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Editorial.....

It is heartening to note that our journal is able to sustain the enthusiasm and covering various facets of knowledge. It is our hope that IJMER would continue to live up to its fullest expectations savoring the thoughts of the intellectuals associated with its functioning .Our progress is steady and we are in a position now to receive evaluate and publish as many articles as we can. The response from the academicians and scholars is excellent and we are proud to acknowledge this stimulating aspect.

The writers with their rich research experience in the academic fields are contributing excellently and making IJMER march to progress as envisaged. The interdisciplinary topics bring in a spirit of immense participation enabling us to understand the relations in the growing competitive world. Our endeavour will be to keep IJMER as a perfect tool in making all its participants to work to unity with their thoughts and action.

The Editor thanks one and all for their input towards the growth of the **Knowledge Based Society**. All of us together are making continues efforts to make our predictions true in making IJMER, a Journal of Repute

Dr.K.Victor Babu
Editor -in-Chief

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IDEOLOGIES BEHIND THE HALAL TOURISM SECTOR

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Abstract

A quick scan of the available literature on the subject of halal tourism reveals that many scholars and laypersons alike misconceive this concept. Whereas some suggest that halal tourism occurs whenever a Muslim individual travels somewhere, others retort that only pilgrimages by Muslim travelers regarded as halal tourism. More careful research of the literature shows that the truth is somewhere in between, as none of the above definitions is correct. Overall, it is this lack of clarity that has prompted an additional inquiry into the essence of halal tourism. This essay is a modest academic endeavor to ascertain what halal tourism is and what ideologies lie at its foundation. To answer these questions, the author employs the literature review research methodology, scrutinizing number sources. Ultimately, this essay has established that halal tourism not confined to religious pilgrimages alone. Indeed, halal tourism occurs whenever a Muslim individual travels for religion, business or leisure and uses only those services and facilities that conform to the teachings of Islam.

Keywords: Tourism, Travel, Halal Tourism, Islamic Tourism, Islamic Teachings, Sharia.

Introduction

Just half a century ago, travel was an undeniable synonym for adventure and exploration. In the popular imagination, any widely traveled individual associated with an aura of mysteriousness. Today, by contrast, travel and tourism have become more common and mundane, as ever more significant numbers of people flock to both domestic and foreign destinations for business and recreation or to simply quench their wanderlust. The travel industry has evolved correspondingly, learning to cater to the specific needs of different categories of tourists and travelers. Some of the most common and clearly defined subcategories of tourism that have developed in recent decades include green tourism, religious tourism, sports tourism, shopping tourism, wellness tourism, package tours and – pardon the obscenity – even sex tourism. Halal tourism, for its part, is yet another burgeoning subcategory of tourism. Despite its growing dimensions, the concept of halal tourism is often misunderstood and misrepresented in popular media.



Given the problem, this essay seeks to understand the concept of halal tourism better. By extension, the piece attempts to ascertain the ideologies behind this subcategory of tourism. In other words, the essay examines the relationships between halal tourism on the one hand and religion, management, economics and politics on the other. By these findings, the article seeks to make an informed assessment if the halal tourism sector is capable of withstanding competition from conventional tourism. The overarching argument is, therefore, straightforward: Halal tourism is designed to enable pious Muslim tourists to pray towards Mecca, use gender-segregated facilities and otherwise abide by the Quranic teachings on vacation without raising eyebrows or causing other discomforts. Although evidence suggests that some Muslims are embracing a capitalist consumer culture, it is reasonable to opine that halal tourism will assume even greater dimensions in the future.

Methodology

Considering the constraints of this paper, no primary data were collected to conduct a more robust and comprehensive research project. This limitation, however, does not vitiate the significance of the present essay. Nor does it significantly diminish the contribution of the present article to the relevant academic scholarship on the subject of halal tourism. The most significant value of this article is that it scrutinizes pertinent academic literature to collect evidence. More specifically, it distills and synthesizes common threads from the reviewed scholarship. Many sources were a review for this article. Although several of the used sources are somewhat outdated, they nonetheless provide valuable insights into the topic. The majority of the sources are, however, more up-to-date. Likewise, while some articles from mass media made their way into this essay, the emphasis was on credible sources like articles from peer-reviewed scholarly journals, books published by authoritative publishing houses, articles from reliable newspapers and official reports. To locate these sources, the author of this essay scanned online databases with such keywords as “halal tourism,” “halal destination,” “Muslim friendly tourism,” etc.

Results

Simply put, halal tourism refers to a tourist sector that caters to the needs and requirements of Muslim travelers. To get a more elaborate idea of what halal tourism is, however, it is essential to cite and deconstruct more detailed definitions adduced by competent organizations and individual commentators. Specialists at the Organization of Islamic Cooperation, for example, contend that halal tourism occurs when Muslim travelers visit predominantly Muslim destinations, with religious motivations representing the main reason why they choose these specific destinations (“Strategic roadmap for the development of



Islamic tourism in OIC member countries” 2017). It is crucial to acknowledge that halal tourism is a broader concept and it can occur even in those countries where Islam is not the dominant faith. In the same vein, halal tourism can happen in situations when spiritual fulfillment or pilgrimage is not the main reasons why Muslim travelers come to a particular destination. Henderson (2009) concurs with this judgment, further adding that Muslim tourists who travel abroad for recreation rather than the religion but conform to Islamic teachings at the same time are mainly participating in halal tourism. El-Gohary, Edwards, and Eid (2017), too, believe that it is counterproductive and counterintuitive to limit halal tourism only to pilgrimages dogmatically. Other researchers, including Al-Hamarnah (2008), go even further, surmising that any trip taken by a Muslim tourist is part of halal tourism by default. This approach is, however, ineffective, for it blurs the real boundaries of halal tourism. With the same luck, any trip taken by a Christian could be branding as Christian tourism. But this branding would be meaningless, failing to add any novelty to the field of tourism studies.

It should be noted, in an important aside, that the well-established kosher tourism is not solely about demographics. It is more about accommodating the needs of a particular demographic group. As seen from the definitions of Henderson and El-Gohary, Edwards and Eid, halal tourism is even more concrete and specific concept. Overall, what this passage serves to show is that halal tourism requires adherence to Islamic rules of propriety by Muslim travelers for their trips to be duly considered as representing halal tourism.

The discussion above already alludes to the idea that halal tourism is integral to religion. Despite the commonly regarded belief to the contrary, moreover, that religion is the mainstay of halal tourism, its lynchpin, its cornerstone. Nathalie Bourgeois (2016) addresses what some commentators – those in the west, mainly – see as the incongruence between tourism and Islam:

To many non-Muslim Westerners, the expression “Islamic tourism” might seem an oxymoron, an improbable association between a strict religion and the western idea of carefree idleness in exotic locations. The Prophet himself preached Muslims to go and discover the world: “Travel through the land and observe how He began creation,” says the Quran (p. 1).

For Muslim travelers, therefore, halal tourism implies the necessity to organize their trips under the beliefs and practices of Islam. For travel companies, hotels and other service providers, halal tourism suggests the need to offer only such facilities that propagate Islamic teachings. Although no codified standards of halal tourism exist, the consulted authors explain that service providers involved in this industry tend to provide separate swimming pools for males and females, serve halal food and do not serve alcohol, announce prayer



timings, have Qurans readily available, and even broadcast religious content as part of entertainment (Shirazi, 2016; Raj & Griffin, 2017). Hashim, Shariff, Mahamood, and Bhari (2018) weigh in to suggest that even charter flights booked for Muslim travelers frequently geared toward Muslim standards. In doing so, these service providers are driven by either the desire to attract more Muslim travelers or by their religious consciousness. One or the other way, it is understood that religious ideologies are ubiquitous in the halal tourism sector.

Halal tourism has political implications too. It could say in the very least that halal tourism promotes Islamic solidarity (Reiter, 2008; Kozak & Kozak, 2015). This subcategory of tourism could also potentially have an impact on Islamic nationalism (US Congress, 2009). Pinpointing the exact political effects of halal tourism goes beyond the purposes of this essay. It is instead more important to focus on the economic ideologies undergirding the halal tourism sector. It is imperative to make a reservation in this context that halal tourism is not merely about religion, politics, and thinking. Like any other business enterprise, it is also about income. On the face of things, it seems illogical from the standpoint of economics and fiscal integrity that travel service providers would deliberately limit their services to Muslim individuals, thereby eliminating a vast swath of non-Muslim tourists. Frequently, however, it is just a matter of perspective. If travel service providers reason that Muslim tourists are a more profitable market for them, the consulted authors agree, these service providers can make a volte-face in favor of this market at the expense of the less lucrative non-Muslim market (Demir & Toprak, 2004; Adas, 2006; Eddahar, 2016). Drawing on the example of Turkey, Elaziz and Kurt (2017) explain that the recent rise in Islamic capital experienced by this country has contributed to the burgeoning of the Islamic consumer market. Hence, the conclusion arises that the forces of capitalism are unavoidable in the tourism sector, be it conventional tourism or halal tourism. In essence, businesses involved in the halal tourism sector provide Muslim friendly services to their clients with the goal of deriving financial benefits. As far as Muslim tourists themselves are concerned, a study by Elaziz and Kurt (2017) has found that they have a proclivity to provide excuses for their going on vacation. Elaziz and Kurt (2017) elaborate on these findings to suggest that even some religious devotees have espoused capitalist consumer culture or, in other words, a vacation of tourism culture. Overall, what these tidbits imply is that halal tourism is not necessarily a purely religious phenomenon based on religious ideology.

Regarding, there seem to be adequate grounds to assert that the halal travel sector holds a great promise for the future. This special-interest-tourism market is in its infancy at this juncture of history. Mattison's (2018) article for Euronews shows that this sector is quickly catching up with the broader industry. As a more resilient middle class is emerging in many predominantly Islamic



nations, ever more pious Muslims now have the wherewithal to travel (Scott, 2010; Bikramjit, 2014). Mattison (2018) reckons that halal tourism will account for some 14% of global travel expenditure by 2022. El-Gohary, Edwards, and Eid (2017) also agree with the overall idea that halal tourism faces sanguine prospects, further adding: “The growth trajectory of Muslim tourism is expected to continue as Muslim increasingly come from fast-growing economies that include BRICS countries such as China and India” (p. 107). The rise in halal tourism is due to multiple factors. First of all, halal tourism is developing under the stewardship of the Organization of Islamic Cooperation. More specifically, the organization initiates and coordinates regional efforts in policy and regulation development, marketing and promotion, destination and industry growth, capacity building and so on (Agarwal, Busby & Huang, 2017). Besides, individual states and individual companies within states make their efforts to foster halal tourism. The government of Indonesia introduced 12 Muslim friendly destinations in 2013 (Firdausi, Marantika, Firdaus & Sajidah, 2017). All this augurs well for the halal tourism sector.

Conclusion

Recognizing the diversity of needs and seeking to uphold this diversity by providing specific services to Muslim people, representatives of the travel sector in many parts of the world are now increasingly offering travel services that are in strict conformity with Islamic teachings. This essay has confirmed the tentative hypothesis that the halal travel industry has both religious and economic underpinnings. Businesses involved in this sector aspire both to please its Muslim clients, so that these clients would feel comfortable during their vacations, and to derive large financial dividends from the promising and rapidly growing market. Besides, it is also crucial to note in conclusion that the rapid growth of halal tourism has implications for hotels, restaurants, airlines and other businesses involved in this sector. People in charge of these businesses need to be careful to take full advantage of the recent tendencies in the travel industry, thereby facilitating continuous development of halal tourism, but avoid the potential pitfalls at the same time. Accomplishing this in practice might, however, be challenging, for allegiance to halal tourism at the expense of other subcategories of tourism has the potential to create conflicts of interest. After all, the standards of halal tourism and conventional tourism are often incompatible. It remains to see how such incompatibilities will resolve in the future.

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धर्मकीर्तिप्रणीतधातुप्रत्ययपञ्जिकायाम् एकाच उपदेशेऽनुदात्तात् सूत्रविचारः

वि.अमरनाथशर्मा,
शोधकर्ता, व्याकरणविभागः,
एकलव्यपरिसरः, राष्ट्रिय संस्कृत संस्थानम्,
अगरतला, पश्चिमत्रिपुरा।

धर्मकीर्तिप्रणीतधातुप्रत्ययपञ्जिकायां नैके अंशाः प्रतिपादिताः। सत्सुविभिन्नांशेषु सम्प्रति एकाच उपदेशेऽनुदात्तात् इति सूत्रस्य विचारः अस्मिन् शोधपत्रे विचार्यते यथा – नेड्वशि कृति¹ इत्यनुवर्तमाने, एकाच उपदेशेऽनुदात्तात्² इति सूत्रं पठितम्। तथा च उपदेशे यो धातुरेकाजनुदात्तः तस्मादुत्तरस्य वलादेः आर्धधातुकस्य इडागमो न भवति। प्रकृत्याश्रितोऽयं प्रतिषेधः। के पुनरुपदेशेऽनुदात्ताः? ये तथा पठ्यन्ते। त एव विस्पष्टार्थम् अनिट्कारिकासु विभज्य प्रदर्शयन्ते।

अनिट् स्वरान्तो भवतीति दृश्यताम् इमांस्तु सेटः प्रवदन्ति तद्विदः।

अदन्तमृदन्तमृताञ्च वृङ् वृजौ श्विडीडिवर्णेष्वथ शीङ् शिञ्चावपि॥ 1॥

गणस्थमृदन्तमुताञ्च रुस्तुवौ क्षुवन्तथोर्णोतिमथो युणुक्षुवः।

इति स्वरान्ता निपुणं समुच्चितास्ततो हलन्तानपि सन्निबोधत॥ 2॥

अस्यायमर्थः – स्वरान्तः अजन्तः यो धातुः स सर्वत्र अनिट् भवतीति दृश्यताम् अवगम्यताम्। तेषु स्वरान्तेषु धातुषु मध्ये तद्विदः आचार्याः इमांस्तु वक्ष्यमाणान् धातून् तु सेटः प्रवदन्ति, अदन्तम्-अकारान्तं सर्वम्, ऋदन्तम्-ऋकारान्तं सर्वम्, ऋताञ्च-ऋकारान्तानाञ्च मध्ये वृङ् वृजौ – वृङ् सम्भक्तौ, वृज्-वरणे इत्येतौ, श्विडीडिवर्णेषु – इवर्णान्तेषु धातुषु मध्ये टु ओश्चि-गतिवृद्धयोः, डीङ् विहायसा गतौ, अथ शीङ् शिञ्चावपि – अथ अनन्तरं, शीङ्-स्वप्ने, श्रिज्-सेवायाम् इत्येतौ द्वावपि।

एतदुक्तं भवति – अकारान्तास्सर्वे धातवः, ऋकारान्तास्सर्वे, ऋकारान्तेषु द्वावेव, इवर्णान्तेषु चत्वारः, एतान् धातून् सेटः प्रवदन्ति इति। गणेषु तिष्ठति इति गणस्थः, तं गणस्थम् ऊदन्तम् ऊकारान्तं सर्वम्, उतां च रुस्तुवौ-उकारान्तानाञ्च मध्ये रु-शब्दे, स्तु-प्रस्रवणे, क्षुवम् टु क्षु-शब्दे, तथा ऊर्णोतिम्-ऊर्णुज्-आच्छादने,

वाच्य ऊर्णोर्नुवद्भावो यङ्प्रसिद्धिः प्रयोजनम्।

आमश्च प्रतिषेधार्थमेकाचश्चेदुपग्रहात्॥

इत्यतिदेशादेकाच्चवमस्तीत्युदात्त ऊर्णोतिरुपदिश्यते, अथो – अनन्तरम्, युनुक्षुवः-यु मिश्रणे, णु-स्तुतौ, क्षुण्-तेजने इत्येतान् सप्तधातून् सेटः प्रवदन्ति आचार्याः, अनेन प्रकारेण स्वरान्ता धातवः निपुणं समुच्चिताः सम्यगुक्ताः, ततो हलन्तानपि सन्निबोधत-ततः अनन्तरं हलन्तानपि अवगच्छत इत्यर्थः।

शकिस्तु कान्तेष्वनिडेक इष्यते घसिश्च सान्तेषु वसिः प्रसारिणी।

¹.अष्टाध्यायी 7-1-9.

².अष्टाध्यायी 7-2-10



रभिश्च भान्तेष्वथ मैथुने यभिः ततस्तृतीयो लभिरेव नेतरे ॥ 3॥

ककारान्तेषु धातुषु मध्ये शक्लु-शक्तौ इत्येको धातुरनिडिष्यते, सकारान्तेषु घसिः प्रसारिणी वसिश्च, घस अदने, वस निवासे इत्येतावुभौ अनिडाविष्येते। प्रसारणं सम्प्रसारणम्, तदस्यास्तीति प्रसारिणी, वस निवासे इत्यस्य यजादित्वात् सम्प्रसारणं विधीयते, प्रसारणीग्रहणं वस आच्छादने इत्यस्य धातोः निवृत्यर्थम्। रभ राभस्ये, यभ मैथुने, डुलभष् प्रातौ इति त्रय एव धातवः भान्तेषु अनिट इष्यन्ते, नेतरे नान्ये।

यमिर्जमन्तेष्वनिडेक इष्यते रमिश्च यश्च श्यनि पठ्यते मनिः।

नमिश्चतुर्थो हनिरेव पञ्चमो गमिस्तु षष्ठः प्रतिषेधवाचिनाम् ॥ 4 ॥

जमन्तेषु – जम्प्रत्याहारघटकनकारमकारान्तेषु धातुषु, प्रतिषेधवाचिनाम् – इट् प्रतिषेधवाचिनाम् आचार्याणां मते षडेव अनिट इत्यर्थः। जमन्ताडुः³ इति सूत्रकारेण कथितत्वात् जकारेणापि मकारस्य ग्रहणमस्ति, अतो जम्प्रत्याहारोऽस्ति इति मन्तव्यम्। यमु-उपरमे, रमु-क्रीडायाम्, यश्च श्यनि पठ्यते स मनिश्च-दैवादिक इत्यर्थः-मन-ज्ञाने, गम-प्रह्वत्वे शब्दे च, हन-हिंसागत्योः, गम्लृ-गतौ इति। एतदुक्तं भवति – मकारान्तेषु चत्वारः नकारान्तेषु द्वाविति।

दिहिर्दुहिर्मेहतिरोहती वहिः नहिस्तु षष्ठो दहतित्स्थथा लिहिः।

इमेऽनिटोऽष्टाविह मुक्तसंशयाः गणेषु हान्ताः प्रविभज्यकीर्तिताः ॥ 5॥

दिह-उपचये, दुह-प्रपूरणे, मिह-सेचने, रूह-बीजजन्मनि प्रादुर्भावे च, वह-प्रापणे, णह-बन्धने, दह-भस्मीकरणे, लिह-आस्वादने इत्यष्टावनिटः। अत्र मुक्तसंशया इति किम्? तन्त्रान्तरे चत्वारोऽपरे धातवः पठ्यन्ते सहिरिहिमुहिलुहयः। तन्त्रान्तरं व्याकरणान्तरम् आपिशलादि।

दिशिं दृशिं दंशिमथो मृशिं स्पृशिं रिशिं रुशिङ्क्रोशतिमष्टमं विशिम्।

लिशिञ्च शान्ताननिटः पुराणगाः पठन्ति पाठेषु दशैव नेतरान् ॥ 6॥

शकारान्ता ये धातवः गणपाठेषु पठ्यन्ते तेषां मध्ये, पुराणगाः पुरातनशब्दशास्त्रेषु अतीव परिणतहृदया आचार्या इत्यर्थः-दश धातव एव अनिटः इति प्रवदन्ति नेतरान्। दिश-अतिसर्जने, दृशिर्-प्रेक्षणे, दंश-दंशने, मृश-आमर्शने, स्पृश-संस्पर्शने, रुश-रिश-हिंसायाम्, कुश-आह्वाने रोदने च, विश-प्रवेशने, लिश-अल्पीभावे इति।

रुधिस्सराधिर्युधिबन्धिसाधयः क्रुधिक्षधी बुध्यति शुध्यती व्यधिः।

इमे तु धान्ता दश येऽनिटो मतास्ततः परं सिध्यतिरेव नेतरे ॥ 7॥

धकारान्ता ये धातवः तेषु इमे धातवः अनिटो मताः, रुधिर्-आवरणे, राध-साध संसिद्धौ, युध-सम्प्रहारे, बन्ध-बन्धने, क्रुध-कोपे, क्षुध-बुभुक्षायाम्, बुध-ज्ञाने, शुध-शौचे, व्यध-ताडने, पिधु-संशुद्धौ इति।

शिषिं पिषिं पुष्यतिशुष्यती त्विषिं श्लिषिं विषिं तुष्यतिदुष्यती द्विषिम्।

इमान्दशैवोपदिशन्त्यनिडिवधौ गणेषु धान्तान् कृषिकर्षती तथा ॥ 8॥

³.उणादि सूत्रपाठः 1-1-9



शिष्य-विश्लेषणे, पिष्य-सञ्चूर्णने, पुष-पुष्टौ, शुष-शोषणे, त्विष-दीप्तौ, क्षिष-
आलिङ्गने, विष्य-व्याप्तौ, तुष-तुष्टौ, दुष-वैकृत्ये, द्विष-अप्रीतौ, कृष-विलेखने, कृष-आकर्षणे-
भौवादिकस्तौदादिकश्च गृह्यते – इति द्वादश षान्ता अनिटः।

तपिन्तिपिञ्चापिमथो वपिं स्वपिं लिपिं लुपिं तृप्यतिदृप्यती सृपिम्।

स्वरेण नीचेन शपिं छुपिषिपी प्रतीहि पान्तान् पठितांस्त्रयोदश ॥ 9 ॥

तप-सन्तापे, तप-ऐश्वर्ये द्वयोरपि ग्रहणम् – तिपृ तेपृ टिपृ ट्रेपृ क्षरणार्थः, आप्लु-
व्याप्तौ, डुवप्-बीजसन्ताने, जिष्वप्-शये, लिप-उपदेहे, लिप्यु-छेदने, तृप-प्रीणने, दृप-
प्रहर्षणामोचनयोः, सृप्यु-गतौ, शप-आक्रोशे, शप-उपालम्भने, छुप-स्पर्शे, क्षिप-प्रेरणे इति
षान्ता अनिटः।

अदिं हदिं स्कन्दिभिदिच्छिदिक्षुदीन् शदिं सदिं स्विद्यतिपद्यती खिदिम्।

तुदिं नुदिं विद्यति विन्त इत्यपि प्रतीहि दान्तान् दश पञ्च चानिटः॥10॥

अद-भक्षणे, हृद-पुरीषोत्सर्गे, स्कन्दिर्-गतिशोषणयोः, भिदिर्-विदारणे, छिदिर्-
द्वैधीकरणे, क्षुदिर्-सम्पोषणे, शद्वृ-शान्तने, षद्वृ-विशरणगत्यवसादनेषु, जिष्विदा-
गात्रप्रक्षरणे, पद-गतौ, विद-दैत्ये, खिद-परितापे, तुद-व्यथने, णुद-प्रेरणे, विद-सत्तायाम्, विद-
विचारणे इति पञ्चदश दान्ता अनिटः। अत्र विद्यति इत्यविभक्तिको निर्देशः, विन्त इत्यत्र इति
शब्देनाभिहितत्वात् अव्ययेनाभिहिते कर्मणि न कर्मविभक्तिः इति प्रतिषेधात् प्रतिषेधविषये
प्रथमाविभक्तिर्भवति।

पचिं वचिं विचिरिचिरञ्जिपृच्छतीन् सिचिं मुचिं णिजिभजिभञ्जिभृज्जतीन्।

त्यजिं यजिं युजिरुजिसञ्जिमज्जतीन् भुजिं स्वजिं सृजिमृजि विद्ध्यनिट्स्वरान्॥ 11॥

अयमर्थः चकारान्तेषु षड् धातून् अनिट् स्वरान् विद्धि अनुदात्तस्वरान् अनिट् इत्यर्थः,
छकारान्तेषु एकम्, जकारान्तेषु पञ्चदश धातून् अनिटः विद्धि इति। डुपचष्-पाके, वच-
परिभाषणे ब्रुवादेशश्च, विचिर्-पृथग्भावे, रिचिर्-विरेचने, रञ्ज-रागे, प्रच्छ-जीप्सायाम्, षिच-
क्षरणे, मुच्छ-मोक्षणे, णिजिर्-शौचपोषणयोः, भज-सेवायाम्, भञ्जो-आमर्दने, भ्रस्ज-पाके,
त्यज-हानौ, यज-देवपूजासङ्गतिकरणदानेषु, युजिर्-योगे, युज-समाधौ द्वयोरपि ग्रहणम् रुजो-
भङ्गे, षञ्ज-सङ्गे, टुमस्जो-शुद्धौ, भुज-पालनाभ्यवहारयोः, भुज-कौटिल्ये द्वयोरपि ग्रहणम्,
ष्वञ्ज-परिष्वङ्गे, सृज-विसर्गे, मृजू-शुद्धौ, मृजू-शौचालङ्कारयोः एते अनिटः। सृजिमृजि इत्यत्र
मृजेः प्रमादपाठः, मृजू, मृजू इत्येतयोरुदित्वादिङ्गिकल्पस्यावश्यकत्वात्।

