has been collected from the customers of organized retailing sector and accordingly the results may vary in case of unorganized retailing sector.

These limitations open way for further/future research. Future research may be conducted by taking into consideration the present study and the limitations listed.

REFERENCES

- ◆ Alford, B., & Biswas, A. (2002). The effects of discount level, price consciousness and sale proneness on consumers' price perception and behavioral intention. *Journal Of Business Research*, 55(9), 775-783. [http://dx.doi.org/10.1016/s0148-2963\(00\)00214-9](http://dx.doi.org/10.1016/s0148-2963(00)00214-9)
- ◆ Alvarez Alvarez, B., & Vázquez Casielles, R. (2005). Consumer evaluations of sales promotion: the effect on brand choice. *European Journal Of Marketing*, 39(1/2), 54-70. <http://dx.doi.org/10.1108/03090560510572016>
- ◆ Bhandari, P. (2014). A Study on Impact of Sales Promotional Activities on Customer Buying Behavior with Special Reference to Rathi Build Mart, Raipur. *International Journal of Science and Research*, 3(5), 300-303.
- ◆ Chaharsoughi, S., & Yasory, T. (2012). Effect of sales promotion on consumer behavior based on culture. *African Journal Of Business Management*, 6(1). <http://dx.doi.org/10.5897/ajbm11.739>
- ◆ Chakraborty, R., Hossain, M., Azad, M., & Islam, M. (2013). Analysing the Effects of Sales Promotion and Advertising on Consumer's Purchase Behavior. *World Journal Of Social Sciences*, 3(4), 183-194.
- ◆ Crespo-Almendros, E., & Del Barrio-García, S. (2016). Online airline ticket purchasing: Influence of online sales promotion type and Internet experience. *Journal Of Air Transport Management*, 53, 23-34. <http://dx.doi.org/10.1016/j.jairtraman.2016.01.004>
- ◆ Gilbert, D. (1999). *Retail Marketing Management*. Prentice Hall, Harlow.
- ◆ Gupta, M. & Singh, D. (2013). A Perceptual Study of Relative Effectiveness of Tools and Techniques Used in Sales Promotion. *American International Journal of Research in Humanities, Arts and Social Sciences*, 4 (1), 30-35.
- ◆ Kazmi, S., & Batra, S. (2008). *Advertising & Sales Promotion*. New Delhi: Excel Books.
- ◆ Kotler, P. & Armstrong, G. (2008). *Principles of Marketing (12th Edition)*. Prentice Hall Inc, New York.
- ◆ Lambert, Z. V. (1972). Price and choice behavior. *Journal of Marketing Research*, 9, 35-40.
- ◆ Lichtenstein, D., Ridgway, N., & Netemeyer, R. (1993). Price Perceptions and Consumer Shopping Behavior: A Field Study. *Journal Of Marketing Research*, 30(2), 234. <http://dx.doi.org/10.2307/3172830>
- ◆ Mittal, M., & Sethi, P. (2011). The Effectiveness of Sales Promotion Tools among Indian Consumers: An Empirical Study. *Journal Of Promotion Management*, 17(2), 165-182. <http://dx.doi.org/10.1080/10496491.2011.580693>
- ◆ Murthi, B., & Rao, R. (2012). Price Awareness and Consumers' Use of Deals in Brand Choice. *Journal Of Retailing*, 88(1), 34-46. <http://dx.doi.org/10.1016/j.jretai.2011.07.001>
- ◆ Nagadeepa, C., Selvi, J. T., & Pushpa, A. (2015). *Impact of Sale Promotion Techniques on Consumers' Impulse Buying Behavior towards Apparels at Bangalore*. *Asian Journal of Management Sciences & Education*, 4(1).
- ◆ Neha, S. & Manoj, V. (2013). Impact of Sales Promotion Tools on Consumer's Purchase Decision towards White Good (Refrigerator) at Durg and Bhilai Region of CG, India. *Research Journal of Management Sciences*, 2(7).
- ◆ Oly Ndubisi, N., & Tung Moi, C. (2005). Customers behavioural responses to sales promotion: the role of fear of losing face. *Asia Pacific Journal Of Marketing And Logistics*, 17(1), 32-49. <http://dx.doi.org/10.1108/13555850510672278>

- ◆ Peterson, R. A., & Wilson, R. W. (1985). Perceived Risk and Price-Reliance Schema and Price-Perceived-Quality Mediators. In J. Jacoby and J. Olson (eds.), *Perceived Quality* (247-268). Lexington, MA: Lexington Book
- ◆ Rakesh, S., & Khare, A. (2012). Impact of promotions and value consciousness in online shopping behavior in India. *Journal Of Database Marketing & Customer Strategy Management*, 19(4), 311-320. <http://dx.doi.org/10.1057/dbm.2012.30>
- ◆ Rungtrakulchai, R. (2018). The relationship between price deals, perceived quality, and brand equity for a high involvement product. *AU Journal Of Management*, 11(2), 36-45. Retrieved from <https://aujm.au.edu/index.php/aujm/article/view/40>
- ◆ Salvi, P. (2013). Effectiveness of sales promotional tools: a study on discount, price off and buy one get one free offers in branded apparel retail industry in gujarat. *Elk Asia Pacific Journal Of Marketing And Retail Management*, 4(4).
- ◆ Shamsi, M. S., & Khan, M. A. (2017). Sales Promotion Techniques and Consumer Behavior: A Case Study of Readymade Garments. In Barua, M. K., Lenka, U., Pandya, K. V. & Sinha, P. N. (Ed.), *Proceedings of International Conference on 'Research and Business Sustainability' ICRBS 2017*. New Delhi.
- ◆ Shamsi, M. S., & Khan, M. A. (2018). Impact of Sales Promotion on Consumer Behavior: An Analytical Study of Readymade Garments and Footwear Segments. *Al-Barkaat Journal of Finance & Management*, 10(1), 94-102. <http://dx.doi.org/10.5958/2229-4503.2018.00008.5>
- ◆ Sinha, I., & Batra, R. (1999). The effect of consumer price consciousness on private label purchase. *International Journal Of Research In Marketing*, 16(3), 237-251. [http://dx.doi.org/10.1016/s0167-8116\(99\)00013-0](http://dx.doi.org/10.1016/s0167-8116(99)00013-0)
- ◆ Stewart, D., & Gallen, B. (1998). The promotional planning process and its impact on consumer franchise building: the case of fast-moving goods companies in New Zealand. *Journal Of Product & Brand Management*, 7(6), 557-567. doi:
- ◆ Wennekens S, Uhlaner LM, Thurik R. Entrepreneurship and its Conditions: A Macro Perspective. *International Journal of Entrepreneurs*. 2002;37:187-200.
- ◆ Sanga D, Kasubi J, Kisumbe L. A Challenge of Business Record Keeping for Tanzania Small and Medium Enterprises (SMEs): A Case of Madukani Ward Dodoma Region. *European Journal of Business and Management*. 2014;6:38.
- ◆ Jambulingam T, Doucette WR. Pharmacy entrepreneurial orientation: antecedents and its effect on the provision of innovative pharmacy services. *J Soc Admin Pharm*. 1999;16(1):26-37.
- ◆ Jambulingam T, Kathuria R, Doucette WR. Entrepreneurial orientation as a basis for classification within a service industry: the case of retail pharmacy industry. *Journal of Operations Management*. 2005;23(1):23-42. doi:
- ◆ Orisanaye MO. Developing Entrepreneurial Skills for Self-Reliance: A Strategy for Sustainable Development in the 21st Century. *International Journal of Socio-economic Development and Strategic Studies*. 2004;1(1&2)
- ◆ Iyer S, Doucette WR. The influence of environmental attributes on the relationship between entrepreneurial orientation and performance in independent community pharmacies. *J Pharm Market Manag*. 2003;15(2):25-46

CONSUMPTION BEHAVIOR OF SUNSCREENS AND FAIRNESS CREAMS BY INDIAN CONSUMERS

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Abstract

The objective of this study was to identify the major factors influencing the consumption behaviour of consumers in the Indian cosmeceutical market for sunscreen and fairness creams. This research determines the role of different factors for the usage of sunscreens and fairness cream product. The emphasis is on the consumers in the age group of 15 years to 50 years in some of the states of India under study. The focus will be on the awareness and susceptibility that consumers have towards the sunscreens and fairness cream cosmeceutical product types. There are questions in the mind of marketers related to the consumption of sunscreens and fairness cream products by consumers and this is the reason because of which this study is carried out to answer such questions. The data was collected through questionnaire from a sample of 250 consumers who are using sunscreens and fairness creams. The results were analysed through SPSS software by using distinct statistical tests. The study shows that the products which have herbal ingredients are more popular and are in demand. The difference between the usage of sunscreens and fairness creams by both the gender is not much and is mostly used between the age group from 15 years to 40 years. Based on the results of the research various strategic implications are drawn which will help marketers in marketing sunscreens and fairness creams to Indian consumers.

Key Words: Consumption, Sunscreens, Fairness Creams, Consumer Behavior, Influencers

INTRODUCTION

Sunscreens are also known as sun blockers and they come in various forms like lotion, gel, spray etc. are applied to the skin. These are the products which reflect the ultraviolet rays and thus help protect against sunburn. Diligent use of sunscreen can also help to slow or temporarily prevent the development of wrinkles, dark spots and sagging skin. Depending on the mode of action, sunscreens can be classified into physical sunscreens (i.e., zinc oxide and titanium dioxide, which stay on the surface of the skin and mainly deflect the UV light) or chemical sunscreens (i.e., UV organic filters, which absorb the UV light). Sunscreens are commonly rated and labeled with a sun protection factor (SPF) that measures the fraction of sunburn-producing UV rays that reach the skin. For example, "SPF 15" means that 1/15 of the burning radiation reaches the skin through the recommended thickness of sunscreen. According to Kotler and Keller (2009, 190), a consumer's behaviour is affected by three different factors: cultural, social and personal factors.