सन्दर्भग्रन्थावलिः –

1. धातुप्रत्ययपञ्जिका ।
2. अष्टाध्यायी ।
3. काशिका ।
4. वैयाकरणसिद्धान्तकौमुदी ।
5. वाक्यपदीयम् ।
6. महाभाष्यम् ।
7. माधवीय धातुवृत्तिः ।



पतञ्जलियोगसूत्रेषु वैज्ञानिकविषयाणामानुशीलनम्

(A study of scientific approach in Pathanjali Yoga Sutas)

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प्रस्तावना

संस्कृतं वैदिकं लौकिकं इति द्विविधम् । इतिहासपूर्वभाषा वैदिकम्, रामायणादनन्तरभाषा लौकिकमिति पण्डिताः अभिप्रयन्ति । अनन्तज्ञानपूर्णमिदं संस्कृतसाहित्यम् अनवरतं विराजते ।

संस्कृतशब्दमवलम्ब्य यदस्याः भाषायाः कृत्रिमत्वमापादितम्, तदिदं सर्वथैव मूलशून्यम्, यतो हि अस्या भाषायाः “संस्कृत” मिति नाम न कुत्रापि प्राक्तनेषु ग्रन्थेषु दृश्यते

विज्ञानशब्दस्यार्थः

अर्वाचीनमते विज्ञानं नाम वस्त्वनुभवपर्यवसायि ज्ञानम् । पुरा किल भारतीयसुधानिधौ ‘विशिष्टं ज्ञानं विज्ञानम्’ ‘विविधं ज्ञानं विज्ञानम्’ ‘विभेदेन ज्ञानं विज्ञानमिति’त्यादि विविधा व्युत्पत्तयोऽस्य निरूपिताः ।

विज्ञानं जनानां स्वाभाविकं ज्ञानं विशोधयति । तत्र च सर्वदेयं जिज्ञासा जागर्ति यज्ज्ञानविषयभूते पदार्थे किन्नाम सत्यं किञ्चासत्यमिति । यतो नहि ज्ञानं सत्यात्मकमेव जगति जायते । तथाहि तच्च द्विविधं भ्रमात्मकं प्रमात्मकञ्चेति । तत एवं प्रमाणैर्जायमानं ज्ञानं तर्केण परिशोध्यत इति न्यायभाष्यकृतोक्तम् । तद्विषोदितं स्वरूपमेव विज्ञानपदाभिलभ्यतां भजते । तदित्थं विज्ञानं सत्यमेव ।



स्वीकृतांशस्योपरि अन्तरिक्षविज्ञानम्, कृषिविज्ञानम्, खगोलविज्ञानम्, गणितशास्त्रम्, तान्त्रिकविज्ञानम्, प्राकृतिकविज्ञानम्, प्राणिविज्ञानम्, भूविज्ञानम्, भौतिकविज्ञानम्, मनोविज्ञानम्, रसायनशास्त्रम्, विज्ञानेतिहासः, वैद्यविज्ञानम्, सस्यविज्ञानम्, जीवविज्ञानम् च इत्यादि विषयाः स्वीकृताः। एते विषयाः चरकसंहिता – योगसूत्रं – बृहत्संहिता नामग्रन्थत्रये उपलभ्यन्ते।

योगसूत्रम्

पतञ्जलिः योगसूत्रस्य रचनाकारः। माहेश्वरसम्प्रदायान्तर्गतं पाणिनीयं नव्यव्याकरणत्रिमुनि-व्याकरणम् इत्युच्यते। भगवान् पतञ्जलिः पाणिनीयाष्टके महतीं व्याख्यां व्यलेखीत्। सेयं व्याख्या महाभाष्यम् इत्याख्या जगति प्रसिद्धाऽस्ति। एषः पतञ्जलिः विश्वविश्रुतः भाषाविदासीत्।

पतञ्जलेः गोर्नदीयः, गोणिकापुत्रः, नागनाथः, अहिपतिः, फणिराट्, शेषराजः, चूर्णिकारः पदकारः इत्यादीनि नामानि सन्ति। एभिर्नामभिः इदं स्पष्टं प्रतीयते यत् पतञ्जलिः शेषनागस्य अवतारः आसीदिति। पतञ्जलेः जन्मभूमिः कश्मीरदेशः स्यादिति विदुषां मतम्। पतञ्जलिः B.C. द्वितीयशतके आसीदिति पण्डिताः मन्यन्ते। भोजः स्वनिर्मितशब्दानुशासनग्रन्थे पतञ्जलिम् इत्थं सस्मार -

योगेन चित्तस्य पदेन वाचां मलं शरीरस्य तु वैद्यकेन।

योऽपाकरोत्तं प्रवरं मुनीनां पतञ्जलिं प्राञ्जलिरानतोऽस्मि।।

आयुर्वेदस्य, योगसूत्रस्य तथा च महाभाष्यस्य पतञ्जलिप्रणेतृत्वं प्राज्ञैः प्रतिपाद्यते।

भगवान् पतञ्जलिः चित्तवृत्तिशोधनाय उपायभूतानि योगसूत्राण्यपि प्रणिनाय यानि च विश्वप्रसिद्धानि सन्ति। “अथ योगानुशासनम्” इति सूत्रेण योगसूत्रस्य प्रारम्भो भवति। अनुशासन



शब्दस्यार्थोऽस्ति-उद्दिष्टसिद्धान्तानां प्रतिपादनम् । अतएव इदमनुमानं स्वाभाविकं जायते यत् योगस्य सिद्धान्ता पूर्वम् उपदिष्टाः । याज्ञवल्क्यस्मृतिग्रंथे उल्लेखोऽस्ति यत् महायोगी हिरण्यगर्भ एव सर्वप्रथमं योगस्य उपदेशं प्रददौ । महर्षिणा पतञ्जलिना तस्योपदेशस्यैव सुव्यवस्थितं निरूपणं कृतम्।

योगसूत्रस्य चत्वारः पादाः सन्ति –(१) समाधिपादः (२) साधनपादः (३) विभूतिपादः (४) कैवल्यपादश्च । प्रथमे समाधिपादे चित्तवृत्तीनां समाधिभेदानां च वर्णनं विद्यते । द्वितीये साधनपादे क्रियायोग- क्लेशनाशोपायानां योगाङ्गानां च प्रतिपादनमस्ति । तृतीये विभूतिपादे धारणा – ध्यान – समाधिरूपाणां अवशिष्टानां विशिष्टयोगाङ्गानां प्रतिपादनेन सह योगाभ्यासजन्य –अदृश्यशक्तीनाम् अर्थात् विभूतीनामपि वर्णनं प्राप्यते । चतुर्थे कैवल्यपादे समाधिसिद्धि-निर्वाणचित्त-विज्ञानवादखण्डन –कैवल्यादयो विषयाः विस्तरेण निरूपिताः सन्ति ।

पतञ्जलिविरचितस्य योगसूत्रस्य व्यासभाष्यमिति भाष्यग्रन्थः प्रसिद्धोऽस्ति । वाचस्पतिमिश्रस्य “तत्त्ववैशारदी”, विज्ञानभिक्षोः “योगवार्तिकम् ” हरिहरानन्द आरण्यक विरचिता “ भास्वती” राघवानन्दविरचित “पातञ्जलियोगरहस्यम्” भोजविरचिता “भोजवृत्तिः”, भावगणेशविरचिता “वृत्तिः”, रामानन्दयतिविरचिता “मणिप्रभा”, अनन्तपण्डितरचिता “योगचन्द्रिका”, सदाशिवेन्द्रसरस्वतीकृत “योगसुधाकराख्ये”, नागोजिभट्ट विरचिता “ब्राह्मवृत्तिः, बृहतीवृत्तिश्च”, ओमानन्दतीर्थप्रणीतः “योगप्रदीपश्चे”ति टीकाग्रन्थाश्च लभ्यन्ते ।

चित्तवृत्तिः स्थिरयितुं योगाभ्यास आवश्यको भवति । तत्कृते योगाङ्गानां अभ्यासो विधीयते। योगस्य अष्टौ अङ्गानि अभिमतानि-यमः, नियमः, आसनम्, प्राणायामः, प्रत्याहारः, धारणा, ध्यानम्, समाधिश्चेति—



सूक्ष्मविषयत्वं चा लिङ्गपर्यवसानम् । (प.यो.समाधिपादः अ.1-45)

अधिक श्रमेण मनः, शरीरमपि अधिकक्लेशः अनुभवन्तीति विषयः अत्र प्रतिपाद्यत एवम् –

अविद्या स्मिता, राग, द्वेषा भिनिवेशाः पञ्चक्लेशाः ।।(प.यो.साधनपादः अ.2-3)

अविद्या क्षेत्रम् उत्तरेषां प्रशुप्ततनुविच्छिन्नोदाराणाम् ।।(प.यो.साधनपादः अ.2-4)

विद्यालाभेन रागद्वेषाभिनिवेशाः पञ्चक्लेशादिगुणाः त्युक्तुं साध्यते । Ignorance of the truth concerning.

उपसंहारः

पतञ्जलियोगसूत्राणां नैकवैज्ञानिकांशान् सोदाहरणं प्रदर्शिताः । समाजे जनाः अविज्ञानेन बहुकष्टानि अनुभवन्ति । पतञ्जलियोगसूत्राणां स्थितानां वैज्ञानिकविषयाणां ज्ञानसम्पादनेन मनुजः सुखजीवनमवाप्तुं शक्यत इति शम् ।

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VOW OF ‘APARIGRAHA’ AND IT’S RELEVANCE IN THE CONTEMPORARY WORLD

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Abstract

This paper briefly explains the concept of ‘*aparigraha*’, a moral virtue called non-acquisitiveness. It traces the origin of the concept in Upanishads, Jainism and in the *Patanjali* Yoga Sutra. It describes the concept of ‘*aparigraha*’ enunciated as one of the *yamas* (vows of self-restraint) in *Ashtanga Marga*. It also makes an attempt to interpret Gandhian concept of ‘*aparigraha*’ and its need as enunciated by Gandhi.

It makes modest attempt to relate the concept of ‘*aparigraha*’ in addressing contemporary world issues like environment degradation, growing economic inequalities, unmindful consumptions, ostentatious life styles, corruption, moral conduct, well-being of individuals, conflict resolution, disarmament and peace.

APARIGRAHA:

Aparigraha, is a moral virtue. In order to understand the meaning of it, it would be better to understand meaning of exact opposite of it, ie *Parigraha*, first. According to Jain (2005), “*Parigraha* is defined in Panini’s *Ashatadhyayi* as *Parigrahanam*, *parigraha*, i.e. that which entangles, binds, entraps or enslaves one from all sides. The term “*aparigraha*” – non-possession, non-grasping - has its root in the term “*parigraha*” which means to amass, to grasp, to accumulate, to compile, to seize, to hold, to fence in, and to receive or accept possessions or property. Etymologically, it consists of two terms: “*pari*” and “*graha*”; “*graha*” is rooted in “*grahana*” meaning to take hold of, to accept, to receive or to possess something; “*pari*” means round, roundabout, abundant, rich or fullness”.

Earliest reference to the source of concept of *aparigraha* as a virtue can be traced back to *Chandogya* Upanishad. In this Upanishad, one may find the virtue of *dana* (charity) as a forerunner to the concept of *aparigraha*, though *dana* and *aparigraha* greatly vary from each other. According to Jain (2005), the eminent Indologist Prof. W.Norman Brown in this book *Man in the Universe* had mentioned that *Chandogya* Upanishad, 3.17.4 gives a list of five virtues *tapas* (austerity), *dana* (alms giving), *arjava* (rectitude), *ahimsa* (non-violence), and *satya vachana* (truthfulness) (p.146).



Dana, Kamla Jain (1998) observes is “a feudalistic virtue whereas *aparigraha* is a socialistic virtue. If *aparigraha* becomes a social reality then dana as a virtue will become meaningless”. In *dana*, detachment from objects of the world is implicit or secondary, whereas the well-being of others is explicit or primary. In *aparigraha*, on the other hand, detachment from the world of objects is explicit, and well-being of others in implicit. Dana makes human welfare obvious, and *aparigraha* makes the individual’s moral or spiritual upliftment obvious. Dana emphasizes the act of giving something; *aparigraha* relates to detachment and initial self-control(p.81-82)

According to Mishra (2012), *aparigraha* is ethical ideal of non-possession; of the renunciation of ownership; of liberation from subtle as coarse bonds that possession forge for one. It is a hoary ideal sanctified by every religion.

Jain (2005) writes, while the source of peace and happiness lies within the human self and not in external things, a man devoid of enlightened vision identifies happiness with possessiveness. Mahavira’s prescription for peace and happiness was the limitation of desires and non-attachments to worldly objects. Desires, he says, are “endless like the sky and they will never satisfy any person fully. The more you get, the more you want. Desires increase with every gain”. He further adds, *Parigraha* is attachment or a sort of fascination for material possessions. It is the expression of acquisitive instinct which needs to be curbed or else it feeds on what it gets (p.170).

Aparigraha is one of the five cardinal moral virtues emphasized in Jainism; the other four being non-violence (*ahimsa*), truthfulness (*satya*), non-stealing (*achaurya*), and chastity (*brahmacharya*) (Jain, 2005). Jain (2005) further says, although it is not included in the five-fold scheme of principles of morality (*pancha-shilas*) in Buddhism, it occupies a significant place in the code of conduct, the ten *sikkhapadas* or ten *shilas*, laid down for Buddhist monks and nuns.

APARIGRAHA IN YOGA CONTEXT

According to Jain (2005), the shortcoming (of *dana* in place of *aparigraha*) was rectified in Patanjali’s Yogasutra, which included exactly same five virtues and in that order, the only difference being that they were called *Yamas*. This replacement of the virtue of *dana* by *aparigraha*, Dayanand Bhargava (1968) points out, was influenced by Jainism.

According to Taimni (1961), Astanga Yoga has eight parts and that they are to be taken as related but non-sequential parts, but the manner in which Patanjali has dealt with them in the text shows that they have a certain sequential



relationship.(p186). In Sutra number 30 of *Sadhana Pada* of Patanjali Yoga Sutra, *Yamas* that are vows of self-restraint, mentioned as:

Ahimsaa-satya-asteya-brahmacarya-aparigrahaa yamah

Vows of self-restraint comprise abstention from violence, falsehood, theft, incontinence and acquisitiveness.

He further adds, *Yama* and *Niyama* the first two *Angas* of Yoga are meant to provide an adequate moral foundation for the Yogic training. The very fact that they are placed before the other *Angas* shows their basic character (p.186). He says, it goes to the very bedrock of human nature and lays the foundation of the Yogic life there, so that it may be able to bear the enormous weight of the skyscraper which Yogic life really is. He adds, hatred, dishonesty, deception, sensuality, possessiveness are some of the common and ingrained vices of the human race and as long as a human being is subject to these vices in their crude or subtle forms so long will his mind remain a prey to violent or hardly perceptible emotional disturbances which have their ultimate source in these vices (p.189)

According to Taimni (1961), *aparigraha* is sometimes translated as absence of greediness but non-possessiveness perhaps gives the underlying idea better. In order to understand why it is essential for the would-be *Yogi* to eliminate this tendency in his life we have only to consider the tremendous bias which it gives to our life. The tendency to accumulate worldly goods is so strong that it may be considered almost a basic instinct in human life. Of course, as long as we live in the physical world we have to have a few things which are essential for the maintenance of the body, although essential and nonessential are relative terms and there seems to be no limit to the cutting down of even what are considered the necessities of life.

He adds, but we are not satisfied with the necessities of life. We must have things which may be classed as luxuries. These are not necessary for keeping body and soul together but are meant to increase our comforts and enjoyments. We do not, however, stop even at luxuries. When we have at our disposal all the means that can ensure all possible comforts and enjoyments for the rest of our life, we are still not satisfied and continue to amass wealth and things. One would think that a palace should suffice for the real needs of a human being but one who has a palace is not satisfied and wants to build a few more.

He concludes, these extra things do not serve any purpose except that of satisfying our childish vanity and desire to appear superior to our fellow men. There is no limit to our desire for wealth and the material things which we like to



have around us and obviously, therefore, we are dealing here with an instinct which has no relation with reason or commonsense (p.194-196).

APARIGRAHA, AS A VOW OF GANDHI

According to Satish Sharma (2005), Rajchandra Ravijibhai Mehta who was Jain Philosopher and Gandhi's teacher influenced young Gandhi. He conclusively writes, Gandhi clearly imbibed the spirit of Rajchandra.

Gandhi has prescribed eleven vows to be followed by inmates of Ashram he had established in Kochrab, in 1915. The eleven vows are Satya-Truth, Ahimsa-Nonviolence, *Brahmacharya*- Celibacy *Asteya*- Non-stealing, *Aparigraha* - Non-possession, *Sharira-Shrama*; Physical labour or Bread Labour, *Asvada*-Control of Palate, *Abhaya*-Fearlessness, *Sarva-Dharma-Samanatva*- Equal respect for all Religions, *Swadeshi*- Duty towards Neighbour and *Asprishyatanivarana* - Removal of Untouchability.

According to Veena R Howard (2013), "In 1903, he (Gandhi) pondered: "I turned to this dictionary of conduct (The Gita) for a ready solution of all my troubles and trials. Words like *Aparigraha* (Non-Possession)...gripped me: How was one to divest oneself of all possessions? Was not body itself possession enough? Were not wife and children possessions?" These thoughts seem presage Gandhi's life of intense renunciation. His attitude towards his wife Kasturiba seems transformed from jealous possessiveness to objective dispassion.

According to Bindu (2015), "*Aparigraha* was usually translated by Gandhi as non-possession but it is common for translators of the Yoga Sutra to translate it non-acquisitiveness. That also seems to capture the sense of what Gandhi meant by the term. In that sense *aparigraha* would be freedom from the Greek vice of Pleonexia, wanting more than one's share, or acquisitiveness"

She adds, if one is not acquisitive for the absorption of things into the greedy mechanism of the egoistic self, then one will not be attached to things, ideas or persons. Consequently one can argue that the real sense of Gandhi's *Aparigraha* was not freedom from possession but freedom from acquisitiveness, or a desire for things as such. That such acquisitiveness could indeed be the cause of much concentration on the self and moral failure is apparent enough.

According to Mishra (2012), for Gandhi, non-possession means non dependence on material things. It implies total abolition of private property in all kinds of belongings. This view is more radical than that of extreme communists. To Gandhi, stealing lies in possessing something which is all needed now. Non-possession is the result of non-stealing. He says, "I (Gandhi) suggest, we are thieves in a way.



If I take anything that I did not need for my own immediate use and keep it, I steal it from somebody else. I suggest it is the fundamental law of nature. Without exception that nature produces enough for our wants from day to day and if only everyone took enough for himself and nothing more than would be no pauperism in the world”

He further states, Gandhi cited five reasons for non-possession;

1. Possession is not present in nature. God creates everything in accordance with the need of the hour. So possessing more than the need reveals man's thief mentality.
2. Right from birth man depends upon the things created by both nature and society. Using this without replacing them makes him thief. Moreover, he stands as a debtor both to nature and society. Even when he uses anything, he should replace them through his labour-physical, mental and spiritual.
3. Hoarding for future deprives the real needy.
4. The attitude of possessing leads to the manipulation of wants. Consequently it results in lack of peace, both in the individual and in the society.
5. Possession implies all kinds of troubles. It is always accompanied by force. A man having faith in non-violence never resorts either to possession or to force; he prefers non-possession.

He adds to say, Gandhi states “But what am I to advise those who are already wealthy are who would not shed their desire for wealth? I can only say to them, that they should use their wealth for services”. Mishra (2012) opines that this is a practical way to bring the wealthy to take the vow.

RELEVANCE IN THE CONTEMPORARY WORLD

Environment: According to Jain (2005), the pursuit of unrestrained gratification of desires leads to the over-exploitation of natural resources (p.170). The vow of aparigraha makes one to understand that there is enough in the nature to satisfy ones needs. According to Mishra (2002), Gandhi suggested it is the fundamental law of nature. Without exception that nature produces enough for our wants from day to day and if only everyone took enough for himself and nothing more than would be no pauperism in the world. Mindful use of natural resources would control environmental pollution and bring down the emissions in order to curtail climate change



Bridging the economic inequalities: Global estimates of personal incomes of people clearly indicate wide spread inequalities. Such inequalities deprive share of usage of natural resources to substantial chunks of people. The concept of scarcity would need to be redefined. Poverty anywhere is a threat to prosperity everywhere. Further, on propagation and ingraining the concept of *aparigraha*, many people would voluntarily come out of greed to earn more and more at the cost of personal, familial and social costs. If the concept of *aparigraha* is imbibed in the people at large, many would opt out of government incentives and even assist the administration to identify of real beneficiaries of any government schemes.

Mindful consumptions: The concept of *aparigraha* helps a lot to understand real needs of consumption especially the food intake. This would apart from resulting in fall of demand in the market and lowering of prices, even creates healthy and happy life.

Reduction of ostentatious life styles: *Aparigraha* makes one to have a simple life. Encouragement to such life styles in the society, would curtail flamboyant styles which creates avoidable disturbances in the minds of many.

Elimination of corruption: Greed is one of the main reasons for corruption. Inculcating the culture of *aparigraha* makes the nation corrupt free and thereby more morally strong.

Moral conduct: *Aparigraha* lies deep in the moral bedrock. Restraint on acquisitiveness is one of the highest moral elements in human life.

Wellbeing: According to Jain (2005), the exploitation of fellow human beings and considerable tension for himself as well social strife. They not only disrupt our peace of mind, affect our health and deprive man of happiness, but also have harmful social consequences (p.170). More things in life can cause more anxiety and depression and resultant lower wellbeing.

Conflict Resolution: Resolution of disputes between individuals groups and even between the nations is quite possible, if the opposing sides are made to redefine the issues at stake. According to Weber (1991), for Gandhi, the rules of morality that ought to guide the lives of individuals should likewise guide the interactions between nations. The rules governing means and ends, truth and nonviolence were, for him, equally applicable in the international sphere.

Disarmament – Peace: Gandhi states, the attitude of possessing leads to the manipulation of wants. Consequently it results in lack of peace, both in the



individual and in the society. Non-acquisitiveness of arms would lead to disarmament in the world. According to Weber (1991), Gandhi believes that if one side makes a small unilateral gesture of disarmament to reduce tension and the other side reciprocates a further such move-thus starting the process of disarmament. If the opponent does not reciprocate after the first move, the side making the initial gesture should wait and then make a second move regardless. (p.98)

Iyer (1973) points out, “Gandhi refused to believe...that society is governed by laws of growth which are beyond the ability of any individual to alter. At the heart of all his personal and social actions “lay an insistence that individual will and reason can effect social and political change”. Iyer adds, at any rate Gandhi firmly believed in the perfectibility of the individual and of the flow through effect to society.

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ADMINISTRATION FOR WOMEN EDUCATIONAL DEVELOPMENT OF TRIBES

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Abstract

Education system should make an individual better suited to the needs of the ever changing dynamic world. The changes in the educational system should also reduce the social gaps by enabling proper recognition to whatever extent one is able to pursue or acquire a skill. The tribal community all over India have been subjected to various forms of deprivation such as alienation from land and other resources. Especially the tribal women though they are away from the main stream of national life, but they are not kept away from the impact of socio – economic changes effecting the society in general. In this process of change, the tribal woman is forced to adhere to certain norms which may even take away her freedom, her control over the traditional productive system, her house, family and children and even her own life. The fact remains that a large number of tribal women have missed education at different stages and in order to empower them there is a great need of providing opportunities so as to enable them to assume leadership qualities for economic self-reliance and even social transformation.