Some of the major countries where the fairness creams are in demand include India, Sri Lanka, Africa, Saudi Arabia, Malaysia, Thailand and Bangladesh. As per the opinion of

most of the dermatologists one can achieve a fairness of 20% which is maximum but not more than 20%. The main function of fairness cream is that they block the rays from the sun to enter in the skin and hence prevent the secretion of melanin. This melanin is the hormone of our body which is the major cause of darkness. In these ways fairness creams are helpful to prevent skin from tanning but we should remember that these creams can not change the natural colour of the skin. Fairness cream products are very popular in India and are in demand all over the country.

As per one study nearly 6300 tonnes of skin lighteners are sold worldwide, last year.

Advantages of fairness creams:

1. It helps in keeping the aging signs at bay.
2. It helps in decreasing the visibility of the age spots
3. Fairness creams also help the skin to heal from sun damage.
4. These creams also help in making the skin glow.

Side effects of Fairness Creams:

1. Itching
2. Skin Allergy
3. Acne

4. Thinning of skin
5. Dry skin
6. Skin cancer

Ingredients used in fairness creams:

1. Hydroquinone
2. Retinoic acid
3. Kojic acid

Now a day the fairness creams are coming with an additional ingredient which is SPF and such products are well appreciated by the consumers. If not, then one can use a sunscreen and over it the person can use a sunscreen. The food and Drug Authority is the body which regulates sunscreens and ensure that they fulfil the safety and effectiveness standards. In 2019 FDA revised certain rules for sunscreens to have more command on the safety.

Different forms of sunscreens are available in market such as in the form of lotion, cream, gels, paste, spray etc. they way or the direction for the use of sunscreen depends upon the form of the sunscreen. For example, the sunscreens in the form of spray should not be applied on the face directly. Before using the sunscreens, it is always advisable to read the label where it is written 'direction for use'

Ingredients used in sunscreens

The various ingredients which are used in preparing the sunscreens are Aminobenzoic acid, Avobenzone, Cinoxate, Dioxybenzone, Homosalate, Meradimate, Octocrylene, Octinoxate, Octisalate, Oxybenzone, Padimate O etc.

There are two different types of sunscreens which are as follows:

1. Chemical sunscreens: This is the most common type of sunscreen. These sunscreens absorbed the ultraviolet radiations before the reach the skin. In this type of sunscreens the one which are available in the form of lotion or spray are easy to use.

Advantage: It gives full protection form ultraviolet rays and its effect is immediate.

Disadvantage: If it is applied frequently it will lead to white spot on the skin.
2. Mineral sunscreens: These are also known as physical sunscreens and they act as a barrier between the ultraviolet rays and the skin

Advantage: It is easy to spread on the skin and less quantity of the product is required.

Disadvantage: It require time to show its action and may further lead to acne, hyperpigmentation etc.

1. LITERATURE REVIEW:

It has been found that there is an association for white face

skin in the countries of Southern Asia. The fairness of the skin, irrespective of the gender, gives a feeling of superiority and confidence among the people of south Asian countries. The trend of using the fairness creams among the South Asians has emerged in the last fifty years. The more refined classes of the people had pale skin and a desire to make it even whiter (James, 2011).

Das S (2013) stated that “Fairness creams have become a vital product for the Indian youths which turns the FMCG companies in increasing their overall sales due to the importance given by Indian consumers towards fairness.” According to Blanchin (2007) the relation between men and beauty care can be seen as simple relation to his appearance. Men want to feel good about them, to be in harmony and to reach a mental physical equilibrium. A consumer's buying behaviour is also influenced by his unique personal characteristics. For instance, youngsters’ consumption attitudes differ from those of elder people; re-tired people purchase differently from young married couples. These personal characteristics include a consumer's age and life-cycle stage, occupation, economic situation, lifestyle, personality and self-concept. (Kolter, et al., 2005)

In 2005, Emami created history by launching Fair and Handsome, a fairness cream for men.

“The beauty business has been overwhelmingly taken over by the herbal cosmetics industry here, as organic and ayurvedic cosmetics gain precedence over chemical concoctions,” said Shahnaz Husain, an Indian beauty expert (Janakiraman, 2011).

Watson et al., (2010) stated that “A colourcaste system that placed dark-skinned persons at the bottom, light skinned persons in the middle and Caucasians at the top” Jha (2016) stated in his research “The social pressure of feeling non-beautiful due to dark skin is leveraged by whitening cream manufacturers in India. The emphasis on technology in the skin whitening and lightening product plays an important role in creating a myth regarding the transformative power of the advertised product which promises fair skin both for desirability and empowerment.” Sarkar & Gosh (2017) Stated that “When we buy a product, we do not only procure the product but we also buy the sentiment allied with.” Jha (2016) stated in his research “The relentless impact of advertising for skinlightening cosmetics tends to capitalize on the Indian consumers’ insecurities about their skin tone and fascination with pale skin. Even though it is not possible for superficial application of fairness creams to permanently alter the natural skin colour, which is determined by melanin content of the skin, advertisements continue to perpetuate this illusion by encouraging the obsession for fairness.”

Asseal, H. (2004) conducted a study on “Marketing of

consumer goods” in Vishakapatnam. It was found that large number of respondents purchased consumer products from private retail shop followed by super bazaar & consumer co-operative store and housewife played a vital role in taking purchase decision. Personal, Social, and ideal body image should be seriously debated, which are caused by the marketing of these fairness creams (Shankar et al, 2006).

2. RESEARCH METHODOLOGY

Data collection Methodology:

Primary Data is collected through personal interview and questionnaire. Whereas secondary data is collected through various published papers, articles in magazines etc.

Sample Size: The sample size is 250.

Sampling technique used: Quota sampling

Tool used: Questionnaire.

3.1 Hypothesis

1. Hypothesis Null: There is no relationship between age group and sunscreens and fairness creams

Hypothesis Alternate: There is a relationship between age group and sunscreens and fairness creams

2. Hypothesis Null: There is no relationship between gender and sunscreens and fairness creams.

Hypothesis Alternate: There is a relationship between gender and sunscreens and fairness creams

3. Hypothesis Null: There is no relationship between herbal ingredient and sunscreens and fairness creams.

Hypothesis Alternate: There is a relationship between herbal ingredient and sunscreens and fairness creams

●3.2 Objectives

- To find out the strategies associated with the usage of sunscreens and fairness creams Cosmeceutical Products.
- To find out the role of herbal ingredient in sunscreens and fairness creams.
- To find out the association of monthly income, occupation and gender with the usage of sunscreens and fairness creams.

4 DATA ANALYSIS AND INTERPRETATION

Strategic Association of age group with Sunscreens and fairness cream cosmeceutical products

Table: 1

Almost all fairness creams in India have sunscreens/or sunblocks as an integral ingredient. As India has tropical climate with major seasons being hot, the necessity for

<u>Age Group</u>	<u>Sunscreens and Fairness Cream Cosmeceutical Products (In %)</u>		
	<u>Never</u>	<u>Sometimes</u>	<u>Daily</u>
<i>15 Years to 20 Years</i>	32.8	15.6	10.8
<i>20 Years to 25 Years</i>	12.1	18.1	16.7
<i>25 Years to 30 Years</i>	6.9	15.3	23.1
<i>30 Years to 35 Years</i>	14.7	17.6	16.3
<i>35 Years to 40 Years</i>	16.4	17.5	15.5
<i>Above 40 Years</i>	17.2	15.9	17.5

sunblocks cannot be ruled out. This might be the reason that almost ALL age group reflects the usage of the product. The market is more mass focused as age is not a criterion. Although as found in the pilot study, the price sensitivity lessens as the age group increases. This maybe because the pockets are deeper in these age groups as people start earning and grooming themselves more due to active lifestyles and future plans (based on observation studies).

Strategic Association of monthly income of consumers with Sunscreens and fairness cream cosmeceutical products

<u>Monthly Income (In Rupees)</u>	<u>Sunscreen sand Fairness Cream Cosmeceutical Products (In %)</u>		
	<u>Never</u>	<u>Sometimes</u>	<u>Daily</u>
<i>Below 10000</i>	44.8	33.4	25.5
<i>10000 to 20000</i>	6.9	5.4	5.6
<i>20000 to 30000</i>	12.9	19.8	17.9
<i>30000 to 40000</i>	19	23.2	28.7
<i>40000 to 50000</i>	14.7	14.7	18.3
<i>Above 50000</i>	1.7	3.4	4

Table: 2

In percentage terms the usage of sunscreens and fairness creams in occasional users (sometimes) is maximum below income level 1000Rs. The daily users are in the income group of 30,000-40,000. According to Pareto's principle 20% of the customers give 80% of the business is applicable in this case. Remarkably this segment will be less sensitive to price and more conscious of quality (observation and pilot study) The reasons for using these Sunscreens and fairness cream cosmeceutical products by the income group between 30000 to 40000 rupees might be because most of the consumers under this income group are young and are at the most important stage of their carrier and because of this they want to look attractive (observation). Because of this reason they use Sunscreens products to protect them from sun burns when they are in field and fairness cream cosmeceutical products to make them fairer and look attractive so as to gain the attention of the audience.

Strategic Association of occupation of consumers with sunscreens and fairness cream cosmeceutical products

<u>Occupation of Consumer</u>	<u>Sunscreens and Fairness Cream Cosmeceutical Products (In %)</u>		
	<u>Never</u>	<u>Sometimes</u>	<u>Daily</u>
<i>Student</i>	34.5	17.6	10.8
<i>Private Job</i>	25	35.4	41.8
<i>Government Job</i>	7.8	13.6	11.2
<i>Own Business</i>	23.3	17	22.3
<i>Housewife</i>	9.5	16.4	13.9

Table: 3

Majority of the respondents in private jobs were from marketing profile. Because of the marketing job they have to be there in the sun light for the whole day which can lead to problems such as sun burns, rashes etc. so consumers on private job and specially who are doing marketing job use suns cream products to protect them from sun burns. People on private job have to communicate with many people and have to attend different meeting therefore the person should look attractive, energetic and presentable. People in India (in general) are partial to fairer skin tones. Sunscreens ensure smooth and even tones which add to the attractiveness of the individual. Promotional messages have been using this psyche for various advertising campaigns. Marketers of these products can target the go getters in private companies through more comprehensive fairness treatments through associations with spas and skin care clinics.

Strategic Association of gender with Sunscreens and fairness cream cosmeceutical products

<u>Gender</u>	<u>Sunscreens and Fairness Cream Cosmeceutical Products (In %)</u>		
	<u>Never</u>	<u>Sometimes</u>	<u>Daily</u>
<i>Males</i>	63.8	53	39.4
<i>Females</i>	36.2	47	60.6

Table: 4

This shows that male consumers are not using the Sunscreens and fairness cream cosmeceutical products on regular basis because of this reason their compliance rate is not good. On the other hand the consumption is more by female consumers on daily basis. The reasons for not using the Sunscreens and fairness cream cosmeceutical products on daily basis may be that when male consumer experience the effects of the products they thought now it is over and stop using the products or they might forget to use product daily. The strategic lead is to go for developmental marketing and educate the male consumers regarding regular uses. Till date the males are more in the employed workforce and tend to take more outdoor responsibilities. Therefore targeting this segment would broaden the

customer base. Secondly studies are proving that sunburn is leading to skin cancer. This appeal can be used through surrogate advertising and PR exercises to entice all consumers who are exposed to direct sunlight for continuous stretches of time.

Strategic Importance of Herbal Ingredients in Sunscreens and Fairness Creams

<u>Level of Preference</u>	<u>Type of Cosmeceutical Products (In %)</u>
	<u>Sunscreens and Fairness Cream Cosmeceutical Products</u>
<i>Very Important</i>	39
<i>Important</i>	54.6
<i>Less Important</i>	6.1
<i>Least Important</i>	0.3

Table:5

Today consumers have a perception that products made of ingredients from the synthetic origin causes adverse effects whereas products made up of herbal ingredients have very less or no side effects (observation). Therefore it is recommended for the cosmeceutical companies to make these cosmeceutical from the ingredients with natural origin or ingredients from the herbal origin. The companies can highlight the uniqueness of the herbal ingredient (as has been witnessed by the rise in popularity of Aloe Vera). Indian companies have a huge market for differentiating their products on the basis of herbal ingredients. Alternatively companies having AYUSH base have a bright future in this category.

Strategic importance of Influencing factors associated with Sunscreens and Fairness Creams (In %).

<u>Influencers</u>	<u>Suns Creams and Fairness Creams</u>
<i>Myself</i>	23.6
<i>Male Friend/Husband</i>	8.1
<i>Wife/Girlfriend</i>	8.8
<i>Parents/Relatives</i>	19.9
<i>Doctors</i>	1.8
<i>Parlours/Salons</i>	9.2
<i>Advertisements</i>	13.1

Table: 6

The hierarchy of effects model can be verified from the above response as the cognitive part can be assured by self, spouse, family members and beauty salons. So these can be used for word of mouth publicity and below the line activities. The affective part is through advertisements which second the opinion given. The major influencer that is the doctors affect the effective phase that is the action phase. Similarly for acne products the major influencers are doctors followed by advertisements. Respondents of both

the sexes are not influenced by their spouses or male/female friends. The reason for this could be that since acne affects the self-esteem of individuals, they did not feel comfortable in sharing of woes with their counterparts. For specialized products companies can directly contact skin care specialists/ dermatologists. The marketing mix should focus more on a specialist focused promotion mix.

For sunscreens and fairness creams the major influencers are self-followed by parents/relatives. It means the decision of using a product is done within the house. Advertisements should focus more on family get together and traditional advice in their advertising messages. To boost sales locally some below the line activities can be undertaken locally.

Likelihood Ratio Tests and Model Fitting Criteria for Anti-Aging, Anti-Wrinkle, Anti Acne, Sunscreens and Fairness Cream Cosmeceutical Products.

Effects	For Sunscreens and Fairness Cream Cosmeceutical Products	
	Model Fitting Criteria	Likelihood Ratio Tests
	-2 Log Likelihood of Reduced Model	Significance
<i>Intercept Only</i>	1.225E3 ^a	
<i>Age Group</i>	1.239E3	0.001
<i>Gender</i>	1.247E3	0.000
<i>Highest Qualification</i>	1.234E3	0.199
<i>Occupation</i>	1.253E3	0.000
<i>Monthly Income</i>	1.250E3	0.006
<i>Herbal Ingredients</i>	1.235E3	0.138

Table: 7

The above table (table 7) reflects the level of significance of age group with cosmeceutical product categories (anti-aging, anti-wrinkle, anti-acne, sunscreens and fairness creams) scientifically also it has been proved that biological aging is reflected in Dermaceutical symptoms. In the younger age group (15-30) hormonal changes induced acne eruptions and general oiliness of skin. In later years, the depletion of subcutaneous fat results in wrinkle formation. This is reflected by the intercept of 0.735 between anti-aging and anti-wrinkle cosmeceutical products and the age group of consumers. In the older age problems related to aging appears among which wrinkles, black spots etc. are very common and hence there is an increase in the demand of these anti-aging and anti-wrinkle cosmeceutical products. As people become older there is also a change in their behavioural activities which leads to attraction of older age group people towards the anti-aging and anti-wrinkle cosmeceutical products. The use of anti-ageing/anti-wrinkle cosmeceutical products is incident in the 20-25 age groups as well (3%). The consumption increased from the age group 30-40 significantly. This shows a more proactive

user base that is using these creams to check the ageing process. The differentiation can be more psychographic wherein people are initiators and take charge of their own lives instead of going with the flow. The commercials of these cosmeceutical products also play an important role as the older age group consumers are mature enough and it's not easy to make them satisfy easily when compared to younger age group consumers. The commercials of the anti-aging and anti-wrinkle cosmeceutical products should reflect the effectiveness of the products. The younger age group has little or no use of anti-aging and anti-wrinkle cosmeceutical products.

India has the largest youth population in the world; around 66 per cent of the total population (more than 808 million) is below the age of 35 as per. Almost all fairness creams in India have sunscreens/or sunblocks as an integral ingredient. As India being a tropical region with major seasons being hot, the necessity for sunblocks cannot be ruled out. This might be the reason that almost ALL age group reflects the usage of the product. The market is more mass focused as age is not a criterion. Although as found in the pilot study, the price sensitivity lessens as the age group increases. This maybe because the pockets are deeper in these age groups as people start earning and grooming themselves more due to active lifestyles and future plans (based on observation studies). The researcher statistics reflect that there is huge potential in the market for growth as almost 65% of the market can be further tapped. This is in line with the worldwide trends as an ageing product are on the growth trajectory of Product Life Cycle (PLC).

As reflected from the above table the intercept between the gender and sunscreens and fairness cream cosmeceutical products is 0.022. Although the male respondents are 44.2% above but this is a significant reflection of the changing mind set. Traditionally the concept of Tall Dark and Handsome (TDH) is gradually shifting to Tall Fair and Handsome (TFH). This is a sizeable market opportunity which has seen major players like Nivea, Emami, HUL jumping the bandwagon. Males are also becoming more and more conscious towards their look's that is why the difference is not a big one and it might be estimated that in near future there will be no difference in the consumption of cosmeceutical product by consumers of different genders. Because of this reason we found that more and more cosmeceutical companies are introducing new cosmeceutical products into the market which are specifically meant for male skin. The cosmeceutical companies introduced a new concept that male's skin is tough as compared to female skin and because of this reason it needs special attention which cannot be fulfilled by the cosmeceutical products designed for female skin. Hence, they are introducing new cosmeceutical product especially for men skin and the cosmeceutical companies are targeting this market. Two significant strategies in vogue are: first,

fairness for men and second, differentiated products for different genders.

Now education and its relationship with the consumption of sunscreen and fairness cream cosmeceutical product. The intercept between the education and the sunscreens and fairness cream cosmeceutical products is 0.009 (significant). The employability of people with graduate and post graduate degrees is more. These products as shown by previous tables are used by people in the 30,000-40,000 income groups. For marketers, the advertising appeal and promotional message can be customized for a more literate audience. Here rational appeal would justify the ends much more than emotional appeals. The products can be sold on the basis of lifestyle segmentation. Since the regular users are youth (15-20 age group) the marketing promotion can be on the basis of social acceptance, bonding and camaraderie.

The occupations of the consumers also have an impact on the consumption of the cosmeceutical products but not to a greater extent. From the table it can be seen that the intercept between sunscreens and fairness cream cosmeceutical products is 0.028. Individuals have to keep themselves properly groomed as this can be critical for their profession. In private companies the environment is more suave and contemporary than public sector companies (seen so far but environment is changing in public sector at a slower pace). Entrepreneurs and businessmen have to sell their candidature as well as their business. Cosmeceutical companies focus on the occupation of consumers in their advertising now a day.