Keywords: Tribal Women, Education, Development, Administration

Introduction

The Scheduled Tribe population represents one of the most economically impoverished and marginalized groups in India. There are more than 400 tribal groups among the scheduled tribe population, each with their distinct cultures, social practices, religions, dialects, and occupations. Thus, the different tribal groups are highly heterogeneous, and their differences are a function of the environment in which they live, the degree of exposure to the mainstream Hindu population, government involvement in their daily lives, their economic status, and past history. The tribes are scattered in all States and Union Territories in India except for the states of Haryana, Punjab, Delhi, and Chandigarh. The tribes are heavily concentrated in the northeastern states of Arunachal Pradesh, Meghalaya, Telangana, Andhra Pradesh, Mizoram, and Nagaland although they constitute a small percentage of the total tribal population in India. The total number of tribal communities recognized by the government as Scheduled Tribes is 572 in number. Scheduled Tribes are those tribal communities who have been



listed so by the President of India in keeping with Articles 341 and 342 of the Constitution. These tribal communities mainly live in Scheduled Areas, or those outlying areas, which during the British times did not come under the direct purview of civil, criminal and revenue administration.

Women are nearly the half of the total population size of a society. That is why, their participation in economic development activities is very important. In this respect, the Tribal women can take a decisive role to up life the economic status of the community. Generally the women section of the tribal community are very active in household as well as in economic activities. They are born weaver, skilled in agricultural and allied activities but the modes of operation of economic activities are primitive in nature. The causes behind it are low rate of literary of the women section in the community, low rate of capital formation of the community etc. That is why, women section of the community generate low rate of income in their economic activities.

The Problem of Tribal Education:-

The vulnerability of tribal populations to exploitation by minor government officials, as well as money lenders, landlords, and other agents of vested interest, can largely be traced to their illiteracy and general ignorance of the world outside the narrow confines of their traditional environment. Their inability to cope with the many novel forces impinging nowadays on tribal villages and on an economy which had remained virtually unchanged for centuries is by no means due to any innate lack of intelligence. As long as they operate within their familiar atmosphere, tribals evince as much perspicacity, skill, and even true wisdom as any other populations, but as soon as they are faced by social attitudes rooted in a different system they become insecure and often behave in a manner detrimental to their own interests, brought up a system in which all communications are by word of mouth, and hence used to trusting verbal statements, they get confused by constant reference to documents and written rules, which increasingly determine all aspect of rural life. Unable to read even the receipt given by an official and obliged to put their thumb impression on documents which they cannot understand, they are easy victim of any fraud or misrepresentation which more educated exploiters likely to devise.

It is obvious, therefore, that a modicum of literacy is indispensable as a first step towards enabling tribes to operate within the orbit of the advance. Communities dominating the economic and political scene. The disadvantages under which illiterate tribes labour are multiples in the case of those who do not even speak and understand the language of the dominate population, and hence cannot communicate with officials except through better-educated fellow tribesmen acting as interpreters. Among the teachers working in tribal schools at present of not-tribal origin generally have higher educational qualifications than their tribal colleagues. Nevertheless, their efficiency as teachers is not necessarily higher



than of tribal teachers. Their appointment to schools in a tribal area is usually purely accidental.

Tribal Female Education:-

Tribal women remain most exploited and vulnerable segment of the population because of their isolation, poverty, general social backwardness and voluntary organizations for the female population among tribals have made little practical impact, though levels of awareness seem to have risen. The sorry state of Tribal women can only be alleviated through proper education. The lack of education limits their awareness of the benefits of learning. Planning for educational facilities requires a good measure of sensitivity that takes into account the need for modernization and the need to preserve and promote traditional lifestyle. Education has to be viewed not in terms of literacy but as training for better life and social adjustment. Education of girls and women is particularly because if a women is educated the entire family gets educated. Education increases women's power and self-respect and helps women to take sound decisions on the matters of children. Unless the tribal women are educated the effort to spread education and socio economic development among tribals is unlikely to succeed.

At the same time, education must be geared to the economic needs of the community. Besides being producers, processors and of essential of food to their families' tribal women are also earners of essential cash income, which goes towards the family basic needs. Tribal women have, therefore, a dual economic role to play as unpaid laborers at home and in the fields, and paid labourers outside the home. Most of the female workers are engaged in agriculture related works.

The health status of tribal women is very grim. Tribals are In general unhealthy and ill. A survey of health status has expressed the extremely low health status of tribals. It is or disability. About 10 percent had suffered some kind of defect related to the age. Only less than 8 percent of children were immunized; 2/3 of children under 5 were malnourished, 44 percent having severe malnutrition. A large majority (70) took tobacco... Most of them did not wash their personal cloths regularly (90%) An average tribal woman married at the age 15 and had 6 children, about 7 lived in about two rooms. The extent of scientific information, attitude in relation to physical and mental health, diet and nutrition, family planning and child care including feeding and hygienic health habits were almost negligible, the overall average score being about 1 percent.

Objectives of the study:-

The present study is a modest Endeavour to look into the effectiveness of educational programmes, projects and schemes introduced by the government, and the processes involved thereof in the development of tribal people and society.



1. To ascertain whether the existing educational system in primary and secondary levels in tribal areas are suitable to cater to the needs and requirements in the backdrop of National Policy on Education.
2. To look into the state of primary and secondary education, enrolment of tribal students with particular emphasis on female education, quality of education, their success rates etc.
3. To assess the effectiveness of various non-formal education system in the context of female tribal students; and
4. To examine the impact of administration of various educational schemes, incentives and concessions provided by the government to the tribal students in general and tribal female students in particular.

Methodology

For the purpose of the present study the data has been collected through the secondary data. The secondary data has been collected books, journals, reports, newspapers, magazines etc.,

Tribal Women Educational Development

An education system should provide a new culture of work ethos and an array of young talented, skilled and well equipped target group who will be able to shoulder the developmental responsibilities. It should make an individual better suited to the needs of the ever changing dynamic world. The status of any social group is determined by its levels of literacy, education, standard of living and health nutrition. The tribal women constitute like any other social group, about half of the total population, tribal women work harder and family economy and management depend on them. It has been reported that illiteracy, in tribal as well as non-Tribal population, is positively correlated health. As women in all social group, they are more illiterate than men. In general, their lower literacy rate, lower enrolment rate and their presence in the school. United nations has defined the status of women as the “conjunction of position a women occupies as a worker, student, wife, mother..... of the power and prestige attached to these positions, and of the right and duties she is expected to exercise”. Education gives them decision making.

Economic status and empowerment always go hand in hand. Today's tribal women society wishes that their future would be good. They do not want their children to suffer as they have suffered. They demand good educational and job facilities for their children. Slowly educational status of women and their children, accessibility to all kinds of infrastructural activities improved decision making capacity in all important aspects is appreciable in status like Gujarat.



Article of the constitution of India lays down that the state shall promote with special care the educational and economy interests of the weaker sections of the people and in particular of the scheduled tribal and shall protect them from social injustice and all forms of exploitation. A large number of tribal women have missed education at different stages and in order to empower them there is a great need of providing opportunities so as to enable them to assume leadership qualities for economic self-reliance and even social transformation

Status of Tribal Women

The status of women in a society is a significant reflection of the level of social justice in that society. Women's status is often described in terms of their level of income, employment, education, health and fertility as well as their roles within the family, the community and society. In tribal communities, the role of women is substantial and crucial. They constitute about half the total population but in tribal society women are more important than in other social groups, because they work harder and the family economy and management depends on them. Even after industrialization and the resultant commercialization swamped the tribal economy, women continued to play a significant role. Collection of minor forest produce is done mostly by women and children. Many also work as laborers in industries, households and construction, contributing to their family income. Despite exploitation by contractors and managers, tribals are more sincere and honest than non tribals.

Employment

The critical analysis of nature of employment helps to understand the economic liberty of the females. Economic self independence empowers the women to take its own decision. The family and society give due respect to their opinion and looks upon them for all matters. The study reveal that only 46.7% of the female population are employed, out of which 80 percent of them work as agricultural labour and thus have seasonal employment, 11 percent are self employed(selling handia, and forest product).and rest 9 percent are daily wage labor.

Conclusion

Education to women is as essential as to men. It makes women to find the right way to development. Even today in most parts of the country, the tribal women remains steeped in superstitions and ignorance with men presiding over their destiny. The main aim of education is to change the cultural norms and patterns of life of tribal women to make them economically independent, to organise themselves to form strong groups so as to analyse their situations and conditions of living, understand their rights and responsibilities and to enable them to participate and contribute to the development of women and the entire society. The population of STs is very high in some states and in some states there are no STs. With regard to the literacy rates, female literacy has raised considerably in the past four decades both in urban as well as rural areas. Moreover the



percentage of Schedule Tribe girls in higher education has been gradually increasing.

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DETERMINANTS OF VOTING BEHAVIOR IN INDIAN POLITICS: A SPECIAL REFERENCE TO THE RECENT ASSEMBLY ELECTIONS IN KARNATAKA

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India is a diverse and a biggest democratic nation in the world. People here who follow the composite culture always play a key role in determining many things. Not the only cultural, social and religious issues politics also a passion of interest of the people of this land. As it is a composite social formation and deep diversity rooted deep in this land studying political trends and voter movements are very difficult. The constitution makers struggled a lot to carve the democratic values in social, economic and political. Even though we achieved the political democracy with 'one vote-one value' still struggle to achieve social and economic democracy. The social and economic democracy could be achieved through political democracy only. So, the study of determinants of electoral behaviour constitutes a very significant area of empirical investigation. Hence vote plays a crucial role in achieving equal, egalitarian society I want to concentrate on how people are selecting their candidates in the elections through the means of vote. The main purpose of the present study is to focus attention on voting behaviour in India and to highlight the factors that determine the voting behaviour in India.

This paper divided into two parts. The first part deals with the theoretical definitions of various authors views on determinants of voting behavior. The second part focuses on the recent Karnataka vidhan sabha elections and on how voting patterns are changing in the recent political games.

There are many academicians who defined the term 'Voting Behavior'. Let us try to take some of their views. Emeritus political scientist Stenphen Wasby defined the voting behaviour as it includes of individual psychological patterns and their relation to political action as well as institutional i.e medium communication and its impact on elections.

Theoretical Description:

The voting Behaviour has recently been expanded in the meaning and is taken as one major and broad area of study. Plana and Riggs argues that "voting



Behaviour, is a field of study concerned with the ways in which people tend to vote in public elections and reasons why they vote as they do.” Samuel S. Eldersveld in his ‘theory and Method in voting Behaviour’ says ‘the term ‘Voting Behaviour’ is not new concept and involves in political and election process only. It has been there since long back and it also involves an analysis of individual psychological processes (perception, emotion and motivation) and their relation to political action as well as of institutional patterns. Gordon Marshall writes in his first Indian edition of Oxford dictionary of sociology writes “The study of voting behaviour invariably focuses on the determinants of why people vote as they do and how they arrive at the decisions they make”. He focuses on why and how voters choose their representatives.

However, keeping in view of Indian voting behaviour , in his famous research work ‘Political Behaviour in India’ Prof. V.M. Sirsikar well said “An enquiry into the process of elections indicates factors other than rationality. Man is a rational creature in the philosophical sense. But he is not so rational in the realms of his political behavior. The behaviour of a man is influenced by several irrational factors. Those may be religious and communal factors, influence of money or charismatic personality of a leader and host of other irrational forces have their definite influence on the minds of the voters. Oinam Kulabidhu in his book ‘Electoral politics in Manipur’ writes “Voting behaviour may be defined as the behaviour that explicitly reflects voter’s choices, preferences, alternatives, ideologies, concerns, agreements, and programmes in respect of various issues, questions pertaining to the society and nation”.

After a detailed study by Richard Rose and Harve Massaavir identified the important functions voting covers are 1. individuals choice of governors and major governmental policies, 2. individuals to participate in a reciprocal and continuing exchange of influence with the office-holders and candidates, 3. the development or maintenance of an individual’s allegiance to the existing constitutional regime, 4. emotional significance for the individuals; and for some individuals it may be functionless, i.e. devoid of any significant personal emotional or political consequences.

Election Studies in India: Studying elections in the largest democracy in the world is a challenge. Election studies in India were mainly influenced by western studies, particularly the Columbia and Michigan studies in the United States. The scholars of Columbia University gave attention to the influence of social and environmental forces on the choices of voters. While the studies undertaken by the Michigan Survey Research Centre given more importance to the psychological variables and of the individual voters. In reaction to the excessive



emphasis on socio-psychological variables by the above two schools, another group of scholars with a view to redressing the balance in voting research, tended to draw attention to the impact of political variables on voters choice.

India is the largest working parliamentary democracy in the world. All men and women of 18 years or above age have the right to vote in Indian elections. They participated in elections in the past to elect their representatives. They have participated in elections like Lok Sabha, State legislative Assemblies, large number of bi-elections and even in local body elections. Scholars have conducted surveys to study elections that held in India since 1952. These studies lack methodological base and scientific data analysis. But in the later period studies of election politics and voting behaviour were made the research tools used by psychologists became increasingly sharpened. At the outset of these studies were journalistic in nature. However, with the introduction of survey method and observation technique the quality of election studies in India rapidly changed the subject.

In India elections largely studied by political scientists, but the social anthropologists in this regard cannot be ignored. Special mention must be given to F.G. Baily and A.C. Mayer who have dealt with elections mainly at micro-level. With the help of both participants and non-participants observation technique they have developed into the election politics and voting behavior of the voters. They have further emphasized the linkage between local, state and national politics which is woven round patronage and brokerage. They have highlighted the “Machine” character of election politics

Determinants of Voting Behaviour:

The Voter behavior in India is influenced by several factors. Those are religion, caste, community, language, money, ideology, purpose of the polls, political parties and etc. The political parties make use of these factors for the sake of winning the battle of the ballot box. Politicians exploiting the factors of language or money to achieve the purpose of emerging successful in the war of votes and even they don't hesitate provoke the religious and communal sentiments of the people. Appeals are issued and canvassing campaigns are conducted in the name of a particular ideology for the purpose. Accordingly, the nature or purpose of the elections or the extent of the national suffrage is also influenced by the interest of the voters and their behaviour at the time of voting. The power of charisma has its own part to play where by voters are influenced en masse by the slogan of “Garibi Hatao”, vote for panditji is vote for stability and progress; ‘Indira means India, India means Indira’ and the like.



Voting Behaviour studies can be divided into two major categories; one school of thought has followed the sociological approach. It stresses the fact that socio-economic and ethnic status is related to the process of the voter's choice. This approach deals within the various social strata (ethnic, religious and economic) the political parties maintain fairly constant rates of support which differ markedly from one stratum to next. In order to account for this, one has to assume that political discussion goes on mainly within certain groups and is much less likely to cross social barriers of all kinds.

The other school of thought is represented in contrast with the sociological approaches developed the psychological and political approach. The psychological approach does recognize the role of social characteristics like socio-economic status, religion and family influence. However, it argues "The distribution of social characteristics in a population varies but slowly over a period of time. Yet crucial fluctuations in the national vote occur from election to election. Such fluctuation can't be accounted for by independent variables which over brief spans of time, do not vary. The attitudinal approach directed more attention to political objects of orientation such as the candidate and the issues, which do shift in the short term.

The immediate determinants of voter behavior are Parties, candidates and issues. They are the intervening variables which involve between more permanent sociological and political forces that operate upon the voter and his actual vote. The psychological school has concentrated on three variables, party identification, and candidate-orientation and issue orientation. They recognize these as the most significant factors. The party identification meant voters psychological attachment to a particular political party. The issue orientation meant the attitude of a person towards current questions as to what the government should do or should not do. Whereas the Issue orientation meant parties do not adopt clear cut and distinct positions on current issues. Voters are most concerned about general issues than specific issues. Candidate-orientation means the attitude of the voter towards the personal qualities of the candidate. This can be broken up further into his performance, capabilities and his personal qualities like his honesty, his religious devotion etc. candidate-orientation is significant factor. The data pertaining to the elections and the electoral process can help us to analyze the voting behaviour of the people of India. Infact, the voting behaviour studies conducted in India have identified the following main political and socio-economic factors which act as determinants of voting behavior in India.



Caste

Caste continues to be a determinant of voting behaviour in India. It has deep roots in the society and constitutes an important basis of social relations at all levels. Despite the adoption of several revisions which prohibit action and discrimination on its basis, caste continues to be a determinant of political behaviour. Votes are demanded in the name of caste. “Jat Ki Vote Jat Ko.” Brahmin votes vs Jat votes, Jat votes vs Ahir votes etc., are commonly used ‘principles’ in planning election strategy.

In a highly caste-ridden state like Karnataka, all election debates finally lead to caste analysis. According to “leaked” caste census, upper castes have about 35% of population and the AHINDA (Kannada acronym for minorities, backward classes and Dalits) including STs, has 60% population. Some Congress men say that Kurubas as their vote bank constitute 7% of the total population and about 30% of the OBC population. The Muslims are about 16%, Christians 2-3%, Kurubas 7%, Dalits 19.5% and STs 5% are a formidable combination.

In the early 1970s Congress led by Devaraja Urs had put an end to upper caste Lingayat and Vokkaliga hegemony in Karnataka politics. In the last 20 years the same combination has got disintegrated and has not actually voted as a block to any single political party. The BJP’s core vote bank is Lingayats, who constitute about 14% of the state’s population. Some Lingayat organisations claim that they are over 17%. The separate religion fight and Congress’ full backing to that demand have complicated the matters this time.

According to “leaked” caste census JDS core vote bank Vokkaligas are 11% of the total population in Karnataka. However Vokkaligas claim that they are 15-16%. In 2004, the JDS won 58 seats creating a badly hung Assembly with the support of OBCs, Dalits and Muslims.

By observing the above caste calculations shows very clearly that how caste is playing a key role in the politics. All three major parties Congress, BJP and JDS and some of their own leaders and the political analysts are furiously debated several post-poll scenarios on the caste lines.

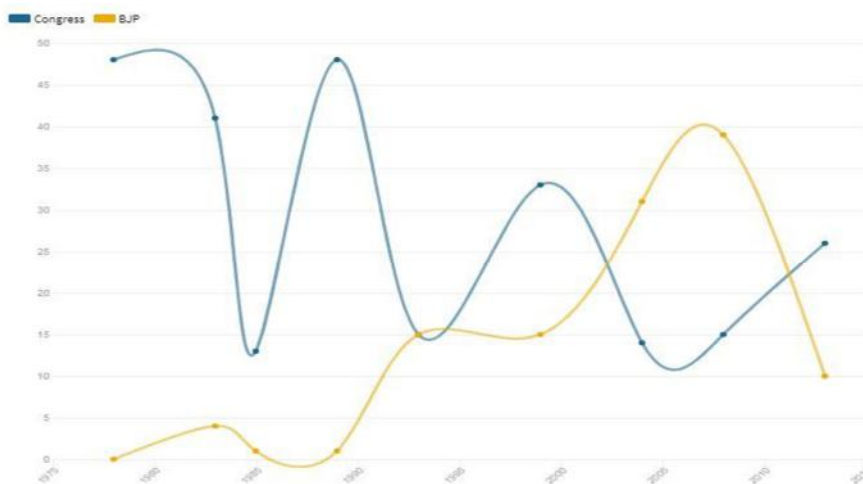
Religion:

India is secular country. Every citizen having equality to choose his/her desired religion. This shows that the state will not recognize and encourage any particular religion. This non identification religion by the state has not been successful in preventing the religion as a determinant of political behavior in India. The political parties and some religious organizations are directly



participating by influencing the voter in the elections. For example BJP, RSS, MUSLIM LEAGUE, HINDU MAHASABHA, SHIV SENA, AKALIDAL etc. This has been one of the reasons which influencing voter continuously since long back. Since the religion became a major tool the political parties are always biased towards some certain religions. So, the religious pluralism of Indian society is a major role of the Indian political system.

If we observe the recent Karnataka Vidhan Sabha elections the religious factor played a key role. The Lingayats fight for separate religion have complicated the matters this time. Lingayats not only influence the game but they even make the elections in Karnataka all the more interestingly. The community is a crucial factor in Northern Karnataka, which includes more than a third of Karnataka's 224 seats. The BJP projected B. S. Yeddyurappa, a Lingayat, as its Chief Ministerial candidate, all through its campaigning to get the major share of this vote bank in favour of them. They thought that making Lingayat strongman and the party's chief ministerial candidate to contest from the north could impact 12 districts (96 constituencies) with a loyal Lingayat base. In 2013, Yeddyurappa floated his own party – the Karnataka Janata Party – on the eve of the state assembly elections, ensuring that the BJP was relegated to the third position while the Congress went on to form the government. As a result, the Congress garnered almost 15 per cent of the total Lingayat votes in that election. The bellow graph shows how the Congress and BJP have been growing and falling in getting Lingayat vote bank in the course of the time.





Language:

India is a hub of multiple languages. There several hundreds of languages and dialects India. But the state recognized only 22 languages officially. With the establishment of linguistic states in 1956 with Andhra Pradesh firstly the political screen has been changed. Even though we cannot agree with linguistic nationalism we can't deny the role of language in the elections and forming the government. Language has been using as a tool of political polarization. There are problems of recognizing the status one particular language in a state. For example: In Karnataka there is a demand that only Kannada should be the medium of instructions in schools, but it is very problematic as it is being opposed by other ethnic groups. Such problems are presenting in almost all the states since people have emotional attachment with their languages, they easily get influenced whenever there comes up any issue relating to language. Linguistic interests always influence voting behaviour.

Money Factor

The influence of money as the tool of voter behavior can't be ignored. The political participants are spending money like water in electoral wars. Politicians never cared the People act of 1974 which put a ceiling on money that a candidate spent in the elections. The drawback of the amendment to the act is that the amount spent by a party shall not be taken as expenditure made by the candidate. In the recent times the cost of the elections had been increased than the cost of living. The political funding from the big corporate houses gave boost to escalate the cost of making elections. There is no transparency of funding from different sources to the political parties. But in 2014 when the Election Commission made it mandatory for them to disclose details at least as far as electoral trusts were concerned. Even still money flow to the political parties increased significantly. According to data released by the Association for Democratic Reforms (ADR) collections have shot up more than three times from 2013 to 2017. The political analysts argue that the recent act of Demonetization by BJP government is not intention of stopping black money but of suppressing of financial resources of political opponents. The enforcement agencies call the recent Karnataka elections the largest poll-related haul in India with the value of cash seized by the income tax department has seen a 500% increase since the previous assembly elections.

Current events:

The current issues and problems faced by people also impact on voter behavior. The current issues like price rise, wars, food shortages, assassination of political leaders, natural calamities, economic hardships faced by the people decides the fate of political participants. For example: the 1971 indo-pak war, 1984 assassination Mrs. Indira Gandhi, 1991 assassination of Rajiv Gandhi was turned



the favour of the Congress in the elections. The implementation of the Mandal Commission Report by the Janta dal Government in 1990 played a definite role in descending its popularity.

Local Issues:

Local demands and regional issues influence the voters. The regional parties talk the aspirations of the people of the particular regions. The classic example for this is the recent Telangana Movement and aftermath TRS winning in 2014 elections. The Telugu Desam Party in Andhra Pradesh, Jharkhand Mukthi Morcha in Jharkhad, DMK in Tamilnadu are other classic examples of the present politics. State Assembly elections were largely determined by its image as a local party identification with the local interests of the state and having a good support with the centre. All regional parties try to win elections on local issues. In fact, all agencies of public opinion always act as determinants of voting behaviour. In the recent Karnataka elections the five local issues that really attracted the voter are Kannada Pride, Agrarian distress, water Crisis, Nepotism and Urban Decay. The renowned social scientist Narendar Pani said grass root level issues were dominated the campaign narratives in Karnataka. He says that the issues are being thrown up from below, not coming down from above.

Election Campaigns:

Election campaigns influence voter not less than any other factors. Each party plans a huge campaign meeting for influencing the voter in its side. These campaigns are organized in different methods like Mass Meetings, Road shows, Posters, Film Stars Speeches, T V and Radio broadcasts, Advertisements in Papers in Print and Electronic media and etc. In the recent election campaigns in Karnataka appeared to be “keeping your word”, with all political parties and leaders. Congress set the ball rolling with their campaign slogan “nudidante nadediddeve” (we have kept our word) and listed all the promises that the party had made in its 2013 manifesto. The party released several advertisements across the state with the slogan, showcasing government policies and schemes.

Rahul Gandhi picked up the baton and asked Modi to “nudidante nade” (keep your word) in campaign speeches all across the state in the past two months. This is wordplay on a vachana (philosophic poem) by Lingayat mentor and poet Basaveshwara, which says if you don’t keep your word, Lord Shiva will not be happy with you.

The election campaigns are designed to make a voter believe that his interest can be best served by the party/the candidate of the party contesting from his constituency. Thus acts as an important determinant of voting behaviour.