Today consumers have a perception that products made of ingredients from the synthetic origin causes adverse effects whereas products made up of herbal ingredients have very less or no side effects (observation). Therefore it is recommended for the cosmeceutical companies to make these cosmeceutical from the ingredients with natural origin or ingredients from the herbal origin. The intercept between the cosmeceutical product types and the herbal nature is reflected as 0.01 for sunscreens and fairness cream cosmeceutical products. The demand for the herbal cosmeceutical products is increasing by the consumers as they feel that herbal cosmeceutical products are having lesser side effects and more accurate results. The companies can highlight the uniqueness of the herbal ingredient (as has been witnessed by the rise in popularity of Aloe Vera). Indian companies have a huge market for differentiating their products on the basis of herbal ingredients. Alternatively companies having AYUSH base have a bright future in this category.

4 FINDING AND RESULTS:

●? Mostly consumers within the age group of 25 years to 30 years they use more of sunscreens and fairness creams. One of the reasons is that they are young and what to look attractive. The other reason is that they are doing job and it's

a requirement of the job to look young and energetic.

●? Most of the consumers who are having in come between 30K to 40K they are using these sunscreens and fairness creams more as compared to other income group consumers. The reasons might be because most of the consumers under this income group are young and are at the most important stage of their carrier and because of this they want to look attractive (observation).

- The consumption of sunscreens and fairness creams are more by females on a daily basis.
- Those who are not using these products regularly their compliance rate is not good.
- Consumers are more concern about the composition of the product these days.
- Consumers irrespective of their gender prefer those sunscreens and fairness creams which are made up of herbal ingredients.
- Consumers feel that those products which are made up of herbal ingredients are free from adverse effects and their results are also very good and long lasting.
- For sunscreens and fairness creams the major influencers are self-followed by parents and relatives. This means they see what the trend is going on their own family and follow their elders.

1. CONCLUSION:

This study is carried out to find out the consumption behavior of consumers for sunscreens and fairness creams cosmeceutical products. In today's world the cosmetic industry is growing rapidly and hence, the market for sunscreens and fairness creams is also projected to increase quickly. India is a large country and the climatic conditions in India is different at different places. Not only this but also the population of India is too much, and these two conditions leads to a very big and potential market for companies producing sunscreens and fairness creams. People of India are becoming more conscious about their health and this is an indicator for the high demand of such products in Indian market. Though there is economic crisis globally but there are some reasons because of which these products are still in demand by the consumers. Some of those factors are the awareness among females and they are becoming independent these days. Along with this another major factor for the demand of such products is the appearance at the work place. Last but not the least we can say that the demand of sunscreens and fairness creams is still at a high level and companies producing these products need to keep in mind the behavioral aspects of consumers.

REFERENCES

- ◆ Asseal, H. (2004) “consumer behavior: a strategic approach”, journal boston, Charles Hartford
- ◆ Blanchin, A., Chareyron, C. & Levert, Q. (2007), The customer behavior in the men's cosmetics market, School of Business and Engineering, University of Halmstad.
- ◆ Das S. (2013). “Consumer’s Perception on Fairness Cream in India”, Journal of Research, Extension and Development, 1(11) 64-66. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2592358
- ◆ Janakiraman, S 2011, Growing Profile of Cosmetics Industry in Asia-Pacific <<http://www.biztechreport.com/story/1457-growing-profile-cosmetics-industry-asia-pacific>>
- ◆ Jha B. (2016) “Representation of fair-skin beauty and the female consumer” IOSR Journal Of Humanities And Social Scienc, 21(2) PP 01-12. Retrieved from <http://www.iosrjournals.org/iosr-jhss/papers/Vol.%2021%20Issue12/Version8/A2112080112.pdf>
- ◆ Kotler, P. et al. (2005) Principles of Marketing. 4th European edition. Essex, Pearson Education Limited.
- ◆ Kotler, P. & Keller, K. L. 2009. Marketing Management. Pearson International Edition. 13th edition. Pearson Education Inc. Upper Saddle River.
- ◆ Watson S, Thornton, C. G, & Engelland, B. T. (2010). “Skin color shades in advertising to ethnic audiences”, The case of African Americans. Journal of Marketing Communications, 16 (4), 185-201.
- ◆ Sarkar & Gosh (2017) “ETHICAL NORMS IN FAIRNESS CREAM ADVERTISEMENT”, Global Media Journal – Indian Edition, 7(2) Retrieved from <http://www.caluniv.ac.in/global-media-journal/Comm-Nov-2017/C1.pdf>
- ◆ Shankar, P.R. Giri, B.R. and Palaian, S. (2006), Fairness creams in South Asia, A case of disease mongering? [Online] Available: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1518681>,



THE EFFECTIVE INTEGRATION OF CORPORATE SOCIAL RESPONSIBILITY AND HUMAN RESOURCE DEVELOPMENT- THE NEED OF THE HOUR

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Abstract

Today's business organizations are functioning and developing into the dynamic and rapidly altering business environment. Changing demands are exerting an ongoing pressure of inculcating continuous development into their organizational systems. This development has welcomed another façade of business environment and that is Corporate Social Responsibility (CSR). During the last few decades business environment is encountering the heightened discussion on the façade of corporate social responsibility (CSR). It has become an integral part of organization's business practices. Every aspect of business is impacted by CSR activities amongst which the financial domain is the most focused upon. This prevailing concept CSR is limited till the accepted standards, whereas the much talked about paradigm shift in dynamism of business environment demands an uninterrupted impact of CSR on the development of the most important organizational resource i.e. Human Resource. This study is an attempt to understand the development of human resource skills catering to the need of organizational CSR's activities. It is vital for the organizations to actively engage its employees in the social responsibilities so as to positively influence the development of employees. There by strengthening the organizational CSR culture.

Keywords: *Corporate Social Responsibility, Skill Development, and Employee Engagement.*

INTRODUCTION

Corporate social responsibility (CSR) is a known term in business environment. It has become an integral part of business activities. Over the last decade business houses have increasingly taken interest in enhancing the domain of their CSR activities. Acc. to a report published by KPMG in the year 2011, almost two-third of the biggest firms in industrialized countries have published a report on CSR activities. These activities entail organizational obligations to its stakeholders and society allowing organizations to exist in a symbiotic relationship with their environment. Organizations integrate the society and environment concerns into their business operations along with maintaining the interaction with their stakeholders. Concept of corporate social responsibility is based on the Principle of Sustainability, which states that organizations should make decisions not only on the basis of financial aspect but also on the impact of their activities on society and environment. The growing awareness about CSR in corporate world has inclined the interest of business houses towards indicating their CSR activities in promoting their market visibility. Thus, the dedication towards CSR activities reflects in the annual audits, profit statements, as well as in the branding of organizations. Therefore, the financial and marketing aspect of CSR is explained in such a way that it reflects the relation between CSR activities and growth of organization.

The literature on corporate social responsibility majorly revolves around the impact of CSR activities on the financial interest of stakeholders and the market visibility of organization. Thus, a number of researches are manifested in order to reflect this relationship while detailing the one-sided interest of corporate houses. These details about the restricted acknowledgement of CSR activities by the organizations limited only till their marketing and financial performance neglecting the obligations towards organizational stakeholders involving its customers and employees. However, human resource of any organization has a vital role in aiding the organization in achieving its CSR objectives. Human resource managers are in a state that they can play a vital role in making their organization socially and environmentally responsible firm. Human resource manager's posses the tools and strategies that can influence employee commitment and engagement to successfully accomplish CSR objectives (Strandberg, 2009). The social component of CSR indicates towards proactive development of human resources through training, providing quality-working conditions, employee participation also by protecting their rights (Crifo and Forget, 2012). The concept of CSR is the alignment with sustainable development, which gives rise to the question that why the firm should engage in this, and what is the probable impact of CSR on firm? So, acc. to Friedman in

1970 as quoted by Crifo and Forget, 2012, businesses have the sole responsibility of increasing profitability and acc. to Benabou and Tirole in 2010, CSR is the response to market and redistributive imperfections so as to achieve this profitability status. As human resources various business processes and key systems underpinning effective delivery. Thus it is imperative to nurture high performance CSR culture and foster CSR ethics in tuned with manpower development (Strandberg, 2009). Thus it is imperative to establish an effective alignment between the skill requirement of CSR objectives and employee skill set. Therefore the present study aims at understanding the need of an effective alignment of employee's skills according to the organizational CSR's activities.

Theoretical concept of Corporate Social Responsibility

Concept of corporate social responsibility can be traced way back from 1917 when Henry Ford incorporated the concept of CSR in the aim of Ford Motor Company and initiated its corporate social responsibility activities. Since then various researches and studies have caught attention regarding the concept of CSR. Many of them believe that Henry Ford's idea of CSR was from business practice perspective, whereas from research perspective Bowen's Social responsibilities of the business in 1953 is considered to be the pioneer work establishing relationship between organizations and society. Along with effectively maintaining this relationship business houses are also required to maintain their survival and for the same sustainable growth is the key. In the current dynamic business environment and globalized economy CSR is considered to be an important façade aiding sustainable organizational growth. Promoting organizational CSR activities helps in shaping up good company policies leading the organization towards sustainable growth striking a balance between economic, social and environmental growth objectives (Gorski, Forciu and Croitor, 2014). Acc. to Bowen it is imperative on organizations part to be aware about business ethics to achieve long-term success. Thus this aspect of CSR represents the display of desired economic growth with promptly encouraged societal and economical activities. Various other researchers viewed CSR based on their wide-ranging researches and perspectives. CSR being a complex concept is interpreted differently based on the operating environment, economic network and involved stakeholders. In 1996 Mohr, based on varying perspectives about CSR categorized the CSR definitions into two types as multi-dimensional definitions and definitions based on social marketing. Multi-dimensional definitions entail the social responsibilities of organizations whereas, definitions based on social marketing concept explains the impact of CSR on society. The foundation of these definitions is the impact of

organizational activities on the society. On the other hand, few researchers extended the concept of CSR to the interest of organizational stakeholders as well and definitions based on stakeholder perspective were coined. Freeman in 1984 first represented the stakeholder perspective of CSR. According to him, business organizations have responsibilities towards all the individuals who influence and get influenced by the business. Organizational success and survival depends upon how effectively the needs of all the stakeholders are been fulfilled. Freeman categorized organizational stakeholder as primary and secondary. Customers, employees, shareholders and govt. are considered as primary stakeholders, whereas community, NGO's, are considered as secondary stakeholders (Bondy, Maten and Moon, 2008). Organizations are required to adapt their strategies based on the essentials of organizational stakeholders thus an effective alignment between organizational strategies and stakeholders needs direct the path towards CSR initiatives. Likewise, Khoury and Rostamani (1999) explained the relationship between organization's survival and stakeholders, customers, employees its suppliers and investors needs. This definition explained the corporate responsibilities toward society by performing community service, towards employees by strengthening relationships, creating jobs along with maintaining the level of financial returns. CSR when approached from shareholders viewpoint details the factors stimulating CSR activities, organizational economic performance along with maintaining employee's confidence and organizational unanimity. Hence when organization aligns the attainment of their CSR objectives with that of employee morale achieves desired economic performance. Researchers like Hopkins (2003) also believed the same and pointed out towards the attainment of CSR objectives by maintaining the level of stakeholder's moral so as to earn profit and also to maintain stakeholder's standard of living.

Business organizations are a complex web of stakeholder's relationship within the organization and with that of society. Acc. to Maignan, Ferrell and Ferrell (2005), the top management always struggles to maintain these relationships and to establish an effective alignment with organizational CSR initiatives. CSR obligations make the businesses accountable towards society, whereas viewing it from stakeholder perspective allows these business houses to be responsible towards shareholders as well. Thus, the horizon of CSR also involves the social well being of all the individuals with whom the operating business interacts. As stated by McWilliams, Siegel and Wright in 2006, that CSR is an organizational responsibility beyond any law and firm's interest to safeguard the social interest of people involved. Stakeholder oriented approach of CSR is an

attempt on organizational façade to create an environment wherein stakeholders relationship with internal and external organizational environment can be strengthened. The reviewed literature primarily discussed about the economical, environmental contribution of CSR towards organizational growth. Also the researchers explaining the stakeholder perspective of CSR described the upliftment of social wellbeing of stakeholders impacting the business, whereas skill development of employees is not much stressed upon. Thereby the study identified the neglected façade of alignment of employee skill development with that of CSR activities as the need of the hour.

Alignment of CSR and Employee Development- The need of the hour

Over the past decade with growing attentiveness and moreover with govt. obligations business houses have generated a great deal of interest in corporate social responsibility. The boosting market pressure of increasing corporate wealth and successful survival has overshadowed the broader idea of organizational success (Ali,Rehman,Yousaf, 2010). Though the concept of corporate social responsibility is laid on the foundation of maintaining an effective balance between the relationships of business with that of society. However reviewing the existing literature on CSR it was observed that previous researches have echoed the impact of CSR activities on organizational financial performance, market visibility, and economical growth. Thus, CSR is primarily considered as a management strategy in order to maintain organization's reputation. As CSR ostensibly impacts a firm's financial image and also take into the account of impact of firm's action on society, therefore previous studies of CSR are embedded in the economical and organizational contexts (Arevalo and Aravind, 2011). Referring to the organizational context the stakeholder perspective of CSR extends to its customers, employees, shareholder's and society.

Business houses are continuously trying to cope up with the challenges of corporate social responsibility and are equally concerned with safeguarding the interests of stakeholders. With all these efforts taken corporates are required to understand that CSR is simply not a set of activities planned and implemented for financial and marketing objectives. Rather human resources drive it so it should aim towards the development of the same. Acc. to Dirani,Jamali and Ashleigh in 2009, HR and CSR are very strongly connected with each other. HR plays a critical role in amalgamating CSR activities with that of organizational culture. HR with its knowledge and skills execute organizational strategies, maximize business efficiencies and operationalize the dimensions of CSR by engaging stakeholders. Thus, it is

imperative to understand CSR as an important human resource tool and not only to acknowledge the efforts of HR, rather also to offer them a platform to develop their skills aligned with CSR activities (Mirvis,2012). In this regard a report in 2015 by Chartered Institute of Personnel and Development (CIPD) elucidated the link between CSR activities and employee development showcasing the association between learning & development of employees and CSR activities appreciably impacting personnel and organizational growth. Acc. to the report, CSR when appropriately introduced in organizational culture, it allows the shift in employee's expectations and attitudes. Volunteering to CSR initiatives creates a shift in employee perspective with enhancement in skill set along with following benefits (Griek, 2017):

Greater appreciation for the community: volunteering to CSR activities permits employees to understand the impact of their decisions on other employees and the community. This facilitates employee growth by accentuating their thinking and to develop situation-fit decisions. For ex: Fedex encourage its employees to extend their support and to provide idea to renovate children centers, one of company's CSR initiatives. These way employees are given opportunities to create and think innovative ideas rejuvenating their skill sets.

Increased Organizational Citizenship: organizations adopting best CSR practices allows their employees to think that "their employer is doing the right thing", thus employees are more likely to get engaged in behaviors, finding alternative ways of developing skills leading to supreme job behavior.

Increased Creativity: when organizations express their interest and passion towards CSR, it may inspire employees to think new and practical ideas so as to develop their creative problem-solving skill sets.

Increased Commitment and Retention: developed organizational citizenship employees tend to showcase enhanced retention and commitment of employees with that of organization. This raised level of commitment is the resultant of various positive attitudes reflecting the developed competencies of employees.

The CSR activities planned and aligned according to the development of employees, influence their growth encompassing skill development leading to the overall impact on employee commitment and loyalty towards their work place. Mirvis in 2012 illustrated that CSR positively impact employee's motivation, aids them to understand their identity and provides a sense of meaning to their respective jobs with defined purposes. Employees with a demarcated purpose and the extent of their involvement with the job tends to be more engaged eventually they look

ways to develop their competencies and skills (Mishra, 2018).

In this regard, Mirvis explains three different approaches namely;

Transactional approach: where program are commenced to suffice the needs and interests of employees volunteering to socially responsible efforts of organization. This approach establishes a good fit between employee interests with that of his/her organization's that according to various researchers translates into job satisfaction, high commitment and low turnover. The way cafeteria-style benefit program allows employee to chose what he/she wants, transactional approach allows company to provide tailor-made customized CSR options to different segments of employees, involving the option of not being involved at all.

Relational approach: the above-discussed transactional approach is targeted at "me"- the individual employee, whereas relational approach shifts the focus towards "we"- the employee community. It depicts the mutual commitment of organization and employees towards social responsibility. Employees are engaged in all staff volunteer days where in the company, employees embrace a shared vision, mission, and values focused towards CSR.

Developmental approach: this approach depicts the scope of engagement through CSR by engaging organization, its employees and other stakeholders in the corporate ecosystem. Developmental approach shifts the thrust of CSR of an organization towards commercial space and gets employees interacting with stakeholders to enhance its impact on business and society.

The consideration before adopting any of the above-discussed approach has to be in depth as in "Who" owns the CSR agenda in a company. For instance, in salesforce.com, employees decide the CSR portfolio and lead the volunteer and community-giving program. Further they are free to devote their 1% to a volunteer activity of their choice. The platform of this approach is based on strengthening the decision-making of employees along with effective time-management in their work. On the other hand, Timberland has adopted a hybrid in which employees choose how to use their 40 paid hours of service, company has also sets the direction for annual service days.

CSR and Employee Development- The Monetary and Benefit Perspective

Various studies have revealed employee's interest of engaging themselves into CSR activities is not only limited in U.S but also in India, South Africa and China. Often employee engagement is discussed on the premise of Maslow's hierarchy need initiating from basic to ranging till

higher order needs. HR programs dominated by job enrichment and employee involvement primarily fit into the needs hierarchy of educated and well off workers eventually contributing towards behavioral engagement. In today's environment CSR is positioned into same manner. Involving into CSR activities suffices the ego needs of educated employees those who are sensitive towards the societal issues as well. It has been explained by various field studies that engaging employees in community service gave them an opportunity to support each other strengthening organizational commitment. As pointed by Grant (2007), through relational job design, which allows employees to express their prosocial motives through work, permitting them to make a change in other people's life. Acc. to need-based model many consulting firms, recommend firms to offer tailor-made CSR offerings to their employees. Firms should keep a regular check on the employee satisfaction level at each level of need hierarchy along with providing a mix of company benefits and incentives so as to boost employee satisfaction. However, this assessment doesn't apply to everyday work and circumstances making high-order needs difficult to go even in the dominance of monetary incentives.