A factor that stands out in the the Karnataka elections is a sea-change in campaign narratives across political parties. There is hardly any reference to old leaders such as Indira Gandhi, Rajiv Gandhi, A B Vajpayee and L K Advani in campaign speeches as politicians trade sharp barbs on local and sub-regional issues that resonate with the locals. Analysts say Slogans like ‘Garibi Hatao’ no longer has any resonance among the electorates.

Other Factors:

In addition to the above explained factors several other factors which determine the voting behaviour of the Indian electorate are political events preceding an election like war, murder of a leader, corruption scandals, etc., Economic conditions at the time of election like inflation, food shortage, unemployment, etc., Factionalism – a feature of Indian politics from bottom to top levels, Age – old or young, Sex – men or women, Education – educated or uneducated, Habitation – rural or urban, Class (income) – rich or poor, Family and kinship, Candidate orientation, Election campaign, Political family background, Role of media.

Conclusion:

In a democratic nation like India elections play a key role government formation. In elections people express their opinion by casting their vote elect their political parties and candidates and regulate the political administration in the society. However the behaviour of a voter is influence by several factors elections should be conducted in a very free and fair manner. Mere winning in the elections by using the above determinants can't make the system democratic. Elections need to be conducted in a fair manner. Provoking the people sentiments making vote bank politics should be avoided. The will of people is expressed through voting in elections and therefore, all undemocratic and unfair means like manipulating and rigging need to be avoided.

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कुमारसुतभास्करयोगिना विरचितायाः बृहत्संहिताटीकायाः उत्पलपरिमलाख्यायाः वैशिष्ट्यम्

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कुमारसुतभास्करयोगिना विरचितायां बृहत्संहिताटीकायाम् उत्पलपरिमलाख्यायां ग्रन्थकर्त्रा वराहमिहिरेण ग्रन्थादौ विहितस्य मङ्गलाचरणस्य वैशिष्ट्यानि किञ्च चिकीर्षितस्य ग्रन्थस्य निर्विघ्नपरिसमाप्तिप्रचारादिप्रतिबन्धकदुरितप्रशमाय कृतं मङ्गलम् अध्येतृणां अनुषङ्गतो मङ्गलाय च निबध्नाति इत्यादिविषयाञ्च टीकायामादौ प्रतिपाद्यते यथा अथ आवन्त्यकाचार्यवराहमिहिरः शाखास्कन्धमारभमाणः तदादौ शिष्टाचारसिद्धं प्रारब्धविघ्नपरिसमाप्तिप्रचयगमनफलं स्वशास्त्रप्रतिपाद्याभीष्टदेवतादित्यात्मकपरब्रह्मविषयं वाङ्मनःकायनिर्मितं प्रणामरूपं मङ्गलाचरणं वाक्येन निबध्नाति शिष्यशिक्षायै इति।

अत्र व्याख्यायां मङ्गलादीनि मङ्गलमध्यानि मङ्गलान्तानि च शास्त्राणि प्रणीयन्ते, वीरपुरुषाणि भवन्त्यायुष्मत्पुरुषाणि च अध्येतारः वृद्धियुक्ताः यथा भवेयुः इति भाष्यप्रामाण्यात् मङ्गलस्य कर्तव्याताकत्वं बोध्यते। मङ्गलकरणेन ग्रन्थरचनायां भूयमानाः विघ्नाः ग्रन्थाध्ययनदशायां छात्राणां कृते जायमानाः विघ्नाश्च ध्वस्ताः भवन्ति इति सूच्यते च। अत्रत्यं मङ्गलम् वाक्येन निबद्धं चेदपि वाङ्मनकायनिर्मितं प्रणामरूपं भवतीति व्याख्याकारः स्मारयति। अतः तादृशमेव मङ्गलं प्रकृतग्रन्थाध्ययनकाले गुरुणां सविधे विधातव्यमित्यर्थोऽपि अनुक्तसिद्ध एव।

किञ्च आशीर्नमस्किया वस्तुनिर्देशो वापि तन्मुखम् इत्यादिशास्त्रसिद्धत्रिविधेषु मङ्गलेषु इष्टदेवतानमस्कारात्मकम् एतच्छास्त्रप्रवर्तकदिवाकरविषयं मङ्गलम् अत्र कृतमिति सूच्यते।

पदच्छेदः पदार्थोक्तिर्विग्रहोवाक्ययोजना

आक्षेपोपसमाधानं व्याख्यानं षड्विधं मतम्

इति व्याख्यानलक्षणानि समान्यपि व्याख्यानेस्मिन् समुल्लसन्त्येव। तदग्रे प्रत्येकमपि प्रस्ताव्यते च।

अनन्तरं मङ्गलश्लोके विद्यमानानां प्रत्येकमपि पदानाम् अर्थं व्याख्यानकृत् सुष्ठु वर्णयति। मङ्गलश्लोके विद्यमानेन जयति पदेन सर्वोत्कर्षवर्तनद्योतकेन देवतां प्रति स्वप्रहृता सूच्यते। यतः सर्वस्माद् देवतामुत्कर्षयन् सर्वस्य तत्प्रहृतया स्वयं च प्रणतोऽस्मीति नमस्करोत्येव इत्यर्थविस्तारं व्याख्याकारः प्रददाति। परब्रह्मणः सर्वं प्रति कारणत्वात् प्रसूतिशब्देन केवलं निमित्तकारणमेव स्वीकरणीयं वा इति शङ्कायां प्रसूतिः उपादानकारणं निमित्तकारणं च भवतीति उच्यते। विश्वात्मा इति शब्देन जगन्मयो जगदन्तरात्मा च परामृश्यते। श्लोकेऽस्मिन् विद्यमानेन सहजभूषणपदेन तस्य नित्यत्वं च द्योत्यते। सहस्रमयूखमालामण्डितत्वेन दिवाकरस्य अनन्तप्रकाशित्वं सूच्यते।



मङ्गलश्लोके श्रौत-आर्थिकभेदेन व्याख्याकृता अथद्विविध्यं प्रदर्शयते यथा - सर्वजगत्कारणं सर्वात्मकम् अनाद्यनन्तम् अनन्तप्रकाशम् अशेषपुरुषार्थफलप्रदं सर्वत्राख्यं ब्रह्म प्रणतोस्मीति श्रौतार्थः। चन्द्रादिज्योतिर्गणभावकैः हिमोष्णवर्षादिप्रतिनियतव्यापारविभक्तैः सुषुम्नादिसहस्ररश्मिभिः जगतः कारकत्वं आकाशादिदेशवशात् उदयादिकालवशाच्च स्वात्मभूतचराचरवस्तुचेष्टादिना जगतः शुभाशुभसूचकत्वं च आदित्यस्येति स्वशास्त्रप्रतिपाद्यार्थसूचनमार्थिकार्थः इति।

श्रोतृणांसम्बन्धभिधेयप्रयोजनकथनाच्छास्त्रविषये छात्राणां श्रद्धा जायते। तथा चोक्तमत्रार्थे

सिद्धिः श्रोतृप्रभृतीनां सम्बन्धकथनाद्यतः।

तस्मात् सर्वेषु शास्त्रेषु सम्बन्धः पूर्वमुच्यते।।

किमेवात्राभिधेयं स्यादिति पृष्टस्तु केनचित्।

यदि न प्रोच्यते तस्मै फलशून्यं तु तद्भवेत्।।

सर्वस्यैव हि शास्त्रस्य कर्मणो वापि कस्यचित्।

यावत्प्रयोजनं नोक्तं तावत्त्वेन गृह्यते।।

तस्मात् ग्रन्थारम्भे तावत् ग्रन्थाध्येतृप्रयोजकम् अनुबन्धचतुष्टयं ग्रन्थकृता निवेशयते एव। तच्च व्याख्याकृता छात्राणां यथा अधिगमस्यात् तथा स्पष्टम् अनुवदति। अत्रापि प्रथममुनिकथितेत्यारम्भाणे द्वितीयश्लोके अनुबन्धचतुष्टयकथनं ग्रन्थकृता निविष्टं विद्यते। तद् व्याख्यारचयित्रा परामृशति यथा स्पष्टमभिधातुमुद्यते इत्यनेन वाच्यवाचकलक्षणसम्बन्धः सूच्यते। स्पष्टतया मध्यमरचनया च मूलसंहिताग्रन्थविस्तारार्थस्य ख्यापनं संप्रवृत्तेः प्रयोजनम्। ज्योतिशास्त्रस्य स्वैकप्रतिपाद्यकालचोदितयागयोगादिविशुद्धकर्मानुष्ठाननिष्पन्नचित्तशुद्धिद्वारेण औपनिषद्वाक्यविचाराविभूतपरमात्मानुभवानन्दलक्षणो मोक्षः परमप्रयोजनम्। अनुषङ्गिकः त्रिवर्गः। प्रथममुनिभिः ब्रह्माद्यैः ग्रहचारफलादयः प्रस्तुताः सन्ति। त एव विषयत्वेनात्र उपतिष्ठन्ते।

क्वचिदत्र व्याख्यायां पूर्वग्रन्थेन उत्तरग्रन्थस्य सम्बन्धगमिकाः पीठिका अपि निर्दिष्टा विद्यन्ते। यथा मुनिविरचितमिदमिति श्लोकस्य व्याख्यानात् पूर्वम् उपस्थापिता यथा अथ पूर्वार्धेन मुनिकृतं पुरातनशास्त्रं सम्यक् मनुष्यकृतम् इदानीन्तनं न साध्विति यत् या विशेषोक्तिरित्यनुवादेन आशङ्क्य अपरार्धेन सा शङ्का विशेषोक्तिरित्यक्षेपेण परिजिहीर्षुः आर्षात् पौरुषेयस्य शब्दभेदेऽपि अर्थसाम्ये सति स न देशः। यतः अर्थप्रधानमिदं शास्त्रम्। मन्तरचनायां तु तेनैव पाठेन भाव्यम् इति। अनया पीठिकया वक्ष्यमाणग्रन्थः किं सम्बन्धीति विषयः छात्रैः अवगतस्स्यात्। ग्रन्थकर्ता तावत् शिष्यानां मनसि वा वचसि उद्भूताः शङ्काः मनसि निधाय तेषां समाधानकथनपरत्वेन श्लोकान् प्रणयति।



क्षितितनयदिवसवारो इत्यारभ्यमाने श्लोके नृदिव्यकृते इति समस्तपदस्य विग्रहवाक्यं कथ्यते यथा ना मनुष्यः दिव्यः अप्राकृतः ताभ्यां कृते नृदिव्यकृते शस्त्रार्थे इत्यर्थः इति। अत्र मनुष्यदिव्यशब्दयोः द्वन्द्वसमासकरणोत्तरं तेन कृतशब्दस्य तृतीयातत्पुरुषसमासः कृतः इति बोधः व्याख्यानादस्मात् अध्येतृणां जायते। व्याख्यामस्यां बहुत्र श्लोकेषु अर्थावगमने क्लिष्टानि समस्तपदानि विश्लिष्य तेषां अर्थवर्णनमपि छात्राणां अवगमनानुगुणं क्रियते व्याख्यायामत्र।



DEPRESSION AND EMOTIONAL MATURITY AS PREDICTORS OF SUICIDE IDEATION AMONG YOUNG ADULTS

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Abstract

With a drastic change in the lifestyle of people and with an immense workload and stress, it has become a major concern to balance the emotional state and handle our negative ideas and thoughts emerging due to high levels of stress. Healthy people experience a wide range of moods and have an equally large repertoire of affective expressions; they feel in control of their mood and affects. It is tempting to consider disorders of mood on a continuum with normal variations in mood. Patients with mood disorders, however, often report an ineffable, but distinct, quality to their pathological state. Depression is an illness that involves the body, mood, and thoughts. It interferes with daily life, normal functioning, and causes pain for both the person with the disorder and those who care about him or her. It is a persistent feeling of sadness and worthlessness and a lack of desire to engage in formerly pleasurable activities. A complex mind/body illness, depression can be treated with drugs and/or therapy.

The current study aims to understand the effect of Emotional Maturity and Depression on Suicide Ideation. The study is conducted on 150 girls and 150 boys within the age range of 18-22 years. It is expected that there would be a significant relationship between Emotional Maturity and Depression; between Depression and Suicide Ideation; and between Emotional Maturity and Suicide Ideation.

Key Words: Depression, Emotional Maturity & Suicide Ideation.

Tsypes et.al. (2015) conducted a study on Peer Victimization Mediates the Impact of Maternal Depression on Risk for Suicidal Ideation in Girls but not Boys: A Prospective Study. Mothers either met criteria for a major depressive disorder (MDD) during their child's lifetime ($n = 96$) or had no lifetime diagnosis



of any DSM-IV mood disorder and no current Axis I diagnosis ($n = 107$). The researchers found significant indirect pathways from maternal depression to children's suicidal ideation through both relational and overt forms of peer victimization among girls, but not among boys. The current study suggests that peer victimization may constitute one of the potential mechanisms by which daughters of depressed mothers are at increased risk for suicidal thinking.

Sharma et.al. (2015) researched on Stress as a mediator between work–family conflict and psychological health among the nursing staff: Moderating role of emotional intelligence. The results revealed that stress acted as a mediator between work–family conflict of the nursing staff and their psychological health. However, their emotional intelligence level acted as a moderator between their stress level and psychological health. To conclude, the crucial roles of emotional intelligence in controlling the impact of stress on psychological health along with the practical as well as theoretical implications are also discussed.

Kwok et.al. (2015) had conducted a research on the roles of emotional competence and social problem-solving in the relationship between physical abuse and adolescent suicidal ideation in China. Results showed that physical abuse was significantly and positively related to suicidal ideation in both male and female adolescents. Emotional competence was not found to be significantly associated with adolescent suicidal ideation, but rational problem-solving, a sub-scale of social problem-solving, was shown to be significantly and negatively associated with suicidal ideation for males, but not for females. However, emotional competence and rational problem-solving were shown to be a significant and a marginally significant moderator in the relationship between physical abuse and suicidal ideation in females respectively, but not in males. High rational problem-solving buffered the negative impact of physical abuse on suicidal ideation for females. Interestingly, females with higher empathy and who reported being physically abused by their parents have higher suicidal ideation. Findings are discussed and implications are stated. It is suggested to change the attitudes of parents on the concept of physical abuse, guide them on appropriate attitudes, knowledge and skills in parenting, and enhance adolescents' skills in rational problem-solving.

Brausch et.al. (2014) had conducted a research on Self-esteem and social support as moderators of depression, body image, and disordered eating for suicidal ideation in adolescents. Disordered eating, depression, parent support, and peer support were found to be significant predictors of current suicidal ideation, but body satisfaction was not. The relationship between depression and suicidal ideation was significantly moderated by both self-esteem and parent support,



while the relationship between disordered eating and suicidal ideation was significantly moderated by peer support. Results underscore the importance of examining protective factors for suicide risk, as they have the potential to reduce suicidal ideation in adolescents.

McManama O'Brien et.al. (2014) researched on Differentiating adolescent suicide attempters from ideators: Examining the interaction between depression severity and alcohol use. Hierarchical logistic regressions indicated that frequency of alcohol use did not differentiate nonsuicidal adolescents from those with current suicidal ideation, but severity of depressed mood did so. In contrast, alcohol use was a significant differentiating factor between adolescents who had attempted suicide compared to those with suicidal ideation only, with severity of depressed mood not being significant. However, there was also a significant interaction effect such that for adolescents with suicidal ideation and low levels of depression, increased frequency of alcohol use was associated with increased odds of a suicide attempt. These findings suggest that alcohol use may hasten the transition from suicidal ideation to suicide attempt in adolescents with low levels of depressed mood.

Van den Bulk et.al. (2014) had conducted a research on Amygdala activation during emotional face processing in adolescents with affective disorders: the role of underlying depression and anxiety symptoms. Depressive and anxiety disorders are often first diagnosed during adolescence and it is known that they persist into adulthood. Previous studies often tried to dissociate depressive and anxiety disorders, but high comorbidity makes this difficult and maybe even impossible. There were no significant differences in activation patterns between the control group and the clinical group on whole brain level and ROI level. However, it was found that dimensional scores on an anxiety but not a depression subscale significantly predicted brain activation in the right amygdala when processing fearful, happy and neutral faces. These results suggest that anxiety symptoms are a better predictor for differentiating activation patterns in the amygdala than depression symptoms. Although the current study includes a relatively large sample of treatment naïve adolescents with depression/anxiety disorders, results might be influenced by differences between studies in recruitment strategies or methodology. To conclude, this study shows that abnormal amygdala responses to emotional faces in depression and anxiety seems to be more dependent on anxiety symptoms than on depression symptoms, and thereby highlights the need for more research to better characterize clinical groups in future studies.



Gallagher et.al (2014) had done a research on social anxiety symptoms and suicidal ideation in a clinical sample of early adolescents: Examining loneliness and social support as longitudinal mediators. Structural equation modeling revealed a significant direct relationship between social anxiety symptoms at baseline and suicidal ideation at 18 months post-baseline, even after controlling for baseline depressive symptoms and ideation. A second multiple mediation model revealed that baseline social anxiety had a significant indirect effect on suicidal ideation at 18 months post-baseline through loneliness at 9 months post-baseline. Social anxiety did not have a significant indirect effect on suicidal ideation through perceived social support from either parents or close friends. Findings suggest that loneliness may be particularly implicated in the relationship between social anxiety and suicidality in teens. Clinicians should assess and address feelings of loneliness when treating socially anxious adolescents.

Kwok et.al. (2014) did a research on the moderating role of emotional competence in suicidal ideation among Chinese university students. Hierarchical regression analyses showed that perceived high family functioning and emotional competence were significant negative predictors of suicidal ideation. Further analyses showed that parental concern, parental control and creative use of emotions were significant predictors of suicidal ideation. Emotional competence, specifically creative use of emotions, was found to moderate the relationship between perceived family functioning and suicidal ideation. The findings support the family ecological framework and provide evidence for emotional competence as a resilience factor that buffers low family functioning on suicidal ideation. Suggested measures to decrease suicidal ideation include enhancing parental concern, lessening parental control, developing students' awareness, regulation and management of their own emotions, fostering empathy towards others' emotional expression, enhancing social skills in sharing and influencing others' emotions and increasing the positive use of emotions for the evaluation and generation of new ideas.

Wolff et.al (2014) had conducted a research on Social-Cognitive Moderators of the Relationship between Peer Victimization and Suicidal Ideation among Psychiatrically Hospitalized Adolescents. Peer victimization among children and adolescents is a major public health concern, given its widespread individual and societal ramifications. Victims of peer aggression often face significant levels of psychological distress and social difficulties, such as depression, suicidal ideation, suicide attempts, and social rejection. In multiple regression analyses that controlled for gender, social and cognitive factors served as significant resource factors. Cognitive factors also moderated the relationship between peer victimization and suicidal ideation.



Aradilla-Herrero et.al. (2014). Associations between emotional intelligence, depression and suicide risk in nursing students. Linear regression analysis confirmed that depression and emotional attention are significant predictors of suicidal ideation. Moreover, suicide risk showed a significant negative association with self-esteem and with emotional clarity and repair. Gender differences were only observed in relation to depression, on which women scored significantly higher. Overall, 14% of the students were considered to present a substantial suicide risk. The findings suggest that interventions to prevent suicidal ideation among nursing students should include strategies to detect mood disorders (especially depression) and to improve emotional coping skills. In line with previous research the results indicate that high scores on emotional attention are linked to heightened emotional susceptibility and an increased risk of suicide. The identification and prevention of factors associated with suicidal behaviour in nursing students should be regarded as a priority.

Kim et.al (2014) had done a research on Clinical correlates of maternal suicidal ideation detected by perinatal depression screening. Suicide is a leading cause of maternal mortality in the developed world, accounting for 10% of maternal deaths. Relationship between suicidal ideation during pregnancy and after delivery in a large cohort of consecutively screened women to identify maternal demographic characteristics and obstetric outcomes that correlate with this vulnerable state of mind. During pregnancy language by marital status interaction emerged with English-speaking, partnered patients less likely to report suicidal ideation compared with non-English-speaking, partnered women with increased suicidal ideation risk. Asians were also more likely to reveal suicidal ideation during pregnancy. Planned cesarean delivery reduced suicidal ideation after delivery risk compared with vaginal delivery, whereas perineal laceration increased suicidal ideation reporting. Asian women also endorsed suicidal ideation after delivery more often than other ethnic groups. When asked, women commonly report suicidal thoughts during and after pregnancy. Non-English-speaking, partnered patients manifest higher suicidal ideation endorsement as do Asian women. Perineal laceration increases suicidal ideation risk, whereas planned cesarean delivery has the opposite effect. Because 1% of women with suicidal ideation are estimated to attempt suicide, knowledge of these risk profiles and identification of vulnerable patients through screening may help to avert some instances of maternal mortality.

Fang et.al (2014) had conducted a correlational study of suicidal ideation with psychological distress, depression, and demoralization in patients with cancer. Tobit regression analysis showed that demoralization influenced suicidal ideation



more than depression did. Demoralization had more influence on suicidal ideation than depression did. Therefore, attention should be paid to highly demoralized patients with cancer or high demoralization comorbid with depression for the purposes of suicide evaluation and prevention. The DT scale has discriminative ability as a screening tool for demoralization or depression and can also be used in clinical settings for the preliminary screening of patients with cancer and high suicide risk

Kaspar, V. (2014) did a research on Long-term depression and suicidal ideation outcomes subsequent to emancipation from foster care: Pathways to psychiatric risk in the Métis population. Major depressive episode (MDE) and suicidal ideation (SI) associated with history of foster care placement (HxFCP), and mediating effects of psychosocial and socioeconomic factors through which placement may confer psychiatric risks in the years subsequent to emancipation were examined in a national sample of 7534 Métis. More than one third of emancipated respondents reported past year MDE, a prevalence rate nearly 50% higher than the rate of MDE among Métis respondents without a history of placement in foster care. The 25% lifetime prevalence rate of SI in the emancipated group was more than twice the rate observed in the non-fostered group. Direct effects of HxFCP on post placement MDE and SI were significant in multivariate logistic regression analyses, even when effects of childhood predisposition risk factors were controlled statistically. Emancipated individuals were unduly affected by psychosocial and socioeconomic disadvantages signifying pathways that linked foster care placement history and psychiatric status. Main mediators of the effects demonstrated using effect decomposition procedures were self-esteem, income, and community adversity. The findings warrant consideration of foster care history in clarifying the complex etiologies of suicidal ideation and major depressive episode in the Métis population and risk factors ensuing in the intervening years as integral to the process linking placement to long-term psychiatric outcomes.

Sobowale et.al (2014) conducted a research on Depression and suicidal ideation in medical students in China: a call for wellness curricula. Based on responses to the PHQ-9, students were labeled as depressed, with suicidal ideation, and/or impaired. Additionally, students' feedback from a focus group (N=30) evaluating the current state of the school's wellness curricula and mental health services was thematically analyzed. Forty-seven of 348 (13.5%) students had moderate-severe depression. The mean PHQ-9 score was 6.02. Seven and a half percent of students reported suicidal ideation. The frequency of depression and suicidal ideation did not differ between second- and third-year medical students. Nearly 30% of depressed students reported suicidal ideation. Depression and suicidal



ideation were strongly correlated. Students with depression or suicidal ideation were more likely to be impaired compared to students who were not. Focus group participants reported only off-campus student counseling services available to medical students in distress. No wellness curricula were established. Rates of depression and suicidal ideation are high in medical students in mainland China. Mental health services are deficient and unlikely to address distress in students. Chinese medical schools should offer mental health support and treatment at an early stage, such as wellness curricula and proactive student counseling.

Kulis et.al (2014) did a research on Depression, Suicidal Ideation and High-Risk Behaviors among Underserved Youths in Central Mexico. The staggering cost of depressive disorders and suicide on the quality of life of patients and families, the increased mortality risk, and the high economic burden demand our attention. There is evidence suggesting that engagement in risky behaviors, development of negative habits such as using alcohol, tobacco, and drugs, and depressive disorders all begin during adolescence. Further, substance use, in particular smoking and drinking, has been linked to depression and suicide risk. Almost half of participants showed some level of depression, with 23.6% identified as suffering severe depression. Logistic regression analyses indicated that controlling for financial status, symptoms of depression were predicted by female sex, low self-esteem, risky behaviors, conflictive parent-teen relationships, and binge alcohol drinking. The same variables with the exception of binge drinking predicted severe depression. In turn, suicidal ideation was associated with depression, low self-esteem, high-risk behaviors, and conflictive relationships with parents. A similar pattern of clustered behaviors among teenagers has been reported. Predicting and ultimately preventing depression is of enormous public health significance. The findings can inform the design of interventions to prevent this early pattern of depressive disorders and associated risk factors among low-income, rural youth in Mexico and possibly in other contexts.

Prigerson et.al. (2014) did a research on Influence of traumatic grief on suicidal ideation among young adults. Traumatic grief was associated with a 5.08 times greater likelihood of suicidal ideation, after control for depression. Comorbid traumatic grief and depression were not associated with a greater likelihood of suicidal ideation. Syndromal traumatic grief heightens vulnerability to suicidal ideation.

Hsiao et.al (2014) conducted a research on Efficacy of psychotherapy on diurnal cortisol patterns and suicidal ideation in adjustment disorder with depressed



mood. According to the results, there was no differential change over time between the BMS and control groups in self-reported depression or anxiety symptoms. However, suicidal ideation appeared to be reduced in the psychotherapy group. Changes in diurnal cortisol patterns were also significantly different in group \times time interactions, in favor of BMS group. Psychotherapy likely provides improvements in psychobiological stress responses and decreases the occurrence of suicidal ideation in patients with AD.

Debeer et.al (2014) in their research combined PTSD and depressive symptoms interact with post-deployment social support to predict suicidal ideation in Operation Enduring Freedom and Operation Iraqi Freedom veterans. Rates of suicide are alarmingly high in military and veteran samples. Suicide rates are particularly elevated among those with post-traumatic stress disorder (PTSD) and depression, which share overlapping symptoms and frequently co-occur. Identifying and confirming factors that reduce, suicide risk among veterans with PTSD and depression is imperative. As predicted, PTSD–depression, symptoms had almost no effect on suicidal ideation (SI) when post-deployment social support was high; however, when, post-deployment social support was low, PTSD–depression symptoms were positively associated with, SI. Thus, social support may be an important factor for clinicians to assess in the context of PTSD and, depressive symptoms.

Jeon et.al (2014) conducted a research on the Influence of Parent and Peer Attachment in Adolescent's Suicidal Ideation: Mediating Effect of Depression and Anxiety. Parental attachment showed a highly positive correlation with peer attachment while parental attachment and peer attachment showed a highly negative correlation with depression and anxiety. In addition, parental attachment and peer attachment showed a highly negative correlation with suicidal ideation while depression and anxiety showed a highly positive correlation with suicidal ideation. Parental attachment, not only directly, but also indirectly, affects suicidal ideation with mediation of depression and anxiety, indicating that the more secure the level of attachment, the lower the occurrence of depression and anxiety are, which, as a result, can lower suicidal ideation tendency. Parent attachment and peer attachment have a direct and indirect effect on suicidal ideation with the mediation of depression and anxiety, which plays a crucial role in suicidal ideation of adolescents.

Gallagher et.al (2014) did a research on Social anxiety symptoms and suicidal ideation in a clinical sample of early adolescents: Examining loneliness and social support as longitudinal mediator. Recent research has shown that social anxiety may be related to increased risk for suicidal ideation in teens, although



this research largely has been cross-sectional and has not examined potential mediators of this relationship. Structural equation modeling revealed a significant direct relationship between social anxiety symptoms at baseline and suicidal ideation at 18 months post-baseline, even after controlling for baseline depressive symptoms and ideation. A second multiple mediation model revealed that baseline social anxiety had a significant indirect effect on suicidal ideation at 18 months post-baseline through loneliness at 9 months post-baseline. Social anxiety did not have a significant indirect effect on suicidal ideation through perceived social support from either parents or close friends. Findings suggest that loneliness may be particularly implicated in the relationship between social anxiety and suicidality in teens. Clinicians should assess and address feelings of loneliness when treating socially anxious adolescents.

Brausch et.al (2013) did a research on Self-esteem and social support as moderators of depression, body image, and disordered eating for suicidal ideation in adolescents. Disordered eating, depression, parent support, and peer support were found to be significant predictors of current suicidal ideation, but body satisfaction was not. The relationship between depression and suicidal ideation was significantly moderated by both self-esteem and parent support, while the relationship between disordered eating and suicidal ideation was significantly moderated by peer support. Results underscore the importance of examining protective factors for suicide risk, as they have the potential to reduce suicidal ideation in adolescents.

Valois et.al. (2013) had conducted a research on Association between Adolescent Suicide Ideation, Suicide Attempts and Emotional Self-Efficacy. Unadjusted and adjusted logistic regression analysis and multivariate models constructed separately for sex and race were employed. Tobacco, alcohol, marijuana, and cocaine use; relationship violence; depressed mood; socioeconomic status; and weapon/gun access were included as covariates in the adjusted models. Nearly all suicide variables were significantly related to emotional self-efficacy in the unadjusted models for the four race/sex groups. In adjusted models, suicide ideation, planning a suicide attempt, attempting suicide and a suicide attempt resulting in injury were associated ($\alpha \leq .05$) with reduced emotional self-efficacy for black females. For white males, suicide ideation, attempting suicide and a suicide attempt resulting in injury were associated ($\alpha \leq .05$) with reduced emotional self-efficacy. Suicide ideation for black males was associated ($\alpha \leq .05$) with reduced emotional self-efficacy. No significant associations were established for white females. Results have implications for health services and suicide prevention programs for adolescents. Measures of emotional self-efficacy as a part of adolescent mental health assessments might be useful for field work, intervention, and program evaluation efforts.



O'Donovan et.al (2013) in their research said that Suicidal ideation is associated with elevated inflammation in patients with major depressive disorder. Patients with major depressive disorder (MDD) who attempt or complete suicides have elevated inflammation compared to no suicidal patients with MDD. However, greater severity of depression and the medical lethality of suicide attempts could account for such elevated inflammation in suicide attempters and suicide completers. Analysis of covariance models were used to assess group differences with adjustments for age and gender. Patients with MDD and high suicidal ideation had significantly higher inflammatory index scores than both controls, and patients with MDD and lower suicidal ideation. In contrast, patients with lower suicidal ideation were not significantly different from controls on the inflammatory index, partial. Follow-up analyses indicated that differences between patients with MDD and high versus lower suicidal ideation were independent of depression severity and recent suicide attempts. Suicidal ideation may be uniquely associated with inflammation in depressed patients.

Vuorilehto et.al (2013) did a research on the method of assessment determines prevalence of suicidal ideation among patients with depression. Depending on the setting, 56–88% of patients had suicidal ideation in some of the assessments, but only 8–44% in all of them. Agreement ranged from negligible to moderate, being lowest among primary care patients. The correlates of suicidal ideation overlapped. No assessment had optimal sensitivity, specificity, PPV and NPV. Nevertheless, PPVs ranged up to 43%. Which MDD patient is classified as having suicidal ideation depends strongly on the method of assessment, with the greatest variation likely in primary care. Differences in assessments may cause inconsistency in risk factors. Predicting suicide attempts is difficult, but not futile.

Vuorilehto et.al (2013) did a research on the method of assessment determines prevalence of suicidal ideation among patients with depression. Suicide Ideation (SI) was significantly associated with numerous sociodemographic characteristics (that is, lower level of education, Caucasian or African American, male, unemployed, and treated in psychiatric care) and clinical features (that is, previous suicide attempt, younger age of MDD onset, greater baseline depressive symptom severity, greater number of depressive symptoms, and presence of agoraphobia and (or) generalized anxiety disorder). Elevated levels of SI at baseline were associated with decreased remission rates. Consistent with past findings, increased rates of SI were associated with greater depressive symptom severity as well as other features suggestive of severity of illness. Our results confirm previous findings of associations between SI and panic and (or) phobic



symptoms and anxiety, but did not confirm previous findings of an association between SI and alcohol or drug use and (or) dependence. While selective serotonin reuptake inhibitor monotherapy appeared significantly helpful in reducing SI during the course of treatment, the presence of SI at baseline was found to be associated with decreased treatment response, with patients reporting SI at the start of treatment being less likely to achieve remission.

Guan et.al. (2012) they based their research on Nonsuicidal self-injury as a time-invariant predictor of adolescent suicide ideation and attempts in a diverse community sample. According to the results, baseline NSSI was significantly, prospectively associated with elevated levels of suicide ideation and suicide attempts, but not threats or gestures. Neither gender nor ethnicity moderated results. Above and beyond established risk factors such as depressive symptoms and previous suicidality, adolescent NSSI may be an especially important factor to assess when determining risk for later suicidality.

Görgens-Ekermans et.al. (2012) had conducted a research on Emotional intelligence as a moderator in the stress–burnout relationship: a questionnaire study on nurses. Results indicate that there is a consistent inverse relationship between emotional control and management as dimensions of EI, and stress and burnout emerged. A differential effect of high vs. low EI on the stress–burnout relationship was evident. Workload and the work/family interface emerged as significant predictors of burnout. Respondents working in maternity, paediatric and ER wards reported more feelings of personal accomplishment than those working in general wards. Higher EI is significantly related with lower stress and burnout in a sample of South African nurses. The moderator effect of EI in the stress–burnout relationship suggests that enhanced EI may help diminish burnout development when chronic stress is experienced.

Kong et.al. (2012) had done a research on Social support mediates the impact of emotional intelligence on mental distress and life satisfaction in Chinese young adults. Path analysis showed that social support partially mediated the relationship between EI and life satisfaction as well as that between EI and mental distress. Furthermore, a multi-group analysis found that the males with high EI scores are more likely to gain greater social support from others than the female counterparts.

Desseilles et.al (2012) their research was based on if ‘Is it valid to measure suicidal ideation by depression rating scales?’ Three components were derived from the Principal Component Analysis (PCA). Factor 2 showed a major loading



for the Hamilton Scale for Depression (HAM-D) suicide item. Both the HAM-D suicide item and Factor 2 positively correlated with the SSI total score. Moreover, the BDI suicide item highly correlated with the Factor 2 and the SSI total score. Finally, the HAM-D suicide item correlated significantly with the number of suicide attempts and the age at the first attempt. These findings suggest that the use of a single suicide item or a dimensional factor derived from a depression scale might be a valid approach to assess the suicidal ideations. Moreover, the results suggest that clinician rated scales as well as self-report questionnaires are equally valid to do so.

Diamond et.al. (2012) researched on Sexual trauma history does not moderate treatment outcome in attachment-based family therapy (ABFT) for adolescents with suicide ideation. Despite the well-documented association between history of sexual trauma (HSA) and suicide ideation, HSA is largely overlooked in suicide treatment studies. Existing studies showed that patients with a HSA have a weaker treatment response. In this randomized clinical trial for suicide ideation, HSA did not moderate treatment outcome for Attachment-Based Family Therapy (ABFT). Adolescents responded better to ABFT than a control condition, regardless of HSA status. At baseline, adolescents with HSA were also more likely to report past suicide attempts than those without HSA, indicating that they are a particularly important subgroup to consider when developing and evaluating interventions that target suicide ideation.

Davis et.al. (2012) had conducted a research on Emotional intelligence as a moderator of stressor–mental health relations in adolescence: Evidence for specificity. Emotional intelligence (EI) has been reliably linked to better mental health, though descriptive associations reveal little about *how* and *when* such adaptive outcomes arise. Whilst there is some evidence to suggest that ‘trait’ EI may operate as a protective resource within stress–illness processes, the role of ‘ability’ EI in this regard appears unclear. Moderated regression analyses found that whilst high levels of trait EI attenuated stressor–mental health relations, high levels of ability EI amplified associations, although both effects showed specificity with respect to stressor type and disorder.

Lasgaard et.al. (2011) did a research on Loneliness, depressive symptomatology, and suicide ideation in adolescence: Cross-sectional and longitudinal analyses. Loneliness was found to be a correlate of depressive symptoms at the cross-sectional level, independent of gender, other demographic factors, multiple psychosocial variables, and social desirability. Loneliness did not predict suicide ideation over time or at the cross-sectional level, when controlling for depressive



symptoms. Gender did not predict loneliness, depressive symptoms or suicide ideation across time.

Dasgupta et.al. (2011) had conducted a research on Does Student's Emotional Intelligence Play Role in their Suicidal Ideation? Results indicates that students with less in emotional intelligence having more suicidal ideation. Future research needed to aim to enhancing emotional intelligence in students would result in better stress coping skills. One of the implications of these findings is that computing curricula might need to be redesigned to include emotional intelligence training, which is a learnable skill.

Hinduja et.al (2010) did a research on Bullying, cyberbullying, and suicide. Empirical studies and some high-profile anecdotal cases have demonstrated a link between suicidal ideation and experiences with bullying victimization or offending. Youth who experienced traditional bullying or cyberbullying, as either an offender or a victim, had more suicidal thoughts and were more likely to attempt suicide than those who had not experienced such forms of peer aggression. Also, victimization was more strongly related to suicidal thoughts and behaviors than offending. The findings provide further evidence that adolescent peer aggression must be taken seriously both at school and at home, and suggest that a suicide prevention and intervention component is essential within comprehensive bullying response programs implemented in schools.

Schwenk et.al (2010) conducted their research on Depression, stigma, and suicidal ideation in medical students. Prevalence of moderate to severe depression was 14.3% confidence interval [CI]. Women were more likely than men to have moderate to severe depression. Third- and fourth-year students were more likely than first- and second-year students to report suicidal ideation. Students with moderate to severe depression, compared with no to minimal depression, more frequently agreed that "if I were depressed, fellow medical students would respect my opinions less, and that faculty members would view them as being unable to handle their responsibilities. Men agreed more commonly than women that depressed students could endanger patients. First- and second-year students more frequently agreed than third- and fourth-year students that seeking help for depression would make them feel less intelligent. Depressed medical students more frequently endorsed several depression stigma attitudes than no depressed students. Stigma perceptions also differed by sex and class year.



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FEA ANALYSIS AND TETSING OF FRICION STIR WELDING PIECES OF DISSIMILAR ALUMINIUM ALLOYS WITH DIFFERENT SPEEDS

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Abstract:

This work deals with application of friction stir welding (FSW). FSW procedure is used for joining the aluminum alloy AA6061-T0 and AA5052 Plates in butt configuration with orthogonal combination of factors and their levels. The combination of factors involving tool rotation speed, tool travel speed and tool pin profile are Used in three levels. Find the optimum level of factors for optimizing UTS, ductility and hardness of joint. Experiments have been conducted with two different tool materials (HSS steel with two different materials) with various factors level combinations. For joining AA6063-T0 and AA5052. The influence of tool material is also studied.

It mechanically intermixes the two pieces of metal at the place of the join, then softens them so the metal can be fused using mechanical

pressure, much like joining clay, dough, or plasticine. It is primarily used on aluminum, and most often on large pieces that cannot be easily heat-treated after welding to recover temper characteristics.

In this project, we have learned different welding techniques and now we are discussed about Friction stir welding.

A parametric model with the weld plates and cutting tool is done in Pro/Engineer.

Analysis is done in ANSYS software. Structural and Thermal Analysis is doing on the component for getting Maximum heat flux and Stress value. Tensile test, Hardness and Microscope testing is done on the welding pieces in Hyderabad Labs, Balanagar.

Welding is done in Sri Venkateswara Industries, Shobana colony, Balanagar, Hyderabad.

1. Introduction to FSW

Nowadays, o been focusing on developing fast and eco-friendly processes in manufacturing and this include Friction Stir Welding (FSW) and Processing (FSP). Friction Stir Welding (FSW) is a solid-state joining technique invented and patented by The Welding Institute (TWI) in 1991 for butt and lap welding of ferrous and non-ferrous metals and plastics. FSW is a continuous process that involves plunging a portion of a specially shaped rotating tool between the butting faces of the joint. The relative motion between the tool and the substrate generates frictional heat that creates a plasticized region around the immersed portion of the tool Friction stir welding process uses a non-consumable rotating tool consisting of a pin extending below a shoulder that is forced into the adjacent mating edges of the work pieces as illustrated in Fig.1. The heat input, the forging action and the stirring action of the tool induces a plastic flow in the material, forming a solid state weld.

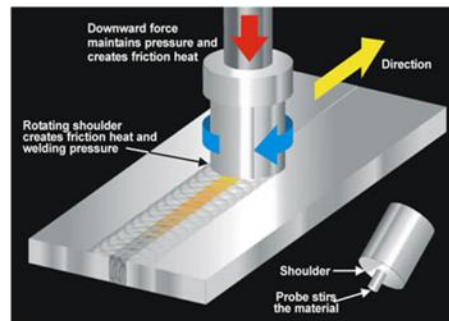


Figure 1 Friction stir welding process.

1.1 Tool Design.

Welding tool design is critical in FSW. Optimizing tool geometry to produce more heat or achieve more efficient “stirring” offers two main benefits: improved breaking and mixing of the oxide layer and more efficient heat generation, yielding higher welding speeds and better quality. Tool materials should have relatively high hardness at elevated temperatures and retain this hardness for an extended period. The combination of tool material and base material is critical to the tool’s operational lifetime. When welding single-sided extruded profiles in the Al 6000 series with a 0.20-in. (5-mm) material thickness, it’s typical to weld nearly 5,000 FPM (1,500 m/min.) with one tool, which corresponds to more than 100 panels.



Figure 2 NASA's heavy-lift rocket, the Space Launch System, being manufactured in conjunction with Boeing, is a high-profile FSW application. The Vertical Assembly Center (VAC) is a giant circumferential welding system that uses FSW to precision-weld the fuel tank structures for the rocket. Its weld head and clamp positional accuracy and repeatability hold a weld tolerance of less than 0.015 in. (0.38 mm).

Advantages of FSW

For joining nonferrous materials, no filler material or shielding gases are required in this process, making FSW an economical joining method. For joining nonferrous materials, the tool is not consumed and is regarded as a spare part. For example, one tool typically can be used for more than 2,000 m of welding in 6000 series aluminum alloys.

This method also requires minimum surface preparation (normally only degreasing is needed), and uses only 20 percent heat input compared to traditional gas metal arc welding

(GMAW or MIG) processes. In both high and low melting temperature alloys, no fumes or toxic gases are produced that could threaten the health of the operator, and operators and other personnel are not exposed to radiation from any arc flash. The resulting surface is ready to use, as no spatter has been produced. The root side is a perfect copy of the backing, and the top side has a smooth, scalloped appearance caused by the shoulder of the tool. Another advantage to FSW is that dissimilar materials and alloys can be joined together. This has been demonstrated in combining copper with aluminum, aluminum with magnesium, and in the cladding of aluminum to steel.

Today most aluminum alloys have been welded with excellent results. Success has also been seen in welding copper, magnesium, zinc, steels, and titanium. Research continues to produce the data that is needed to facilitate the use of FSW in production for these and other non weldable materials.

Trendsetters were Scandinavian aluminium extruders, which were in 1995 the first to apply the process commercially for the manufacture of aluminium deep-freeze panels, ship decks and bulkheads. Friction stir welded structures are now

revolutionising the way in which high-speed ferry boats, hovercraft and cruise ships are built from prefabricated

Lightweight modules.



Figure –3 Marine Aluminium preferred FSW desk panels for the world cruise ship

2. Literature review

2.1 Recent Developments in Friction Stir Welding of Al-alloys - Gu^o rel C_u am and Selcuk Mistikoglu.

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The diversity and never-ending desire for a better life standard result in a continuous development of the existing manufacturing technologies. In line with these developments in the existing production technologies the demand for more complex products increases, which also stimulates new approaches in production routes of such products, e.g., novel welding procedures. For instance, the friction stir welding (FSW) technology,

developed for joining difficult-to-weld Al-alloys, has been implemented by industry in manufacturing of several products. There are also numerous attempts to apply this method to other materials beyond Al-alloys. However, the process has not yet been implemented by industry for joining these materials with the exception of some limited applications. The microstructures and mechanical properties of friction stir welded Al-alloys existing in the open literature will be discussed in detail in this review. The correlations between weld parameters used during FSW and the microstructures evolved in the weld region and thus mechanical properties of the joints produced will be highlighted. However, the modeling studies, material flow, texture formation and developments in tool design are out of the scope of this work as well as the other variants of this technology, such as friction stir spot

2.2 Review frictions stir welding - Mistry Hiten J, MaratheShalinP .

This review paper explain the basic principle and methodology of FSW. It covers the all the technical aspects which affect the process and quality of FSW joint. Effect on all the types of joint configuration is studied. All



the technical aspects of FSW tool geometry and material of tool is covered. Effect on welding quality of basic parameters like tool rpm, tool feed, tool tilt angle, downward force and tool indentation time has been studied. Finally the area on which further more research can be carried out are identified.

2.3 Assessment of joints using friction stir welding and refill friction stir spot welding methods

FSW (Friction Stir Welding) and RFSSW (Refill Friction Stir Spot Welding) joints have been increasingly used in industrial practice. They successfully replace fusion-welded, riveted or resistance-welded joints. In the last two decades, dynamic development of this method has stimulated investigations of the fast methods for joint diagnostics. These methods should be non-destructive and easy to be used in technological processes. The methods of assessment of joint quality are expected to detect discontinuities in the structures welded using FSW and FSSW methods. Reliable detection of flaws would substantially extend the range of applications of FSW joints across many sectors of industry, including aviation. The investigations carried out in this paper allowed for

characterization of defects present in FSW and RFSSW joints. Causes of these defects were also stressed. An overview of the methodologies for assessment of joint quality was presented. Results of assessment of the quality of joints made of 2024T6 aluminium sheet metal using FSW and RFSSW method were presented.

Keywords: Friction Stir Welding, investigation, defects

2.4 Tool forces developed during friction stir Welding - M. Melendez, W. Tang+, C. Schmidt, J.

This paper will describe a technique for measuring the various forces and the torque that exist on the Friction Stir Welding pin tool. Results for various plunge depths, weld speeds, rotational speed, and tool configurations will be presented. Welds made on 6061 aluminum with typical welding conditions require a downward force of 2800 lbs. (12.5 kN) a longitudinal force in the direction of motion of 300 lbs (1.33 kN), a transverse force in the $\theta \times v$ direction of 30 lbs (135 N). Aluminum 2195 under typical weld conditions requires a downward force of 3100 lbs. (13.8 kN), a longitudinal force of 920 lbs. (4.1



kN), and a transverse force of 45 lbs. (200 N) in the $\theta \times v$ direction.

2.5 Design and properties of FSW tools: a literature review - L.

Dubourg a, P. Dacheux b a
Aerospace Manufacturing
Technology Centre, National
Research Council Canada, 5145
avenue Decelles, Montréal, Québec,
Canada, H3S 2S4 bAluminium
Technology Centre, National
Research Council Canada, 501,
Boul. Del'Université, Saguenay,
Québec, Canada, G7H 8C3.

For fifteen years, Friction Stir Welding (FSW) has increasingly attracted interest in both industry and academia for welding of aluminium alloys and other low melting temperature metals. The process involves a rotating tool consisting of a pin and a shoulder. The pin is being inserted between adjoining metal pieces. The heat generated by the tool friction brings the metal to a plastic-like state and the pin mixes the pieces together in a sound and homogenous joint. The main advantages of this process, speed, repeatability, no filler and no joint preparation, improved mechanical properties and low residual stress, have made FSW a beneficial method in marine, railway rolling stock, construction

and aerospace industries. Applications in aluminium and copper are growing while FSW in titanium and other higher temperature materials are increasingly studied. These progresses are the consequence of the new FSW tool development and a better process understanding. Nevertheless, one of the most important challenges is still the design of the tool shoulder-pin system to assure a good quality weld and to reduce the loads during the process. Consequently, based on an extensive literature survey, a review is presented on FSW tools, covering the design, the properties and the applications. After a brief presentation on the interaction mechanisms between the tool and the metallic sample, the paper describes the typical tool designs and their characteristics. Finally, emerging tool geometries are reported.

3. Aim of our Project

The aim of our project is to design and fabrication the friction stir welding tool, which is used to welded two different types of materials which as different metallic characteristic and welding is done in the solid state without altering the material properties. Analysis and

testing of friction stir welding work pieces of aluminum alloys is done by using ansys software.

A. TESTS CONDUCTED:

- Universal testing machine
- hardness testing

B. FABRICATION MATERIALS:

- Aluminum alloy 6061 & 5052

C. RPM'S:

- 1800
- 1400
- 1120
- 900
- 710

D. WORKPIECE MATERIALS:

- Aluminum alloy 6061
- Aluminum alloy 5052

E. TOOL MATERIAL:

- High speed steel (H.S.S)

F. WORKPIECE DIMENSIONS:

- Material-1 :
Aluminium-6061
- Material-2 :
Aluminium-5083
- Plate Length : 50*70mm
- Thickness : 5mm

G. TOOL DIMENSIONS:

- Material : HSS Material
- Upper Diameter : 25mm
- Tip Diameter : 5mm
- Height Of Tip : 5mm
- Height Of Tool : 50mm

4. Introduction to Pro/Engineer

Pro/ENGINEER Wildfire is the standard in 3D product design, featuring industry-leading productivity tools that promote best practices in design while ensuring compliance with your industry and company standards. Integrated Pro/ENGINEER CAD/CAM/CAE solutions allow you to design faster than ever, while maximizing innovation and quality to ultimately create exceptional products.