According to the relational approach the self-concept of employees amalgamate with their identity into different role. In this regard, a question arises that "why would an organization concern itself with and seek to activate people's identity as an citizen of community, society?" So the answer lies in the fact that when employees explores their organization welcoming their full range of interests and aspirations including a personal desire to towards CSR. In this relational context CSR initiates a dialogue between individual and corporate identity shaping organization's culture and its employee. Employees serve as brand ambassador whose aspirations to live and work are fulfilled through their organizational policies. The commitment of organizations towards society also initiates the innovation from employee side as and when they start questioning sustainability and ethicality of the initiatives. Employees with uplifted innovation thought, extend their reach into CSR activities through various provisions it enhance their engagement towards their work as well. The achieved employee engagement through CSR is able to produce social and business value through volunteer service and through jobs, relationships and services. In this regard, organizations ensure towards the confirmation of CSR standards. Regular corporate social audits look into the matter of workplace composition and practices. Regardless of all the prevailing facts the scarce market demand and perceived rewards accounts for the fact that organizations don't pay much attention towards CSR attained employee engagement. However increased number of employee are

interested to get engaged through their organization's CSR efforts is the key factor behind enhanced emphasis given to voluntarism and expansion.

Guide to integrate CSR into HR Management

Human resources professionals are the most tuned up resource with CSR activities of the organization. They are in a situation to establish a business system fostering CSR alignment focusing both on people as well as business benefits. However, a checklist is always required to be followed by HR professionals seeking a platform to nurture CSR into their organizational culture.

Vision, Mission, Values and CSR strategy development- In order to successfully inculcate CSR into the organizational system a clearly articulated vision, mission and values is required. HR practitioner could initiate the development of all these three pillars and employees along with other stakeholders should be involved.

Employee Code of Conduct- As HR is responsible to formulate employee code of conduct. Therefore they should be designed principally, so as to avoid creating any space for fraudulent activities.

Workforce Planning and Recruitment- In a CSR oriented organization; manpower planning should be based on the required skills and knowledge base to cater society and environmental expectations. It should be during the recruitment of employees, as they should be selected by developing a CSR perspective into employee value proposition.

Training and Development- Employees should be given an overview regarding organizations CSR values and propositions. Company should measure its CSR performance and accordingly schedule employee training in the areas needed development.

Compensation and Performance Management- It is the most critical program of HR. Human Resource practitioners should understand "you get what you pay for". The reward and benefit program of the firm should be aligned in accordance to not only the financial targets but also according to sustainability factors.

Change Management- Keeping faithful to the CSR values change management is critical. Developing and changing the mindset accordingly for sustainability. It should be realized that employees are in differing state of mind at each stage of CSR hence it should be tackled carefully.

CSR Policy and Program development- HR is in a position to drive policy development and program implementation that supports CSR initiatives. So focus should be on the fact of organizational growth as well as organizational CSR activities growth.

Employee Communication- Every CSR strategy should be communicated to the employees so as to convey the program, expectation, objectives, benefits. HR can communicate CSR program with help of success stories as well.

Measuring Success- In order to successfully manage the performance of CSR programs it is vital to measure the performance first. Finally once the objectives are achieved its time to let the employees enjoy their and organizational success.

The Trends and Drivers

Various evidences show that CSR can be impactful in employee retention, motivation and developing staff. A CSR study of human resource practitioners conducted by Society of Human Resource Management in the years 2006, explains that CSR is important to employee morale (50%), loyalty (41%), retention (29%), recruitment of top employees (21%) and productivity (12%), (SHRM, 2007). HR leaders across the globe are developing and implementing incentive and appraisal systems that reflect sustainability as well as hiring personnel that embodies values (Lockwood, 2004, as quoted by Strandberg, 2009). In order to make CSR a success a foresighted vision should include commitment from senior management, engaged staff and the provision of skills, tools and incentive. Employee participation is found to be the key to the success of CSR initiatives for the same adequate development is the imperative (Redington, 2005). Organizations engaged with effective CSR practices, with good CSR reputation are benefitting from stakeholder view that an organization's behavior and presumably that of its consistently people is aligned with CSR values. Leading organizations are realizing that sustainable HR management is the central to the objective to realizing the fact that CSR can be nested in the organization's employee brand. As quoted by Ashridge, 2008 extracted from the report, *Developing the Global Leader of Tomorrow*, that a range of human resource levers are imperative for developing organizational CSR capabilities: developing these knowledge and skills through leadership development program, career development planning, succession planning, performance management and incentive systems.

Employees are the most important and key driver of any organization. They need to be integrating CSR through the firm aiding the attainment of firm's CSR objective alongside adhering to its CSR objective in alignment with its strategic business direction. Before all this it is indeed important that fulfillment of employees basic employment needs should be met so as to call them for help the organization achieve its CSR goals. Acc. to Susan Meisinger, President and CEO of SHRM, the global trend towards assessing the social and

environmental impact of business decisions will result in more organizations incorporating CSR practices in their business strategies. With an increase in these activities, HR professional will play a key role in CSR programs from strategy to implementation.

Impact of CSR on HR Development

Increased retention and reduced recruitment cost- Acc. to a survey conducted by Conference Board of Canada in 2000, 71% of employees wish to get associated with socially responsible organizations. Organizations commitment towards society is becoming one the key factor for employees to decide their workplace. It also impacts the retention status of employees, as they don't want to change their job if their employer is behaving in social responsible manner reducing the cost associated with the hiring of a replaced employee.

Attracting the Talent-Acc. to Thornton (2008), a study conducted by Aspen Institute in 2007, management graduates expressed their interest in working with offers, which have the potential to make contribution towards society. They want their organizations to promote equal, green and socially responsible environment.

Improved employee morale and productivity- It is well-

established fact that engaged, motivated employees are more productive. Various studies have revealed this fact that employees display high loyalty and feel motivated if their jobs are with the companies, which are more socially responsible. Also high employee satisfaction generates high productivity of employees in turn leading to customer satisfaction. For this, improved work environment of the organization is to be credited which is the resultant of CSR activities.

Discussion

Organizations are gradually realizing the fact of incorporating CSR into their organization's DNA. In this process HR is the key and vital process driver, which has the ability to lead and work with other functions to integrate CSR into business goals and objectives. Organizations should apprehend this importance and by taking a pledge of employee development, a proper CSR introduction should be introduced. CSR is no longer considered to be a separate division therefore it should be the part of employee experience within the organization and its values.

REFERENCES

- ◆ Strandberg, C. (2009). The role of human resource management in corporate social responsibility. Standberg Consulting.
- ◆ L.A.Mohr. (1996). Corporate social responsibility:competitive disadvantage or advantage? Marketing and Public Plicy Conference. American Marketing Association.
- ◆ R.E.Freeman. (1984). Strategic Management: A Stakeholder . Boston. In JIE,X-W and SU,R-J. (2015). Literature reviw on corporate social responsibilty. International Conference on Management Engineering and Management Innovation. Atlantis Press.
- ◆ Khoury.G and Rostami,J. (1999). Corporate Social responsibility: Turning Words into Action. Ottawa.
- ◆ M.Hopkins. (2010). The planetary bargain: Corporate social responsibility matters. Journal of Biosocial Science, 42 (3).
- ◆ Maignan,I, Ferell,O. and Ferell,L.(2005). A Stakeholder Model for Implementing Social Responsibility in Marketing. European Journal of Marketing, 29 (9), 956-977.
- ◆ McWilliams, D.S.Siegel. and Wright,P.M. (2006). Corporate Social Responsibility: Strategic Implications. Journal of Management Studies, 43 (1), 1-18.
- ◆ Bondy. K., Matten, D. and Moon, J.(2008). Multinational corporation codes of conduct: Governance tools for corporate social responsibility? Corporate Governance, 16,294-311.
- ◆ Ali,I., Rehman, U. K. and Yousaf. (2010). Corporate Social Responsibility Influences, employee commitment and organizational performance. African Journal of Business Management,4(12),2796-2801.
- ◆ Arevalo, J. A. and Aravind, D. (2011). Corporate Social Responsibilities practices in India: approach, drivers and barriers. Corporate Governance International Journal of Business in Society, 4(11),399-414.
- ◆ Mirvis, P. (2012). Employee engagement and CSR: Transactional, Relational and Developmental Approaches. California Management Review, 54(4).
- ◆ Griek, O. V. (2017, August 24). 6 Ways Corporate Social Responsibility Benefits your Employees. Retrieved from Conscious Company Media: <https://consciouscompanymedia.com/workplace-culture/hr-innovations/6-ways-corporate-social-responsibility-benefits-employees/>
- ◆ Crifo,P and Forget,V,D. (2012). The Economics of Corporate Social Responsibility: A Survey. Ecole Polytechnique. Centre national De La Recherche Scientifique.
- ◆ Benabou, R. and Tiroel,J. (2010). Individual and Corporate Social Responsibility. Economica 77(305),1-19.
- ◆ Friedman,M.(1970, September 13). The Social Responsibility of Business is to Increase its Profits. New York Times Magazine,32-33. In Crifo,P and Forget,V,D. (2012). The Economics of Corporate Social Responsibility: A Survey. Ecole Polytechnique. Centre national De La Recherche Scientifique.
- ◆ Grant, A. M.(2007). “Relational Job Design and the Motivaion to make aPersonal Difference”. Academy of Management Review,32(2),393-417.
- ◆ Society for Human Resource Management (SHRM). (2007). Corporate Social Responsibility: United States, Australia, India, China, Canada, Mexico and Brazil: A Piolt Study, Virginia.

ARTIFICIAL INTELLIGENCE IN MEDICINES

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Abstract

Online shopping is evidently the present future trend of shopping. With the pace of each Artificial intelligence (AI) refers to that term in which there is a use of computer to create a intelligent behaviour in which the human intervention is minimum. In Artificial Intelligence it is generally accepted that there will be a invention of robots only. The term 'robot' defines from the Czech word 'robota' which means biosynthetic machines used as a forced labour.