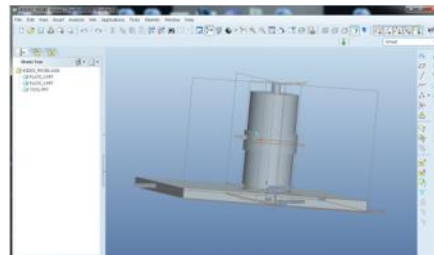


Figure 4 Modelling image of Work piece and tool in Pro/Engineer

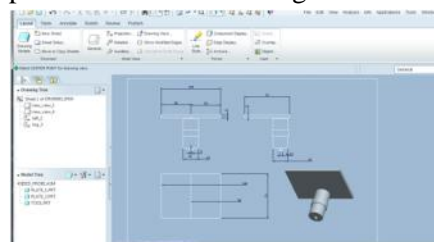


Figure 5 drafting image of Work piece and tool in Pro/Engineer

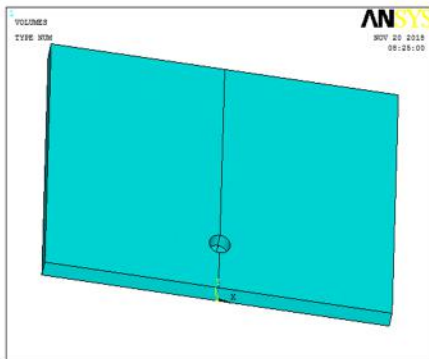
5. Analysis images in ANSYS software

5.1 Structural Analysis

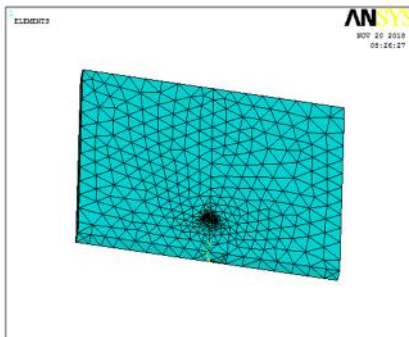
Hexagon tool Aluminium 6061 and 5052

1800 Rpm

Imported model



Meshed model



Material properties

For Material AL-6061:

Young's Modulus value : 68900
 N/mm²

Poisons ratio : 0.33

Density : 0.0000286 kg/mm³

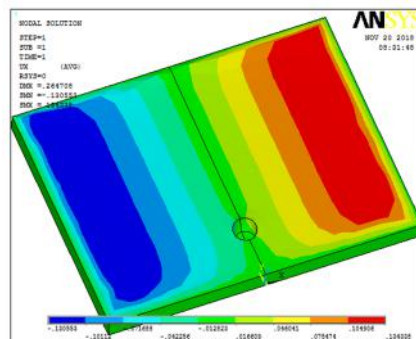
For Material AL-5052:

Young's Modulus value : 68900
 N/mm²

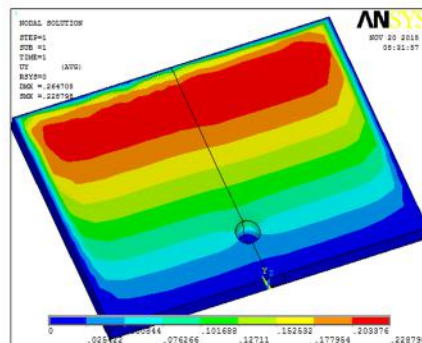
Poisons ratio : 0.33

Density : 0.000007
 kg/mm³

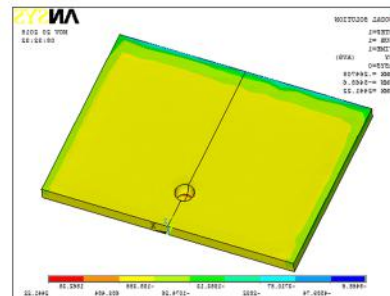
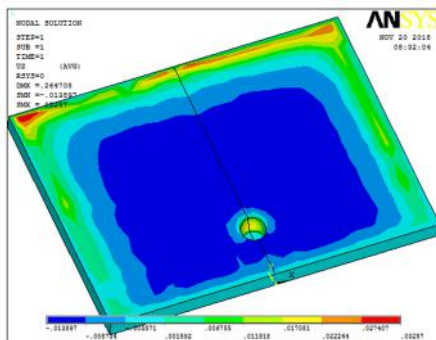
Displacement along X-Direction



Displacement along Y-Direction

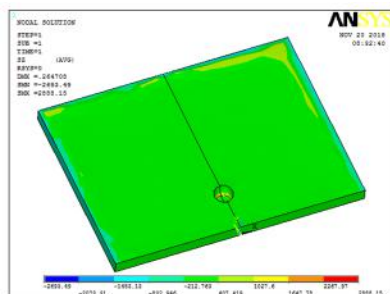
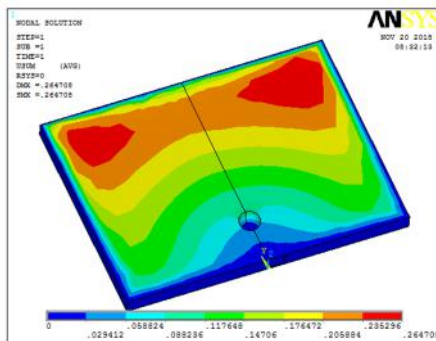


Displacement along Z-Direction



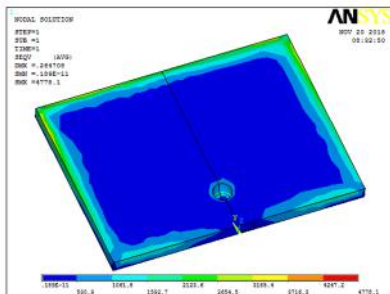
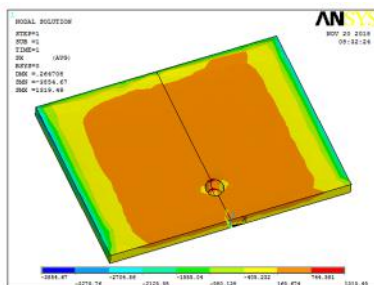
Stress along Z-Direction

Displacement Vector sum



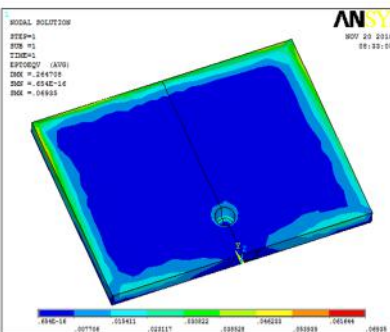
Von misses stress

Stress along X-Direction



Von misses strain

Stress along Y-Direction



5.2 Thermal Analysis

For Material AL-6061

Give thermal conductivity (Kxx)
 : 138 W/m-K

Specific temperature
 : 0.88 J/g-°C

For Material AL-5053

Give thermal conductivity
 (Kxx) : 167 W/m-K

Specific temperature
 : 0.896 J/g-°C

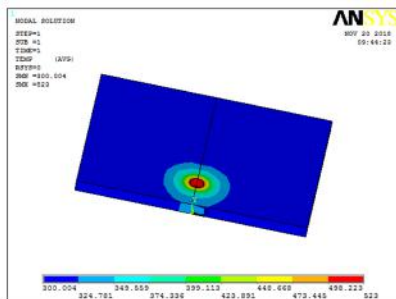
Film coefficient value 39.9

Bulk Temperature - 300

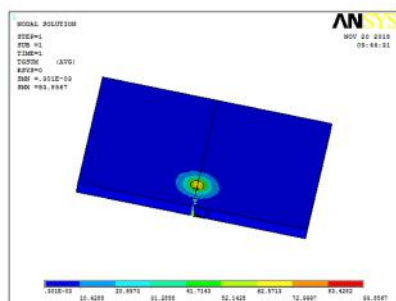
Hexagon tool Aluminum 6061 and 5052

1800 Rpm

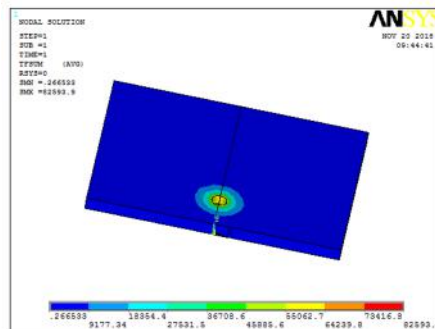
Temperature



Thermal Gradient



Thermal flux



Temperature table

Rpm	Tool Type	Temperature ⁰ K
1800	Hexagonal tool	523
1400	Hexagonal tool	483
1120	Hexagonal tool	508
900	Hexagonal tool	523
710	Hexagonal tool	478
Rpm		
1800	4Sided probe	518
1400	4Sided probe	422
1120	4Sided probe	523
900	4Sided probe	509
710	4Sided probe	493



Table-1 Temperatures from FSW
Welding

6. Results

6.1 Structural Analysis

Hexagon Tool

(ALUMINIUM 6061&5052 PLATES)

RPM	DISPLACEMENT			
	X	Y	Z	Displacement vector sum
1800	0.134338	0.228798	0.03257	0.264708
1400	0.00843	0.13878	0.021996	0.138798
1120	0.05201	0.88582	0.01261	0.102485
900	0.33585	0.0572	0.008142	0.066177
710	0.020901	0.035598	0.005067	0.041185

STRESS

X	Y	Z	Vonmises stress
1319.49	2441.22	2888.15	4778.1
679.359	1443.57	1645.05	2510.37
520.783	961.468	1142.32	1849.89
342.024	630.282	751.582	1194.52
218.977	402.312	482.621	734.407

Table-2 Hexagonal tool welding
results structural Analysis

6.2 Thermal Analysis

RP M	TEMPERA TURE	THER MAL GRADI ENT	THER MAL FLUX
1800	523	93.8567	82593.9
1400	483	77.0214	67778.9
1120	508	87.5435	77038.3
900	533	98.0656	73334.5
710	498	83.3347	86297.7

Table-3 Hexagonal tool welding
results Thermal Analysis

Four sided probe Tool

6.3 Structural Analysis

RPM	DISPLACEMENT			
	X	Y	Z	Displacement vector sum
1800	0.134330	0.228798	0.03257	0.264708
1400	0.081266	0.138409	0.019703	0.160132
1120	0.05201	0.88582	0.01261	0.102485
900	0.033585	0.0572	0.008142	0.066177



STRESS				VON MISES STRAIN
X	Y	Z	Vonmises stress	
1323.54	2447.88	2898	4778.1	0.06935
808.66	1493.97	1772.56	2890.45	0.041952
524.834	968.127	1152.17	1849.89	0.02685
343.075	636.94	731.431	1194.52	0.017337

Table-4 Four sided probe tool welding results structural Analysis

6.4 Thermal Analysis

RPM	TEMPERATURE	THERMAL GRADIENT	THERMAL FLUX
1800	518	91.7523	80742
1400	472	72.3917	63704.7
1120	523	93.8597	82593.9
900	509	87.9644	77408.7
710	493	81.2303	71482

Table-5 Four sided probe tool welding results Thermal Analysis

7. METHODOLOGY

7.1 EXPERIMENTAL WORK

The base materials used for this investigation is AA6061 and AA5083 aluminum alloys with standard composition has been presented in Table.1 & 2. The raw material is cut in to pieces with the size of 100x50x5 mm for processing. A vertical milling machine is converted in to Friction

Stir welding machine for welding process.

Then, a small hole with the same diameter as the pin was drilled at the beginning of the sheet to initiate the penetration of the tool. This drilled hole avoids too much load on the tool for penetration. Then the rotating pin of the FSW tool was forced into the work piece for sufficient time in order to plasticize around the pin. After adequate plasticization, the tool was moved along the desired direction with a specific translation speed for a single pass. Frictional heating was produced from the rubbing of the rotating shoulder with the work piece, while the rotating pin deformed and stirred the locally heated material and created severe plastic deformation within the sheet

7.2 Weld trails

Main difficulty encountered in a FSW is the process optimization. Different parameters like tool rotation (rpm), welding speed (mm/min) axial force (N), tool design etc. are involved in deciding the sufficient heat generation for the effective (quality) solid state joining of materials.

Additionally, in case of dissimilar aluminum alloys like AL 6061(used for both aerospace and marine) and

AL 5052 used for marine) offsetting is also highly important. Six sets of welding trails were made at the base material only by varying tool rotation speed and keeping downward force and welding speed constant.

S.NO	WELDING TOOL	TOOL ROTATION SPEED (RPM)	WELDING SPEED (MM/MIN)
Al 6061 & 5052			
1	Hexagon tool	1800	20
2	Hexagon tool	1400	20
3	Hexagon tool	1120	20
4	Hexagon tool	900	20
5	Hexagon tool	710	20
6	Four side Probe	1800	25
7	Four side Probe	1400	25
8	Four side Probe	1120	25
9	Four side Probe	900	25
10	Four side Probe	710	25

Table-6 Welding elements and their mechanical properties

8. SPECIMENS WELDED AT VARIOUS ROTATIONAL SPEEDS BY USING HEXAGON PIN TOOL PROFILE AND FOUR SIDE PROBE



Figure 6 welding specimens.

9. Mechanical Testing Procedure

9.1 BRINNELS HARDNESS TESTING

The Rockwell scale is hardness scale based on the indentation hardness of material. The Rockwell test determines the hardness by measuring the depth of penetration of an indenter under a large load compared to the penetration made by preload. The Rockwell hardness tests were conducted to determine the hardness values at weld pool of aluminum AA6061 alloy and AA5052.



The most commonly B and C scales are used to express hardness of the specimen. The B-scale is used for softer material (such as aluminum, brass, and softer steels). It employs hardened steel ball as an indenter and a 100kg weight to obtain a value expressed as —HRB

9.2 TENSILE TESTING

Tensile tests were performed to determine the tensile properties of the weld materials such as tensile strength and percentage of elongation. Specimens were tested and the results of specimens were measured and reported. The tensile test specimens were cut as per standards as shown in fig on the 5mm thick plate. The tensile tests were conducted to determine the tensile strength values of aluminum AL6061 alloy and AL5052 friction stir weld at different rotational speeds, tools and at same feed rate in Universal Testing Machine (UTM) of 400KN.

9.2.1 Hexagon tool welded profiles

1800 Rpm four side probe tool Testing report

Hyderabad Engineering Labs
 MAIL: ACCREDITED LAB, AN ISO 9001:2015 & OHSAS 18001:2007
 Phone: 040-65777873, 22078538, Telex: 040-23072850, 0868559968
 E-mail: shhyt.azn@gmail.com; hyenglabs@gmail.com
 website: www.hyderabadlabs.net

Material Testing
 (Metallurgical, NDT & Civil Testing)

Specimen: H-50-15-C, Prod: TENSILE TEST REPORT, Hyderabad-500 072 India

Job Order No: HYL/2018/259, Date: 05-Nov-2018
 Test Report No: M-1807-A, Date: 19-Nov-2018

Customer Name & Address: HYDERABAD ALUMINUM, HYDERABAD

Machine Details:
 Name: JYF5017H-WB
 S/N: 1075-1340
 Calibrated Date: 19-07-2018
 Next Due Date: 19-07-2019
 Sample Received As: TEST PIECE

Test Procedure: ASTM B 571-2015

Property	Value	Unit	Standard
Specimen Type	Flat		
Specimen Width	12.5	mm	
Specimen Thickness	3.54	mm	
Specimen Length	55.19	mm	
Specimen Gauge Length	50	mm	
Specimen Weight	51.6	g	
Ultimate Load	5.89	kN	
Ultimate Tensile Strength	11.547	MPa	
Yield Load	11.200	MPa	
Yield Strength	4.150	MPa	
Yield Point	78.218	MPa	

Stress-Strain Graph: The graph shows Stress (MPa) on the Y-axis (0 to 11.5) and Strain (mm/mm) on the X-axis (0.0 to 0.2). The curve starts at the origin, rises to a peak stress of approximately 11.5 MPa at a strain of 0.15, and then drops to a yield point of approximately 4.15 MPa at a strain of 0.05.

Notes:
 1. These results pertain to the sample received at our lab.
 2. The Customer is responsible for the test or retest without our written permission.

Customer: _____ Witnessed By: _____

Hyderabad Engineering Labs
 U.S. Reg. # 707641230

9.2.2 Microscope testing specimen

Microscopic examinations and destructive examinations are carried out in cross-sections of the joints. They are typically performed at the stage of development of a tool or a technology. Cross-sections are usually sampled from the beginning, central or final part of the weld. The specimens are treated using a standard procedure for obtaining metallographic microsections. Next, they are etched with a chemical



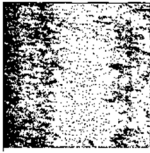
etchant. The choice of the etchant is made depending on the purpose of the test. In the case of aluminium alloys, Keller's reagent is most often employed to reveal the joint microstructure

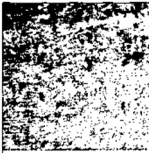
Hyderabad Engineering Labs
NABL ACCREDITED LAB, AN ISO 9001:2015 & ISO 9001:2007
Phone: 040-65277870, Telefax: 040-23075850, M: 8885599668
E-mail: sbkhydlabs@gmail.com / hyderlabs@gmail.com
Website: www.hyderlabs.net

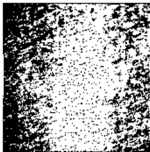
MATERIAL TESTING
METALLURGICAL, NDT & CONSTRUCTION MATERIALS TESTING
5-9-16/10, Prasanthi Nagar, Indl. Estate, Kukatpally, Hyderabad - 500 072, India.

MICRO TEST REPORT
Customer Name & Address: M/s. MEHRAJI ALEKHYA, INTU-VIZIANAGARAM.
Work Order No: HFL-19-10129, Dt: 09.11.2018
Specimen ID: Aluminium test piece -3
Etchant and etching: Keller's reagent

Report No: M-048-2, Dt: 15.11.2018
Specimen orientation: Transverse direction
Used Magnification: 400X


40x


40x



40x

WELD ZONE **HAZ** **BASE METAL**

OBSERVATION: The above specimen microstructure of the weld surface is serial. The structure grain size is 4.5 to 5.5 as per ASTM F 112.

For M/s. Hyderabad Engineering Labs,
R. G. S. J.
Authorized Signature

FORBID SIGNING IN WHITE



10. Conclusion

In this investigation we have learned how to weld the two dissimilar alloys of AL-6061 and AL-5052 using friction stir welding process (FSW)

In this process we are using vertical milling machine for welding process by fixing the tool to the holder and we are using 1800,1400,1120,900 and 710 RPM'S for welding two dissimilar alloys of aluminum by using H.S.S Tool

A parametric model with the weld plates and cutting tool is done in Pro/Engineer.

We have done structural and thermal analysis on the work pieces by using ANSYS software

In structural analysis the displacement and shear stress value at 710 rpm is low comparatively with other rpm's.

In thermal analysis we have observed that heat flux is more in 710 rpm (86.257 w/mm) is better in Hexagon tool profile weld piece and 900 rpm (82.593 w/mm) is better heat flux value when compared with other rpm's.

We compared all results in Analysis the Hexagon tool profile with 700



rpm is better comparatively all values.

We have done UTM testing and hardness testing for knowing the strength and hardness of the welded joint.

By comparing the tensile test values the Hexagon tool profile has high Tensile strength values all Rpm's comparatively.

11. References

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8. G. Gopala Krishna, P. Ram Reddy, M. Manzoor Hussain, Experimental Investigation of Tensile Strength and Deflection Characteristics of Friction Stir Welded Aluminum AA 6351 Alloy Joint, IOSR Journal of Mechanical



12. Author's Bibliography

Author-1

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Guide

Dr. G. Swami Naidu is currently working as Professor and Vice-Principal, Dept. of Mechanical Engineering, J. N. T. U College of Engineering, Vizianagaram Dist, AP, India.. He has published papers in Different manufacturing techniques in International Journals. And attended different workshops in organized by IIT'S. His interests are Inventory new methods of manufacturing techniques and Reading books and he has done his Masters in Metal Forming and Ph. D from JNTU Kakinada in Metallurgical Engineering.



A STUDY ON ISSUES AND CHALLENGES OF WOMEN EMPOWERMENT IN INDIA

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Acharya Nagarjuna University, Guntur

Abstract:

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

Key Words: Gender, Women Empowerment, Education, Health, Socio-Economic Status. Crimes against women, Policy implications

I. Introduction

Gender empowerment conventionally refers to the empowerment of women and has become a significant topic of discussion in regards to development and economics. It can also point to approaches regarding other marginalized genders in a particular political or social context. Women empowerment refers to increasing the spiritual, political, social, educational, gender or economic strength of individuals and communities of women.

Gender and Women's empowerment in India is heavily dependent on many different variables that include geographical location (urban / rural) educational status social status (caste and class) and age. Policies on Women's



empowerment exist at the national, state and local (Panchayat) levels in many sectors, including health, education, economic opportunities, gender based violence and political participation. However there are significant gap between policy advancements and actual practice at the community level. Empowerment of women is essentially the process of upliftment of economic, social and political status of women, the traditionally underprivileged ones, in the society. It is the process of guarding them against all forms of violence. Women empowerment involves the building up of a society, a political environment, wherein women can breathe without the fear of oppression, exploitation, apprehension, discrimination and the general feeling of persecution which goes with being a woman in a traditionally male dominated structure.

Women constitute almost 50% of the world's population but India has shown disproportionate sex ratio whereby female's population has been comparatively lower than males. As far as their social status is concerned, they are not treated as equal to men in all the places. In the Western societies, the women have got equal right and status with men in all walks of life. But gender disabilities and discriminations are found in India even today. The paradoxical situation has such that she was sometimes concerned as Goddess and at other times merely as slave. Empowerment is one of the main procedural concerns when addressing human rights and development.

11. Review of Literature

H. Subrahmanyam (2011) compares women education in India at present and Past. Author highlighted that there has a good progress in overall enrolment of girl students in schools. The term empower means to give lawful power or authority to act. It is the process of acquiring some activities of women.

M. Bhavani Sankara Rao (2011) has highlighted that health of women members of SHG have certainly taken a turn to better. It clearly shows that health of women members discuss among themselves about health related problems of other members and their children and make them aware of various Government provisions specially meant for them.

Doepke M. Tertilt M. (2011) Does Female Empowerment Promote Economic Development? This study is an empirical analysis suggesting that money in the hands of mothers benefits children. This study developed a series of non cooperative family bargaining models to understand what kind of frictions can give rise to the observed empirical relationship.

Duflo E. (2011) Women's Empowerment and Economic Development, National Bureau of Economic Research Cambridge The study argues that the inter relationships of the Empowerment and Development are probably too weak to be



self sustaining and that continuous policy commitment to equally for its own sake may be needed to bring about equality between men and women.

Sethuraman K. (2008) The Role of Women's Empowerment and Domestic Violence in child Growth and Under nutrition in a Tribal and Rural Community in South India. This research paper explores the relationship between Women's Empowerment and Domestic Violence, maternal nutritional status and the nutritional status and growth over six months in children aged 6 to 24 months in a rural and tribal community. This longitudinal observational study undertaken in rural Karnataka, India included tribal and rural subjects.

Venkata Ravi and Venkatraman (2005) focused on the effects of SHG on women participation and exercising control over decision making both in family matters and in group activities.

III. Objectives of the Study

1. To know the need of gender and Women Empowerment.
2. To assess the Awareness of gender and Women Empowerment in India.
3. To analyze the Factors influencing the Economic Empowerment of Women.
4. To study the Government Schemes For Women Empowerment.
5. To identify the Hindrances in the Path of Gender and Women Empowerment.

IV. Research Methodology

This paper is basically descriptive and analytical in nature. In this paper an attempt has been taken to analyze the empowerment of in India. The data used in it is purely from secondary sources according to the need of this study.

V. Crime Against Women

The crimes against women fly directly against orchestrating Women Empowerment in India. A report on the crimes against Women by the National Crime Records Bureau comes up with alarming statistics.

The Crime Head Wise details of reported crimes during the year 2009 to 2013 along with percentage variation are presented in Table 1;



Sl. No.	Crime Head	Year					Percentage Variation in 2013 over 2012
		2009	2010	2011	2012	2013	
1.	Rape (Sec. 376 IPC)	21,397	22,172	24,206	24,923	33,707	35.2
2.	Kidnapping and abduction (Sec. 363 to 373 IPC)	25,741	29,795	35,565	38,262	51,881	35.6
3.	Dowry Death (Sec. 302 / 304 IPC)	8,383	8,391	8,618	8,233	8,083	-1.8
4.	Cruelty by husband or his relatives (Sec. 498-A IPC)	89,546	94,041	99,135	1,06,527	1,18,866	11.6
5.	Assault on women with intent to outrage her modesty (Sec. 354 IPC)	38,711	40,613	42,968	45,351	70,739	56.0
6.	Insult to the modesty of women (Sec. 509 IPC)	11,009	9,961	8,570	9,173	12,589	37.2
7.	Importation of girl from foreign country (Sec. 366-B IPC)	48	36	80	59	31	-47.4
A.	Total IPC crime against Women	1,94,832	2,05,009	2,19,142	2,32,528	2,95,896	27.3
8.	Commission of Sati Prevention Act, 1987	0	0	0	0	0	0.0
9.	Immoral Traffic (Prevention) Act, 1956	2,474	2,499	2,435	2,563	2,579	0.6
10.	Indecent Representation of Women (P) Act, 1986	845	895	453	141	362	156.7
11.	The Dowry Prohibition Act, 1961	5,650	5,182	6,619	9,038	10,709	17.9
B.	Total SLL crime against Women	8,969	8,576	9,507	11,742	13,650	16.2
	Total (A+B)	2,03,804	2,13,585	2,28,649	2,44,270	3,09,546	26.7

A total of 2,44,270 Incidents of Crime against Women (both under IPC and SLL) were reported in the country during the year 2012 as compared to 2,28,649 in the year 2011 recording an increase of 6.4% during the year 2012. These crimes have continuously increased during 2008-2012 with 1,95,856 cases in the year 2008. 2,03,804 cases in 2009 and 2,13,585 cases in 2010 and 2,28,650 case in 2011 and 2,44,270 cases in the year 2012.

The proportion of IPC crimes committed against women towards total IPC crimes has increased during the last 5 years from 9.2% in the year 2009 to 11.2% during the year 2013. variation are presented in table 2;

Sl. No.	Year	Total IPC Crimes	Crime Against Women (IPC) Cases	Percentage to Total IPC Crimes
1	2009	21,21,245	2,03,804	9.2
2	2010	22,24,831	2,13,585	9.6
3	2011	23,25,575	2,28,649	9.4
4	2012	23,87,188	2,44,270	10.2
5	2013	26,47,722	3,09,546	11.2



Central Statistics Office (CSO)'s publication 'Women and Men in India 2014'

Women seem to be most unsafe in their homes while the conviction rate in crimes against women remains very low, a government study has found. Cruelty by husband and relatives continue to have the highest share (38%) of crimes against women, followed by 'assault on women with intent to outrage her modesty' (23%), kidnapping and abduction (17%) and rape (11%). In a chapter on social obstacles in women empowerment, the Central Statistics Office (CSO)'s publication 'Women and Men in India 2014' found a phenomenal increase (157%) in reporting of 'indecent representation of women' cases in 2013 over 2012. Other noticeable increases in reporting over 2012 were in assault on women with intent to outrage her modesty (56%) and insult to modesty of women (37%).

In 2013, the police investigated around 86% of complaints lodged in respect of 'indecent representation of women' of which 85% were charge-sheeted. 25% of cases under were tried in court, out of which 21% cases ended in conviction.

In the report, secretary in the ministry of statistics and programme implementation TCA Anant said, "It is a well regarded fact that societies with discriminations on the basis of gender are lagging behind not only in social aspects but also in economic growth and they fail to reduce poverty compared to those societies where discrimination is either less or does not exist at all."

VI. Present Situations of Women

New Delhi: Being equal to their male counterparts is still a far cry for Indian women. Not only are they marginal as public figures an average Indian women can hardly call the shots at home or outside. In 2012, women occupied only 8 out of 74 ministerial positions in the union council of ministers. There were only 2 women judges out of 26 judges in the Supreme Court and there were only 54 women judges out of 634 judges in various high courts.

Shocking Facts: According to 2013, UNDP report on Human Development Indicators, all south Asian Countries except Afghanistan, were ranked better for women than India. It predicts: an Indian girl child aged 1-5 years is 75% more likely to die than the boy child. A woman is raped once in every 20 min and 10% of all crimes are reported. Women form

VII. Why Need of Gender and Women Empowerment?

Reflecting into the "Vedas Purana" of Indian culture, women is being worshiped such as LAXMI MAA, goddess of wealth; SARSWATI MAA, for wisdom; DURGA MAA for power. The status of women in India particularly in rural areas needs to address the issue of empowering women. About 66% of the female population in rural area is unutilized. This is mainly due to existing social



customs. In agriculture and Animal care the women contribute 90% of the total workforce. Women constitute almost half of the population, perform nearly 2/3 of its work hours, receive 1/10th of the world's income and own less than 1/100th the world property. Among the world's 900 million illiterate people, women out number men two to one. 70% of people living in poverty are women. Lower sex ratio i.e. 933, The existing studies show that the women are relatively less healthy than men though belong to same class. They constitute less than 1/7th of the administrators and managers in developing countries. Only 10% seats in World Parliament and 6% in National Cabinet are held by women.

Hindrances of Women Empowerment: The main Problems that were faced by women in past days and still today up to some extent:

Gender discrimination 2. Lack of Education 3. Female Infanticide 4. Financial Constraints 5. Family Responsibility 6. Low Mobility 7. Low ability to bear Risk 8. Low need for achievement	Absence of ambition for the achievement Social status Dowry Marriage in same caste and child marriage (still existing) Atrocities on Women (Raped, Kicked, Killed, Subdued, humiliated almost daily)
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Need for Women Empowerment : Women are deprived of

Decision Making Power Freedom of Movement Access to Education	Access to Employment Exposure to Media Domestic Violence
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Ways to Empower Women

- Changes in women's mobility and social interaction
- Changes in women's labour patterns
- Changes in women's access to and control over resources and
- Changes in women's control over Decision making
- Providing education
- Self employment and Self help group
- Providing minimum needs like Nutrition, Health, Sanitation, Housing
- Other than this society should change the mentality towards the word women



- Encouraging women to develop in their fields they are good at and make a career

VIII. Government Schemes For Women Empowerment

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

1. Rastria Mahila Kosh (RMK) 1992-1993
2. Mahila Samridhi Yojana (MSY) October, 1993.
3. Indira Mahila Yojana (IMY) 1995.
4. Women Entrepreneur Development programme given top priority in 1997-98.
5. Mahila Samakhya being implemented in about 9000 villages.
6. Swayasjdha.
7. Swa Shakti Group.
8. Support to Training and Employment Programme for Women(STEP).
9. Swalamban.
10. Crèches/ Day care centre for the children of working and ailing mother.
11. Hostels for working women.
12. Swadhar.
13. National Mission for Empowerment of Women.
14. Integrated Child Development Services (ICDS) (1975),
15. Rajiv Gandhi Scheme for Empowerment of Adolescence Girls (RGSEAG) (2010).
16. The Rajiv Gandhi National Crèche Scheme for Children of Working Mothers.
17. Integrated Child Protection scheme (ICPS) (2009-2010).
18. Dhanalakahmi (2008).
19. Short Stay Homes.
20. Ujjawala (2007).
21. Scheme for Gender Budgeting (XI Plan).
22. Integrated Rural Development Programme (IRDP).
23. Training of Rural Youth for Self Employment (TRYSEM).
24. Prime Minister's Rojgar Yojana (PMRY).
25. Women's Development Corporation Scheme (WDCS).
26. Working Women's Forum.



27. Indira Mahila Kendra.
28. Mahila Samiti Yojana.
29. Khadi and Village Industries Commission.
30. Indira Priyadarahini Yojana.
31. SBI's Sree Shaki Scheme.
32. SIDBI's Mahila Udyam Nidhi Mahila Vikas Nidhi.
33. NGO's Credit Schemes.
34. National Banks for Agriculture and Rural Development's Schemes

The efforts of government and its different agencies are ably supplemented by nongovernmental organizations that are playing an equally important role in facilitating women empowerment. Despite concerted efforts of governments and NGOs there are certain gaps. Of course we have come a long way in empowering women yet the future journey is difficult and demanding.

IX. Status of Women Empowerment

The status of Women Empowerment cannot be visualized with single dimension rather multidimensional assessment in terms of various components of women's life and their status would bring a clear conception. So, this paper tries to give a basic idea about the condition and status of women in terms of employment, education, health and social status. Before going to elaborate separately let us have a quick view of the overall status of women in terms of gender gap index prepared by World Economic Forum in 2012

Table 3: Details of Gender Gap Index – 2012 (Out of 135 Countries)

Gender sub - Indices	India		Srilanka	
	Rank	Score	Rank	Score
Economic participation opportunity	123	0.4588	105	0.5596
Educational Attainment	121	0.8525	108	0.9946
Health and survival	134	0.9612	1	0.9796
Poltical Empowerment	17	0.3343	22	0.3151
Overall Index	105	0.6442	39	0.7122

Source: World Economic Forum (2012) Global Gender Gap Index – 2012



The above table clearly depicts the status of low level of attainment of women in the varied field of their attainment. The ranking and scores for India amply proves that it is found in the lower rank even compared to Sri Lanka in all sub-indexes of gender equality. India gained eight places (from 113 rank in 2011 to 105 rank in 2012) as a result of improvement in the educational attainments and political empowerment. Keeping aside the Political Empowerment, the other three indices is all above the rank of 100. The Political Empowerment ranks quite high may be due to the 73rd and 74th Constitution amendments of India providing greater opportunity to women to take part in active politics.

X. Reasons for The Empowerment of Women

Today we have noticed different Acts and Schemes of the central Government as well as state Government to empower the women of India. But in India women are discriminated and marginalized at every level of the society whether it is social participation, political participation, economic participation, access to education, and also reproductive healthcare. Women are found to be economically very poor all over the India. A few women are engaged in services and other activities. So, they need economic power to stand on their own legs on par with men. Other hand, it has been observed that women are found to be less literate than men.

According to 2001 census, rate of literacy among men in India is found to be 76% whereas it is only 54% among women. Thus, increasing education among women is of very important in empowering them. It has also noticed that some of women are too weak to work. They consume less food but work more. Therefore, from the health point of view, women folk who are to be weaker are to be made stronger. Another problem is that workplace harassment of women. There are so many cases of rape, kidnapping of girl, dowry harassment, and so on. For these reasons, they require empowerment of all kinds in order to protect themselves and to secure their purity and dignity. To sum up, women empowerment can not be possible unless women come with and help to self-empower themselves. There is a need to formulate reducing feminized poverty, promoting education of women, and prevention and elimination of violence against women

XI. Challenges

There are several constraints that check the process of women empowerment in India. Social norms and family structure in developing countries like India, manifests and perpetuate the subordinate status of women. One of the norms is the continuing preference for a son over the birth of a girl



child which is present in almost all societies and communities. The society is more biased in favor of male child in respect of education, nutrition and other opportunities. The root cause of this type of attitude lies in the belief that male child inherits the clan in India with an exception of Meghalaya. Women often internalize the traditional concept of their role as natural thus inflicting an injustice upon them. Poverty is the reality of life for the vast majority women in India. It is the another factor that poses challenge in realizing women's empowerment. There are several challenges that are plaguing the issues of women's right in India. Targeting these issues will directly benefit the empowerment of women in India

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

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

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

Professional Inequality: This inequality is practiced in employment and promotions. Women face countless handicaps in male customized and dominated environs in Government Offices and Private enterprises.

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

Household Inequality: Household relations show gender bias in infinitesimally small but significant manners all across the globe, more so, in India e.g. sharing burden of housework, childcare and menial works by so called division of work.

XII. Constitutional Provisions For Empowering Women In India

Equality before law for all persons (Article-14).

Prohibition of discrimination on grounds of religion, race, caste, sex or place of birth (Article 15(I)).

However, special provisions may be made by the state in favors of women and children Article 15(3).



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

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

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

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

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

XIII. Findings of The Study

1. Globalization, Liberalization and other Socio - Economic forces have given some respite to a large proportion of the population. However, there are still quite a few areas where women empowerment in India is largely lacking.
2. There needs to be a sea – change in the mindset of the people in the country. Not just the women themselves, but the men have to wake up to wake up to a world that is moving towards equality and equity. It is better that this is embraced earlier than later for our own good.
3. There are several Government programmes and NGOs in the Country, there is still a wide gap that exists between those under protection and those not.
4. Poverty and illiteracy add to these complications, The Empowerment of Women begins with a guarantee of their health and safety.
5. Empowerment of Women could only be achieved if their economic and social status is improved. This could be possible only by adopting definite social and economic policies with a view of total development of women and to make them realize that they have the potential to be strong human beings.
6. In order to create a sustainable world, we must begin to Empower Women.

XIV. Suggestions

1. The first and foremost priority should be given to the education of women, which is the grassroots problem. Hence, education for women has to be paid special attention.
2. Awareness programmes need to be organized for creating awareness among women especially belonging to weaker sections about their rights.



3. Women should be allowed to work and should be provided enough safety and support to work. They should be provided with proper wages and work at par with men so that their status can be elevated in the society.
4. Strict implementation of Programmes and Acts should be there to curb the mal-practices prevalent in the society.
Augment extra donation to literacy campaign.
5. Add to social responsiveness.
6. Add to in self-confidence and personality development.
7. Change in instruction structure.
8. Extra occupation slanting
9. Learning impartiality.
10. Domestic savings and right of entry to acknowledgment.
11. Introduce girls to join more and more scientific.
12. Specialized courses like in computers and other professional courses.

XV. Conclusion

Thus, the attainment in the field of income / employment and in educational front, the scenario of women empowerment seems to be comparatively poor. The need of the hour is to identify those loopholes or limitations which are observing the realization of empowerment of women and this initiative must be started from the women folk itself as well as more importantly policy initiative taken by the state and society. Let us take the oath that we want an egalitarian society where everybody whether men or women get the equal opportunity to express and uplift one's wellbeing and wellbeing of the society as whole.

Women's empowerment is not a Northern concept women all over the world, including countries in South, have been challenging and changing gender inequalities since the beginning of the history. These struggles have also been supported by many men who have been outraged at injustice against women. Women represent half the world's population and gender inequality exists in every nation on the planet. Until women are given the same opportunities that men are, entire societies will be destined to perform below their true potentials. The greatest need of the hour is change of social attitude to women

. "When women move forward the family moves, the village moves and the nation moves". It is essential as their thought and their value systems lead the development of a good family, good society and ultimately a good nation. The best way of empowerment is perhaps through inducting women in the mainstream of development. Women empowerment will be real and effective only when they are endowed income and property so that they may stand on their feet and build up their identity in the society.



The Empowerment of Women has become one of the most important concerns of 21st century not only at national level but also at the international level. Government initiatives alone would not be sufficient to achieve this goal. Society must take initiative to create a climate in which there is no gender discrimination and women have full opportunities of self-decision making and participating in social, political and economic life of the country with a sense of equality.

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THE FLAW OF ETHIOPIAN BITS IN LIGHT OF MODEL BITS OF THE US AND INDIA: A CRITICAL ANALYSIS

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Abstract

As a rule BITs consist of international law of general standards of international economic law and divergent rules peculiar to its domain. For the sake of argument, this article analyses Ethiopian BITs can be an optimistic engine in broad and legally enforceable protections offered to investors by BITs. This avoids the considerable debate in the Ethiopian BITs provisions on the efficacy of FDI as an engine for promoting economic development in the country. Nevertheless, Ethiopian BITs do not encompass any provisions on issues pertaining to environment protection; labor rights and an obligation against corruption. BITs lock-in primary conditions attractive to investors that tend to be related to vertical investment flows and trade competition, and consist of low environmental standards, labor rights and anti-corruption. The combined lock-in and hampering effects of Ethiopian BITs are sources of popular grievance and dissent in country that host foreign investment. Thus, I argue that Ethiopian BITs should incorporate the missing provisions for higher accountability and a lower threat insight for dissent, mitigating the subdued effect of Ethiopian BITs.

Key Words: Ethiopian BITs, Environmental protection, labor rights, and an obligation against corruption.

1. INTRODUCTION

1.1 BACKGROUND AND PURPOSE

The primary objective of this article is on the flaw of Ethiopian BITs in light of the US and India Model BITs will merit special attention. One of the salient features of BITs recounts to the key role of bilateral treaties in investment relations. BITs is one of the most dynamic and controversial arenas of international investment law. This article is more pertinent to Ethiopian forthcoming BITs likely to be concluded pertaining to insertion of provisions on environment protection and an obligation against corruption. For foreign direct investment signifies one of the most pertinent legal and economic incidents of the last couple of decades at an international array. The relationship existing between the protection of foreign investments, on the one hand, and the



discipline of labor rights, environmental and social concerns, on the other hand, is extremely problematic and crucial at international law level. The increased flow of FDI global has prompted governments, international organizations and the private sector to adopt substantive legal rules and to establish international or regional bodies and procedures for the peaceful settlement of disputes. This set of rules must interact with the international law rules providing for the protection of the most fundamental Human and labor rights and the environment. Astounding a balance between the investors' rights and the protection of the common concerns affected by the realization of the investments is often multifaceted. The principal aim of this article is examining content substantive rules Ethiopian BITs and then making criticism against missing investment concerned provisions.

FDI plays an essential role in economic development in Ethiopia. The legal regime for investment protection is based upon standards of treatment established by BITs¹ and, domestic law². It is plausible to construe from the preambles of existing BITs that a long-standing rationale for the conclusion of BITs has been their purported usefulness in stimulating new investment flows between the signatory countries. In essence, there is a straightforward expectation that the treaties will encourage new investment, which will, in turn, contribute to the economic development of the host state. Underlined provisions should balance the reciprocal³ basis in order to effective enforcement of BITs.

Thus, this article gives emphasis on the content and the application of the main standards of protection of FDI in BITs. Among them, it analyses the fair and equitable treatment, the full protection and security, the most-favored nation and the national treatment standards, as well as the legal regime for expropriation and critiques on the missing very important provisions like environment protection, labor rights and an obligation against corruption in the Ethiopia BITs. It is worth mentioning to note the decentralized nature of investment protection law deems compactly and almost inevitably entrenched in the contemporary legal order, it is not worth pausing for a moment to consider the rationale behind of why Ethiopia BITs has deviated from envisaging provisions on investment concerned issues like environment protection, labor rights an obligation against corruption and so forth.

¹ See, preambles of all bits which have concluded by Ethiopia e.g. see Agreement between the government of the federal republic of Ethiopia and the government of the republic of France for the reciprocal promotion and protection of investments (2003) Para 2.

² See, FDRE constitution 9(4) cum Ethiopia investment proclamation 769/2012, Articles 2(5), 4(1) (c), (d), 5(7), and article 11.

³ See, Preambles of existing Ethiopia BITs about 32 BITs are by now under enforcement.



The researcher argues that enclosing an environmental protection, labor rights and an obligation against corruption provisions in BITs, the potential constraints due to international investment law are significant to analyze, because they might play the vital roles for successful implementation of the BITs in Ethiopia.

2. THE CONCEPT OF ETHIOPIAN BITS

An international investment law deals with the regulation of the behavior of sovereign States towards foreign investors. Initially the province of customary international law, international investment law has become dominated by bilateral and multilateral investment treaties of which there are currently increasing in number. Bilateral investment treaties have been grown out of an emergency condition, which reached its climax as in the late 1960s and early 1970s. By that time, an ideological and political conflict was contrasting developed countries and certain capital importing (developing countries) with respect to expropriation of foreign investment and for a while, the positions of developed countries and developing countries on the issue deemed incompatible. Since, the first BIT was signed in 1959 between Germany and Pakistan⁴ and its number has grown progressively; then thousands of BITs have been negotiated among hundreds of different state parties. In fact, today there are nearly 3,000 BITs in force among these BITs, 32 amounts are concluded by Ethiopia⁵. Having lost almost all its investments after its defeat in the Second World War, West Germany thus entered into a BIT with Pakistan in 1959, which intended 'to create favorable conditions for investments by nationals and companies of either state in the territory of the other State'⁶ Despite the aggressive campaign waged by some developing countries against the relevant customary international law, BITs had been embraced by many potential host governments⁷. Whereas sweeping characterizations would contradict the diversity of these treaties, a number of general features have emerged. The distinctive Model BITs comprise provisions designed to offer certain absolute standards of treatments. The

⁴ See, Germany –Pakistan BIT 1959.

⁵ See, Ethiopian investment commission available at www.investethiopia.gov.et, Accessed on 19 October 2017.

⁶ See :Preamble in 1959 Germany-Pakistan BIT and see further: The recent available statistics on the number of international investment agreements are available in the 'UNCTAD World Investment Report 2013' <<http://www.unctad-docs.org/files/UNCTAD-WIR2013-Full-en.pdf>> accessed 17 July 2017

⁷ It is interesting to note, however, that some of the most vociferous opponents of the Hull Rule were in fact latecomers to the BITs movement. As of the late 1990s, Mexico for example had signed solely two BITs, with Spain and Switzerland, Brazil did not sign a BIT until 1994, and as of the late 1990s none of its 10 bilateral agreements had entered into force. India's pattern is similar to that of Brazil. See //<http://www.worldbank.org/icsid/treaties/treaties/htm>>, Accessed, 19 July 2017.



fundamental inspiration is to guarantee and to avert discrimination in the conduct of international investments. Essentially there are a number of principles of foreign investment law explicitly, fair and equitable treatment, relative standards of treatment (National treatment or Most-Favored Nation); protections against expropriation or nationalization; an obligation against corruption⁸, labor rights and recourse to dispute-settlement (state-to-state and investor-to-state). Many BITs also envisage provisions allowing for transfer of funds and for some protection from war and civil disturbance.

The substantial number of BITs raises the challenge of choosing the most appropriate substantive rules for environmental protection and labor rights. Investment is considered to be a vital input for economic development. But it has been observed that Ethiopian BITs exhibit sensitivity to development policy and are based on outdated and defective forms because of keeping out of environmental protection, labor rights and an obligation against corruption provisions. The environmental problems progressively more construed and recognized since the late 1960s have been regulated on the international plane in two main forms⁹. First, a set of broad policies have been developed and used as the basis of a now mature branch of international law, i.e. international environmental law¹⁰. Such policies, which comprise prevention, precaution, polluter-pays, environmental impact assessment, participation, common but differentiated responsibilities, inter-generational equity or sustainable development, to name but a few, have provided the basis for the adoption of more specific legal regimes tackling particular problems (e.g. marine and freshwater pollution; atmospheric pollution, ozone depletion, climate change; species, habitat and biodiversity protection; chemical and hazardous waste regulation) Second, these policies are being increasingly mainstreamed within the broader body of public international law. From this second angle, the law of environmental protection is not a 'branch' but a 'perspective' increasingly influencing most areas of international law. Such influence is principally noticeable in human rights law and, to a lesser extent, in international humanitarian law, trade law and, increasingly, in international investment law.¹¹

3. CRITICISM AGAINST ETHIOPIAN BITS

The strongest criticism against Ethiopian BITs in my scene is that it is biased by excluding to incorporate investment concern provisions. Accordingly there is dearth of provision pertaining to environmental protection; labor rights and an

⁸ See, India Model BIT (2015) article 9

⁹ Jeweled W.Salacuse: The three laws of international investment (2010), Tufts University P3.

¹⁰ Ibid

¹¹ Ibid



obligation against corruption in Ethiopian BITs. So it is an imperative for the prospective any investment agreements to incorporate lacking provisions. Nowadays, the conservation, protection and enhancement of human environment are most important issues all over the globe. Human environment consists of both physical environment and biological environment. But Ethiopian BITs have fallen short to incorporate these important provisions.