The study on Artificial Intelligence in machine (AIM) is 25 years old. During this period, this field has attached the best computer scientists, and the work done by these scientists are always represents remarkable achievements. The Artificial Intelligence in machine (AIM) plays a virtual role in gaining and to final a solution ta how the medical practice becomes Artificial Intelligent.

The advancement in technology plays an important role and also encouraged the researchers to develop that software which helps in assising the doctors in making a prompt and effective decision without consulting the speacialits. This development in software makes a human potential and makes intelligent in reasoning, making decisions learning and many others. Artificial Intelligent is accepted as a how technology in computer science but it is not a new concept. Artificial Intelligent plays a vital role in many areas such as business, manufacturing, medical and education. This paper explores the potential of Artificial Intelligence in medicines.

Keywords – Artificial Intelligence, Robots, Artificial Intelligence in medicine (AIM).

INTRODUCTION

Artificial Intelligence is concerned with the design of intelligence in artificial devices. So, building intelligence into men made systems is known as Artificial Intelligence. Intelligence is a property in which machine behaves in a best possible manner. Intelligence is something which characteristic human.

We can use goggle translators while travelling and by examine we are able to know how AI works. Artificial intelligence also plays a vital role in the field of medicines and it helps in emerging the technology in the field of health care sector. Robots help doctors in the examination and the analysis of medical history of patients.

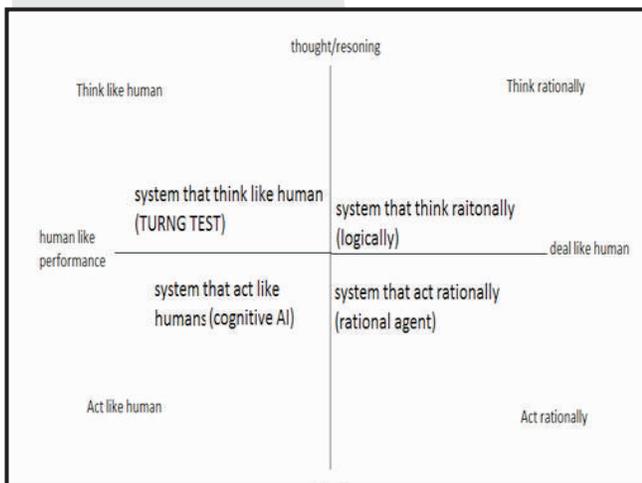
Father of Artificial Intelligence – Alan Turing

Human (interrogator)	Human or Computer
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WALL

There is a room separated by walls on one side we have a human (interrogator) and on other side we have either computer/human. Human ask question and the person/computer replies. Computer has to convince the human that it is not a computer. If a human fails to reliably distinguish the human from computer then the computer does possess AI.

Typical Artificial Intelligence problems – planning route, activity, used by Google map, OLA, speech recognition (siri), face detection (IphoneX).



Intelligent Behaviour in Human – perception (ability to see/ hear sensory information). Reasoning (reasoning with information that we have), learning (learning for new situation), understanding language, solving problem. We want our AI system to solve all these problems. There are two types of AI – weak AI, strong AI.

Weak AI – weak AI deals with creation of computer based Artificial Intelligence that cannot truly reason and solve problems but can act as if were intelligent (stimulating intelligence). Strong Artificial Intelligence – it deals with cognitive mental states that can think, reason, understand the behaviour. The official idea and the definition of AI was first coined by JOHN Mc CARTHY in 1956 at the Dartmouth Conference (father's of AI)-John Mc Carthy, Marvin Minsky, Claude Shannon, Ray Solomonoff, Alan Newell, Herbert Simon, Arthur Samuel, Oliver Selfridge, Nathaniel Rochester and Tremendous More.

McCarthy- “Every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to stimulate it. An attempt will be made to find how to make machines use languages, from abstractions and concepts, solve kinds of problems now reserved for humans and improve themselves.” In essence, AI is the machine with the ability to solve problems usually done by humans is an AI. The original 7 aspects of AI (1955)- stimulating higher functions of the human brain, programming a computer to use general language, arranging hypothetical neurons in a manner so that they can from concepts, a way to determine and measure problem complexity, self improvement, abstraction defined as the quality of dealing with ideas rather than experts, randomness and creativity. After approx 65 years I think that we re-strictly completed the language, measure problem complexity and self-improvement. However, randomness and creativity is just turning to be explored.

Alan Turing- I propose to consider the questions –“Can machines think?”. Well, in fact AI has been growing exponentially in the past decades. AI will probably be one of the biggest scientific breakthroughs in the 21st century who gives us power to explore the universe and our humanity with the different approach. AI has the potential forever changing our humanity. The backbone of AI is machine learning. We use Google translators while travelling and by examine Google translates. We can actually gain the great understanding that how AI works.

Machine learning can be understood in two different major components- use algorithms to find meaning in random and encoded data and use learning algorithms to find a relationship between knowledge and improve the learning process. So, the overall goal of machine learning is actually quite simple is to improve the machine performance on certain task and that task can be predicting the stock market, complicated one that is translating articles between languages.

LITERATURE REVIEW

Artificial Intelligence in Medicine- There are two main branches in AI in medicine are as follows- virtual and physical branch. In virtual branch it includes the informatics approach which is influenced by the deep learning information management which is used to control the health of management systems, which also includes electronic health records and it also plays a vital role in providing the guidance to the doctors so that they can make an effective treatment. The physical branch plays an important role and which is represented by the robots which are used to take care of patients or to make a surgery successful. The physical branch is targeted by the nano robots which is regarded as a unique new drug delivery system.

(World economic forum, global risk 2015.)

The Virtual branch-The component in virtual branch is represented by machine learning which is also called a deep learning. The machine learning is represented by the mathematical algorithms which play a major role in improving the learning through experience. In virtual branch it contains the three types of machine learning algorithms- unsupervised which means it has ability to find the pattern, supervised which means the classification and prediction is done on the basis of previous examples and reinforcement learning which means in this there is use of rewards and punishments which is used to form a plan or a strategy to operate a space of the specific problem. Artificial Intelligence has a major role in boosting the discoveries in genetics and the modular medicine which can be done with the help of deep learning algorithms and the knowledge management.

(Luxion DD. Recommendations for the ethical use and design of artificial intelligent care provide 2014)

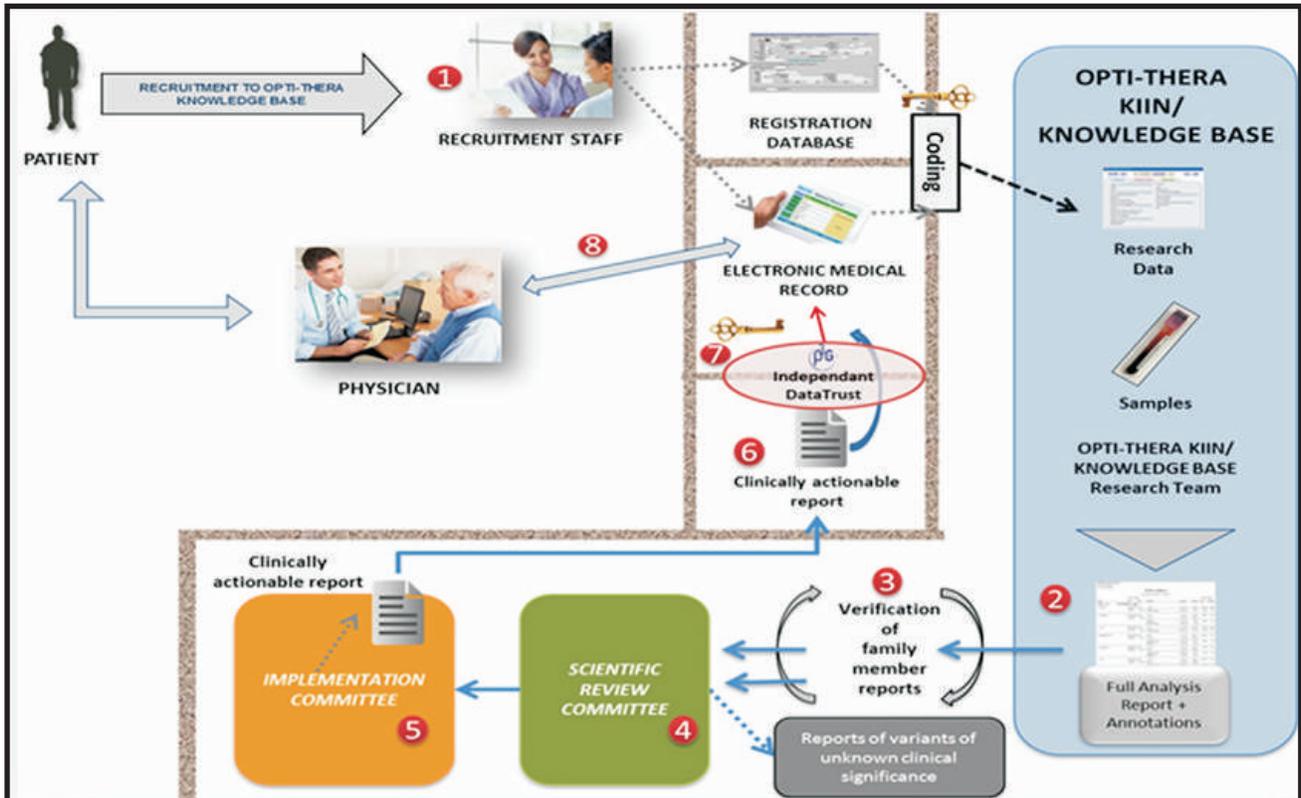
In present system thinking about the health care which not focuses on the interaction between the patients and the doctors but it also include the large scale and the cycle of the organisation. In artificial

Intelligence the health care system is kinetic which makes learning from its own experiments and it also leads to continuous development this is called multi – agent system (MAS) in which a set of agents which is situated in a common environment interact with each other. This process leads to the development of the organisation through which process is achieved with the help of AI.

“Existing technologies are being combined in new ways to streamline the efficiency of healthcare operations”, Dr. Bernadette Keefe.

robotic arm by operating controls, seated at a work station out of the operating room is the if surgical robots.” – Keefe. Rehabilitation robots: These robots play a major role in the rehabilitation of the patients with diabetes (Simonou M. Delconte G. Humanoid, 2015).

These are robots which are designed only to provide rehabilitation facilities to the patients. Medical Transportation Robots: these robots are designed to supply medications and meals to the patients. These robots are programmed in such a way to transport



(Source - DataTrust Pipeline Flow Integration. Figure from Kirby, E., Tassé, A.M., Knoppers, B.M., Joly, Y., Ngueng Feze, I., Dalpé, G., Phillips, M.S., Tremblay, J., Hamet, P. (2016).

The physical branch – The second branch of artificial intelligence in medicine is the physical branch which includes the objects which are physical in nature, the medical devices and the robots who plays a vital or an important role in the delivery of the care to the patients which is also known as care bots. The robots used as helpers, for example; Telepresence: In telepresence the doctors use robots for the examination and to beat the patients in rural or remote areas. Surgical Assistants: The robots also play a vital role as surgical assistants and help the surgeons in performing the operations. “ The ability to manipulate a highly sophisticated

the medications or meals to the patient on time. “There is however, a need of highly advanced and cost effective indoor navigation system passed on sensor fusion location technology in order to make the navigation capabilities of transportations robots more robust”. – Manoj Sahi. The main challenge in this new era of medical care is the need of standardized, comparative evaluation of the effect of robotic system on health indicators and it also helps in measuring the psychological and physical status, side effects and outcomes (Theofilatos K, Pavlopoulou N, Papisavvas C, Likothanassis S, Dimitrakopoulos C, Georgopoulos E, et al. 2015)

Why Artificial Intelligence in medicine is important?

Artificial Intelligence is important in medicine because the artificial intelligence have the potential to make a diagnosis or to take care of chronic disease patients and the AI also have the capability to suggest therapies for the complex illness. Reasons why AI in medicine is important helps in keeping the mountains of data, it provides conceptual relevance, it plays a major role in providing to communicate objectively to the patient, reducing errors related to human fatigue, improving clinical reliability, identifying diseases more readily and increasing doctor and patient engagement (Kalton A, Falconer E, Docherty J, Alevras D, Brann D, Johnson K. 2016)

Current trends of AI in medicine – In the current scenario the new and the update technologies are entering in the field of the medicines. AI excels at well – defined tasks: The main focus if the researchers are that AI plays a major role in maintaining the relation with human doctor. The AI helps in defining the inputs to the binary outputs which is easily validated, AI is supposing doctors, not replacing them: The machines does not have any feeling and lack of human qualities live empathy and compassion that why the patients always use to prefer a human doctors. In current scenario the patients does not have full must on A.I. but apart from this the AI has the capability to calculate the target zones of head and neck with the help of radio therapy more accurately and more quickly than a human doctor. The AI also plays a vital role to provide a protection to the patient from the harmful radiations. AI supports to the resourced services – A style AI system is able to control or to provide services to the large population this could be done when there is a scare of human resources (IBM/Waston, 2018).

The AI plays an important role in providing the services and support to the patients by providing the medications and meals on time. AI is a very picky caters before developing the machine learning models it always requires a well structure having data which remain relatively stable over a period of time. In 2008 Google tried to predict the seasonal influenza by using search engine because there is dramatically change in the habit of people searching in every passing year, this model does not work to analysis or to predict the future that is why it was quickly discontinue (Silverman BG, Hanrahan N, Bharathy G, Gordon K, Johnson D., 2015)

Future possibilities of AI in medicine – AI plays an

significant role in extracting information from patient electronic foot print. It will same time and it also helps in improving efficiency. For example : If a patient make a consultation with doctor who have types 2 diabetes, currently a doctor must check his reports, blood tests which is a time taking process. In contrast, AI automatically with the help of patient's footprint got the clinical record of patient quickly and this type of technology also works efficiently to get the medical history of a patient. The footprint system which is regulated by AI becomes validated as these systems given more responsibility. The patients who have type 2 diabetes would be determined by AI it plays a major role in giving the patient history rather than a complicated method which are in a current trend. This research requires a personalized medicine this can only be possible with the help of AI which helps in providing anonymous quantities of medical information furthermore, AI plays a significant role by monitor millions of input in the form of output if gives prevented medicines. AI plays a major role in proving a primary care to the patients. It is also able to diagnosis skin problems which help a dermatology department. This concept is not only limited to the scanning the skin problems only but also AI shows the potential in analyzing various types of data including rational scans, radiograph and ultrasound. This can be done in a efficient way with a highly technically equipments. The future of AI is directed towards and the main objective of AI in future is to develop machines so that it saves time and it can be done in a efficient manner and it also brings a revolution in the field of medicine by obtaining various methods for the development of AI in medicine with the help of algorithms. It also plays a major role in building a strong bond or a beneficial relationship between AI and clinicians where AI offer a great efficiency to understand the rigid or complex clinical case management. Form the development in medicine researcher's plays and significant role in the field of AI. This also leads to the improvement in the health care sector (Castaneda C, Nalley K, Mannion C, Bhattacharyya P, Blake P, Pecora A, et al. 2015)

Pharma industry in the age of artificial intelligence – AI in pharmaceutical industry refers to that system in which automatic technologies are used, with little or without human intervention. AI plays an emerging role in the drug development and in patient case. In AI 62% of the business have a future plan to invest. Apart from that 20% of the business has already in the field of AI but in future it will change each and every aspect of our lives.

Moreover, the pharmaceutical industry looking at the future ways to develop the healthcare sector. In recent time, many big pharmaceutical industries are already working in the field of machine learning and artificial intelligence. The 10 – so called big pharmaceutical companies like. Novartis, Roche, Pfizer, Merck, Astra, Zeneca, Glaxosmithkline, Sanofi, Abbvie, Bristol-myers, Squibb and Johnson & Johnson want to develop business activities with the help of machine learning and AI (Luxion dd., 2014)

Major areas where AI can be seen as positive forces in Pharma – AI plays a significant role in the discovery of drugs because the most troubling fact is that a 9 out of 10 clinical drugs fails to reach the approval stage. The machine learning and the artificial intelligence have potential to cut down the cost of new drugs, the cost incurred by the 10 suggest pharma firms is approx 70 billion annually. The partnership between the Buyer and Mreck helps radiologists to identify the patients who have chronic pulmonary hypertension. The partnership between bohranger and bactevo improve the quality and it also boost up the speed of drug discovery. The partnership between Novartis and BASF helps to develop the novel peptides in the form of natural food. The AI also plays a vital role for the pharma industry to cure the complicated and chronic diseases. Despite of all these AI plays a role to change the biotech and pharma industry in the field of medicine discovery (Kido T., 2011)

CONCLUSION

It is important to analyze that how AI would makes rapid changes in the healthcare sector and in the field medicines. The main objective of this platform is to provide the development in the medicines with less or without human intervention. The world economic 2016 forum describes AI into a open AI ecosystem which is considered one of the top 10 emerging technologies in the world. A huge amount of data is available and a combination of natural language algorithms and social awareness algorithms. In the medicines and in the health care sector where the huge amount of data is utilized in the form medical history of the patient which helps the doctors to analyze the medical history of each and every patient. The main appreciation is that the AI will become so aligned that it has a human capabilities and AI has a capacity to control our lives. However, if we get a success in creating the standards which contain ethics then it helps in the development of various measures and it also increases the efficiency level in the field of medicines.

REFERENCES

- ◆ World Economic Forum, global risk 2015.
- ◆ Silver man BG, Hanrahan N, Bharathy G, Gordon K, Jhoneson D. A system approach to health care 2015
- ◆ Klton A, Falconer E, Docherty J, Jhonson K, Multi Agent based simulation of a complex eco system of mental health care 2016.
- ◆ Castaneda c, nalley k, mannion c, clinical decision support system for improving diagnostic accuracy and chieving precision medicine 2015
- ◆ Luxion DD. Recommendatios for the ethical use and design of artificial intelligent care provide 2014.
- ◆ Simonou M. Delconte G. Humanoid assessing rehbiitative exercise 2015.
- ◆ School of information technology university, Malesiya 2017.
- ◆ Larson JA, Jhosen MH, Bhayni SB, Application of surgical safety standards to robotic surgery: five principle of ethics, J.AM, Coll surgon 2018 .
- ◆ Cornet G. Robot comparisions and ethics a program approach of ethical design. Jint biothiqud, 2013; www.asme.org
- ◆ Kum-Hsing Yu, MD, Phd. (Department of biomedical informatic). Haward Medical school, September 2018
- ◆ British Journal of general practice 2018, march.
- ◆ IBM/Waston-health (july,2018)

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3. The article itself in around 6000 to 10000 words depending upon the aspect of issue presented in the manuscript. It may include the innovative thought with its practical applicability, conducted research work, case study, book review etc. The data table, graphs and charts etc. must be numbered properly and attached as separate sheet with clear presentation

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