3.1 ETHIOPIAN BITS IN ENVIRONMENTAL PERSPECTIVE

This part principally emphasizes on the need of enclosure of environmental legal obligation within the framework of Ethiopian BITs. In order to be able to urge a satisfactory environmental protection rules, it is critical that national governments are able to employ effective measures relevant to the environmental problems at any given time when they are concluding international investment agreements. Because the creation of competing objectives of protecting human rights and the environment from the abuse of multinational corporations directs to recognition of the regulatory right of the state to interfere in circumstances where the multinational corporate investor abuses human rights such as labor rights or causes environmental damage.¹² Indeed, the significance of environmental science and environmental analysis cannot be disputed. Managing environmental hazards has become very crucial. Its components comprise biology, geology, chemistry, physics, engineering, sociology, health, anthropology, economics, statistics, computers and philosophy.¹³ Taking this issue into consideration, the 2012 US Model BIT provides emphasis on the international community's growing awareness of environment and labor protections in financial and economic agreements. Civil society organizations, trade unions and NGOs progressively more agitate for these rights to be addressed and protected in economic instruments and commercial deals, particularly due to public concerns that nations are declining their environmental laws and regulations, or submitting specific waivers to big enterprises, in pursuit of more FDI inflows. Under the provision of 2012 US Model BIT comparatively illustrated exhaustive in an environmental concerns, and addressed the balance that states must reach between attracting additional investment activity and protecting the human life and the environment. The article unequivocally declares in paragraph (1) that states acknowledge that their respective environmental laws and policies, and multilateral environmental agreements to which they are both Party, play a pivotal role in protecting the environment. This statement of recognition is new to the 2012 Model BIT. The statement in

¹² M. Sornarajah: international law on foreign investment, Cambridge University Press., 3rd Edition, (2010) P77

¹³ See, Erich Barouche :Environmental Studies For Undergraduate Module ,University Grants commission, New Delhi (2004),P3



paragraph (2) has been already incorporated in the 2004 Model BIT. Article 12(2) compels the parties to stick on that it is wrong to attract investment by declining or plummeting domestic environmental laws. Hence, each state is prohibited to waive or otherwise derogate from its environmental laws, or fail to effectively enforce those laws, as an encouragement for investment in its territory. The principal aim of the entire Article 12 is the protection of the environment and then Article 12(4) provides a non-exhaustive list of methods by which a government can regulate the environmental protection. Thus, the researcher argues that it is increasingly essential that developing countries are empowered to solve their own environmental problems and to accede to international agreements meant to solving the major global environmental problems not only in international terms, but to a mounting degree of direct importance to the state of the environment in Ethiopia.

Further, Ethiopia government authorities and stakeholders engaged in environment concerns. An environmental legislations should be enforced effectively by revising new instruments, mechanisms and procedures like environmental impact assessment and environmental audit and integrate(whilst commencing mega investment projects) environmental objectives in manufacturing processes, minimum usage of hazardous materials and toxic chemicals, careful usage of toxic gases will reduce environmental load to ensure compliance with international commitments, to manage environmental risks and to promote respect for rights affecting labor relations and employment conditions.

3.2 ETHIOPIAN BITS IN THE ASPECT OF LABOR RIGHT

Employment opportunities are conspicuously one of the most pivotal benefits that companies and governments promise when they sign BITs and IIAs for investment activities in order to promote employment creation. However, employments can solely be beneficial if employment standards are upheld. Labor rights are essentially regulated by domestic law. The lion's share of this employment is taken up by labor jobs requiring work at construction sites, factories, and mines. Whereas an overt purpose of foreign firms in Ethiopia is to reap the benefits of cheap labor, there are reports of wages lower even by Ethiopian standards being paid. Entry level salary in Ethiopia is between US\$35-40 per month, which is meager compared to Chinese figure of US\$629 per month. There is no minimum wage legislation in Ethiopia except for public servants. Regardless of trade unions' protests, there is no prospect of government intervening in minimum wage settlement in near future. Ethiopia has a labor law in this country, which is in line with international standards, however the



government cannot actually intervene in setting the minimum wage.¹⁴ The justification for this stance is given by asserting how manufacturing is in a nascent stage and low wages with no fixed minima is to attract the investors. As far as jobs slightly higher up on the skill-intensity scale are concerned, local graduates have choice between profiles such as clerks, secretaries, guards etc. Managerial level positions are all occupied by foreigners.¹⁵ Although the researcher argues that there is no an apparent rationalization why is labor law under the federal jurisdiction in Ethiopia.¹⁶ Implausibly in the US where a federal structure is in place, labor matters are within concurrent jurisdiction in the sense that where the employer is envisaged in inter-state or international commerce or where its products or services cross state borders, it will fall under federal competence and in all other cases it will be a state matter. However, Ethiopia appears to lack the capacity to closely monitor the employment and labor practices of foreign investors in the country. There is some evidence that labor rights violations are occurring horticultures and construction scenes running in the county by foreign firms. By hook or by crook, it looks as if a bureaucratic administration.

To a certain extent the researcher argues for Ethiopia if the sound performance requirements inflicted in connection with foreign investments are requirements concerning national co-ownership, purchase of domestic goods and services in the host country, employment of local manpower and diverse forms of transfer of authority. Such requirements might engage trade distortion pertaining to halfway products or other unsuccessful overriding of operational decisions that make the investment less profitable than it would or else have been. In assessing the need for further ban of performance requirements, it is more recommendable and pertinent to take into account any investment agreements that the other party to the agreement has concluded with other least developed countries that are competitors of Ethiopian commerce and industry. If during the negotiations a developing country makes it apparent that it is advantageous to maintain certain performance requirements, Ethiopia should in principle be open to abiding by this after a concrete assessment of the aptness meaning it requires further inquiry.

¹⁴ Prateeksha Tiwari: Indian and Chinese FDI in Ethiopia: Nature, Impact, and Challenges ;Volume 1,(2015) P 126

¹⁵ Ibid, P127.

¹⁶ Ibid FDRE Constitution (1995) Article 55(3)



3.3. ETHIOPIAN BITS IN PERSPECTIVE OF OBLIGATION AGAINST CORRUPTION

The term “corruption” implies to impurity or debasement and when it is found in the criminal law it refers to depravity or gross impropriety or rent-seeking.¹⁷ The existing investment legislations, BITs and their accompanying implementing rules marks a milestone towards a more open and transparent legal environment for investment but is solely the first step in a long process. The law still leaves many questions unanswered, conspicuously pertaining to obligation against corruption and the criteria for inflicting investment related wrong acts. The mechanisms for enforcing land lease contracts and availing lands for investment activities remain extremely feeble. The current regulatory framework is complex, with half a dozen laws regulating the entry of investors, depending on the sector and location of the investment and on whether or not the investor is foreign or domestic. The approval process is equally complex and sometimes obscure.

One arena in which the government of Ethiopia can promote responsible conduct for all investors, domestic and foreign, is through revenue transparency. By increasing the transparency in the governance of the country’s natural resources, it contributes to curb corruption in these sectors and build a better investment environment. Further international investment tribunals are willing to venture into private law areas by elevating contractual disputes to BIT disputes, they should also be prepared, at the same time, to look into credible claims of corruption by foreign investors, especially MNEs, regarding either securing lop-sided investment contracts from corrupt politicians and senior civil servants or other corrupt business practices.¹⁸ An effective anti corruption law enforcement is highly significant for the development of a sound investment environment in these sectors, remarkably in large scale agricultural investments which respond to the greatest share of foreign income for Ethiopia. Astonishingly the existing BITs in Ethiopia deviates envisaging an obligation against corruption clauses except asserting transparency provision which impliedly prevents corrupt practices. However, corrupt practices are articulated in FDRE criminal code as follow: Article 408. - Corrupt Practices.

- (1) Any public servant who, directly or indirectly, seeks, receives or exacts a promise of an advantage for himself or another, inconsideration for the performance or omission of an act, in violation of the duties proper to his office, is punishable with simple imprisonment for not less than one year,

¹⁷ Black’s law dictionary, 7th Edition (1999), see further ,Rollin M.Perkins and Ronald N.Boyce Criminal law ,3rd Edition (1982) P855.

¹⁸ Surya P Subedi: international investment law reconciling policy and principle (2016) p222.



or rigorous imprisonment not exceeding ten years and fine not exceeding twenty thousand Birr.

- (2) Where the purpose of the breach of responsibility or duty solicited, the extent of the advantage received, the official capacity or powers of the person corrupted or the extent of the harm to private, public or State interests renders the case of particular gravity, the punishment shall be rigorous imprisonment from seven years to fifteen years and fine not exceeding fifty thousand Birr.
- (3) Where two or more of the circumstances mentioned in sub article (2) above are present concurrently, the punishment shall be rigorous imprisonment from ten years to twenty-five years and fine not exceeding one hundred thousand Birr.
- (4) Any public servant who, in the manner specified under sub article (1) of this Article, and in respect of a duty connected with international trade, solicits, accepts or agrees to accept an advantage or a gift from any foreign State, person or organization, including a transnational corporation, shall, according to the circumstance of the case, be liable to one of the punishments prescribed in the three sub-articles hereinabove¹⁹

Thus, corruption is considered as crime against people in light of Ethiopia criminal code of 2004 as dictated hereinabove. Unlikely, India Model BIT has articulated very clear provision pertaining to an obligation against corruption as hereinafter.

- 1) Investors and their Investments in the Host State shall not, either prior to or after the establishment of an Investment, offer, promise, or give any undue pecuniary advantage, gratification or gift whatsoever, whether directly or indirectly, to a public servant or official of the Host State as an inducement or reward for doing or forbearing to do any official act or obtain or maintain other improper advantage.
- 2) Except as otherwise allowed under the Law of the Host State, Investors and their Investments shall not engage any individual or firm to intercede, facilitate or in any way recommend to any public servant or official of the Host State, whether officially or unofficially, the award of a contract or a particular right under the Law of the Host State to such Investors and their Investments by mechanisms such as payment of any amount or promise of payment of any amount to any such individual or firm in respect of any such intercession, facilitation or recommendation.
- 3) Investors and their Investments shall not make illegal contributions to candidates for public office or to political parties or to other political

¹⁹ The Criminal Code of the FDRE proclamation No.414/ 2004, Article 408 (1-4)



organizations. Any political contributions and disclosures of those contributions must fully comply with the Host State's Law.

- 4) Investors and their Investments shall not be complicit in any act described in this Article, including inciting, aiding, abetting, conspiring to commit, or authorizing such acts.²⁰.

Above mentioned provision of the 2015 India Model BIT deals with the commitment to prevent anti-corrupt practices emerges to have been derivative from existing requirements under Indian laws on corruption²¹ and India's obligations²² under the 2003 United Nations Convention against Corruption²³ as well as provisions relating to foreign contributions to political parties and candidates.²⁴ It is similar to the SADC Model (Article 10) and the IISD Model (Article 13), with the exception of disclosures relating to political funding. Arbitral tribunals have in the past permitted²⁵ corruption by the investor to be raised as a ground for denial of benefits to the investor by holding that investment must be lawful even when there is no express provision requiring so in the contract India's interests as a Host State can be protected by requiring that the investment has to be made and maintained in accordance with its laws, as already done at several places in the 2015 Model. This is as all the requirements predetermined under article 9 are already covered under different domestic

²⁰ Ibid, India Model BIT (2015) Article 9(1-4)

²¹ Prevention of Corruption Act, 1988

²² United Nations Convention against Corruption, Signature and Ratification Status as of 1 April 2015, available at <http://www.unodc.org/unodc/en/treaties/CAC/signatories.html>.

²³ UNODC, United Nations Convention Against Corruption, available at: http://www.unodc.org/documents/treaties/UNCAC/Publications/Convention/08-50026_E.pdf. (Accessed 4, November 2017)

²⁴ See Section 29B, Representation of the People Act, 1951, and Section 3, Foreign Contribution Regulation Act, 2010.

²⁵ Illustration, In *World Duty Free vs. Republic of Kenya*, the tribunal held that no claim could be brought under an agreement that has been procured by the investor through corrupt manner. The tribunal held that bribery is contrary to the international public policy of most, if not all, States and Kenya has been entitled to avert the contract under the applicable laws, namely the laws of England and Kenya. See, ICSID Case No. Arab./00/7, Award, 5 September 2006, available at: <http://www.italaw.com/documents/WDFv.KenyaAward.pdf>. In *Metal-Tech Ltd vs. Republic of Uzbekistan*, the tribunal relied on the legality requirement contained in the definition of "investment" under the Israel-Uzbekistan BIT to hold that an investment made through corrupt means would not be entitled to the benefits of the dispute settlement provisions in the treaty. The Israel-Uzbekistan BIT defined "Investment" in Article 1(1): "The term 'investments' shall comprise any kind of assets, implemented in accordance with the laws and regulations of the Contracting Party in whose territory the investment is made, including, but not limited to.



Indian laws. Though, the inference of this provision should also be construed from the point of view of Indian investors investing overseas. A commitment against corruption is an ineffectual without corresponding compulsions upon the Host State, such as the requirement of transparency and competition in public procurement and decision-making. Some of these requirements are already inflicted on States Parties to the UN Convention against Corruption.²⁶

Article 15: Transparency

- (1) Each Contracting Party shall promptly publish, or otherwise make publicly available, its laws, regulations, procedures and administrative rulings and judicial decisions of general application as well as international agreements which may affect the investments of investors of the other Contracting Party in the territory of the former Contracting Party.
- (2) Nothing in this Agreement shall require a Contracting Party to furnish or allow access to any confidential or proprietary information, including information concerning particular investors or investments, the disclosure of which would impede law enforcement or be contrary to its laws protecting confidentiality or prejudice legitimate commercial interests of particular investors.²⁷

When the US experience is observed, akin to Ethiopia BIT; transparency²⁸ provision is asserted under Article 10 of the 2012 US Model BIT, each state party is imposed to make sure that its laws, regulations, procedures, and administrative rulings of general application, and adjudicatory decisions respecting any matter covered by the BIT, are promptly published or else made publicly accessible. This rule's principal aim is the promotion of transparency of a host state's legal domestic framework governing investments by nationals and foreigners.²⁹

In conclusion this section analyzed that an investment proclamation governing investment and Ethiopia investment commission have not managed to combat against corruption provision for the achievements of what have been expected by GTP II. Doctrinal analysis of the EIC has exposed inadequacy in regulating FDI. On the contrary, both BITs provisions and investment proclamation are also not sufficient enough as they are silent pertaining to corruption that poses challenges

²⁶ Ibid ,The 2015 India Model BIT ,Article 9

²⁷ See, Agreement between the Republic of Finland and the Federal Democratic Republic of Ethiopia for the Promotion and Protection of Investments (2006), Article 15 (1&2). This is done intentionally because all existing 32 Ethiopian BITs are similar in both substantive rule as well as procedural provisions.

²⁸ Ibid US Model BIT, Article 10.

²⁹ Ibid, the 2012 US Model BIT Article 10



in regulating FDI efficiently. The researcher argue that in order to strike a chord stakeholders every legislations in due sectors ought to encompass an obligation against corruption because the impact of corruption resulted the existing social and economic anarchy in the country.

4. CONCLUSION

In conclusion the researcher assures prospective Ethiopia model BIT should spell out that before assets qualify for treaty protection such assets must contribute to economic development, the investor must make responsibility of capital or other resources, the investor must have an expectation of gaining or profiting from invested assets, and the investor must demonstrate evidence of assumption of risk. Although, there is an essential enhancement in providing legal protection to environment in Ethiopia yet there are several loopholes. For instance, one of the striking crises of environment can be construed as under industrialization pertaining to the mega investment projects and the development of the means of transport and communication has not solely polluted the environment, but also has led to the lessening of the natural resources.

GOE should revisit the existing BITs provisions and efficiently monitor labor and environmental issues arising over the intact duration of investment projects from inception to decommissioning. The intentional preclusion of environmental protection clause could have been right at the point of entry or after investment has been started. This effect embraces and is larger when I restrict Ethiopian BITs confine to solely those treaties that have strict arbitration clauses (ICSID arbitration) or are probably to govern over de facto investment flows (North-South BITs). Moreover, I find that the effect of the cumulative number of ratified Ethiopian BITs is conditional on political regime as BITs are more likely to result in human rights violations in non-democratic countries. Because Ethiopian BITs have not yet envisaged provisions for environmental protection out of fright that investors would not be enticed inward flows.

Therefore, this article draws consideration to the unintended externalities of concluding Ethiopian BITs. Investment treaties have been drafted to facilitate cross-border capital flows and promote development through foreign investment. Yet, this article brings strong evidence that ratifying BITs tends to worsen the environment protection, labor rights and anti-corruption practices of Ethiopia. My analysis back the recent move to incorporate the environment protection, labor rights and anti-corruption standards in the content of Ethiopian BITs, either by explicitly referencing environmental and labor rights or by encompassing related provisions with regards to labor standards or environmental protection.



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SOLID WASTE MANAGEMENT IN THIRUVANANTHAPURAM CITY

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Introduction

Sustainable development can only be achieved if society in general and industry in particular, produces more with less waste i.e, more goods and services with less use of the world's resources less pollution and waste. Solid waste management is so essential to the health, environment and quality of life of the people. Solid waste management (SWM) is a system for handling of all types of garbage.

Urbanization is one of the many crucial challenges being faced by modern society and solid waste management in urban centers is as much as a social problem as a scientific or administrative problem.

The Municipal solid waste increased tremendously with improved life style and social status of the population in Urban Areas. Investigations on Municipal Solid Waste Management in Kerala are quite rare. No such information is available on the status of Thiruvananthapuram city. About 420 Metric tons of municipal solid waste is generated in Thiruvananthapuram city every day. The per capita waste generation is estimated to be 350 g/capita/day.

Each year, tons of trash is generated in the form of packaging, bottles, boxes, cans, grass clippings, furniture, clothing, and more. Significant energy and resources are consumed in the production, transporting and disposal of this waste stream. Take reusable bags to the grocery store to break the plastic bag habit. Select items with limited or no packaging. Use a refillable container for water in place of bottled water.

Think of ways to use packaging materials and ways to reuse items that no longer serve their function. Use cloth napkins and plates instead of paper. Shred or compost untreated wood and leaf wastes into chips and use them as mulch on garden beds to prevent weed growth, retain moisture, regulate soil temperature, and add nutrients back to the soil.

Have a yard sale to find new homes for clothes, toys, appliances, books, and other items. If you are remodeling, donate old cabinets, doors, fixtures and hardware to local charity centers, such as Habitat for Humanity's "Re-Store." Items that you do not want to throw away, but no longer have a use



consider SECCRA's Swap program and the Free cycle Network provide options for participants to give items away, or trade items.

Make it a habit to separate out all items that are recyclable. Raise the cutting height of your lawn mower during the hot summer months to keep grass roots shaded and cooler. This reduces weed growth, browning, and the need for watering. When you mow, leave grass clippings on your lawn instead of bagging them or use a mulching mower. The clippings will return nutrients to the soil instead of taking up space in landfills. Check with local repair shops to see if they can use your old appliances for spare parts. Use food scraps, yard trimmings, and other organic waste to create a compost pile that can help increase water retention, decrease erosion, and replace chemical fertilizers. Buy recycled-content gardening equipment and tools, such as garden hoses made from old tires, stepping stones made from old glass bottles, or hand tools made with recycled plastic. You can also find composite lumber made from recycled plastic bottles and bags.

Management of Solid Waste

Management of Solid Waste may be defined as the control of generation, storage, collection, transfer and transport, processing and disposal of Solid Wastes based on scientific principles. This includes all technological, financial, institutional, social and legal aspects involved in solving the whole spectrum of issues related with solid waste.

The SWM processes differ depending on factors such as socio-economic status, degree of industrialization, social development (eg. education, literacy, health care, etc) life style and quality of life of location.

The Ministry of environment and forests, Government of India has notified the municipal solid waste (Management and Handling) Rules 2000 in Gazette of India, October 3, 2000 and the modified new Solid Waste Management Rules 2016. These rules shall apply to every municipal authority responsible for collection, segregation, processing and disposal of municipal solid wastes. The rules contain the various parameters, the compliance criteria and the implementation schedule to be followed by municipalities and corporations.

In the Present study extensive literature exists on urban Solid Waste Management. These studies help us to understand the issue and its impacts on the environment and also the society. Since no study has so far exclusively devoted on Thiruvananthapuram the present study highlights the seriousness of the issue. The major objectives of the Study are: study the Socio-Economic conditions of the respondents. Understand the problems of Household Waste (HSW) among



city dwellers. Examine the available methods of collection and transportation of wastes. Suggest ways and means of reducing waste generation and dumped wastes.

Methodology used in this study is both empirical and analytical. For this study both Primary and Secondary Data were collected. Primary data has been collected from the Field and secondary data includes printed documents collected from the Thiruvananthapuram corporation

The field work has been conducted to understand the present status of domestic and commercial solid waste management in Thiruvananthapuram city for a period of four months i.e., from July to October, 2012. For collection of data purposive / convenience sample technique was adopted. The size of the sample is 350.

The Primary data was collected by administering Interview Schedule. Information on the practice of management of Household Solid Waste (HSW) is very important in understanding the total Municipal Solid Waste Management (MSW) scenario. Mainly Household Solid Waste constitute the major component of Municipal Solid Waste (MSW). The Field work was conducted to understand the present status.

The present study is undertaken with an intention of evaluation of the status of solid wastes produced in the city, both qualitatively and quantitatively in terms of their physio-chemical characteristics and to suggest possible abatement measures.

In the present study areas were selected with the aim of covering all wards representing the demography and geography of the country. The major activities included performing field investigations to assess the quantity of MSW generation per day and determining waste composition and characteristics.

The unprecedented increase in population, intensity of human activities and planned developmental activities produce waste in Thiruvananthapuram city. Deposition of huge amount of garbage causes many health problems. The lack of awareness among the people creates the Solid Waste problem. As an employee of the Thiruvananthapuram City Corporation, I felt the problem from my own working experiences. In order to find a solution to the solid waste problem I have selected this study.

Findings

The study findings at present there is no effective Solid Waste Management system Insanitary methods of burning plastics are carcinogenic and causes Cancer Skin Diseases, Trachoma among the public.



The study suggested Decentralized Waste collection, transportation , treatment should be made to eliminate the Solid Waste problem Segregation of wastes at the source itself will help to reduce the quantity of waste from households. Decentralized Waste Management is to be implemented. Detailed planning at ward level by formation of ward Committees and public awareness programmes are essential. Making valuable items like rescue jackets and handicrafts etc. Converting Bio-degradable Waste in to manure. Use of appropriate waste management methods Like Biogas plants will help to produce methane in house holds produce electricity in market areas, commercial areas and street Enhancing the use of paper or cloth bags instead of plastic carry bags encouraged among the public.

Conclusion

The present study bring to light many facts related to the present status of Municipal Solid Waste Management, Household Solid Waste, Open dumping and related environmental and social problems, health hazards of sanitary workers, sweepers and kudumbasree members (Women belongs to economically backward families) helping door to door waste collections. The data procured on these aspects are useful in implementing better waste management strategies in the corporation.

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ASSESSING FACTORS THAT HINDERING STUDENTS' ACHIEVEMENT IN HEALTH & PHYSICAL EDUCATION: THE CASE STUDY OF HORO GUDURU WOLLEGA ZONE

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Abstract

The purpose of this study was to assess factors that hindering students' achievement in health & physical education, the case of Horo Guduru Wollega Zone. To address the problem, four basic questions were raised to be answered based on the data collected from sample respondents. A cross sectional survey design was used so as to get the general picture of the current state of student achievement in the study area. The study used cross-sectional survey design. To collect relevant data on the topic, the study was carried out in four government secondary schools of Horo Guduru Wollega Zone, which were selected through cluster and lottery sampling techniques. The data were collected from preparatory school teachers (n=30), school principals (n=4), secondary school supervisors (n=4) and students (n=81). The data were gathered through questionnaires and interview. Both qualitative and quantitative data was gathered from students, teachers, principals and supervisors. Data was presented, analyzed and interpretation was made and major findings were identified. From the findings conclusion and recommendations was made. The result of the study showed that academic achievement is becoming more serious and it have more advantages on students' learning ability in particular and as world in general. It is concluded that unless all stakeholders take appropriate measure and give necessary contribution towards maximizing students' achievement, the expected objective of students' learning outcome will not be achieved. It was recommended that since educational activity is being seriously be affected by academic cheating as it is becoming habit in the face of students, teachers, parents and even the larger community, the educational leaders at all levels ought to formulate principles, rules and regulations as to how to prepare, administer and correct assessments. Moreover, schools should establish classroom code of conduct and honor that places appropriate responsibilities and obligations on teachers and students. Moreover, a lot has to be done in building students' confidence in cooperation with parents and the school community at large.

Key Words: Academic achievement, Perception, Challenge



1. INTRODUCTION

1.1. Background of the Study

Education is a cornerstone of economic and social development. It has become an indispensable key to personal and social improvement. It affects how well individuals, communities, nations, and the welfare can provide opportunities for all starting from basic education; UNESCO (cited in Firdisa, 2002). It was stated in a Human Rights-Based Approach to Education by UNESCO (2007) that the provisions on the right to a quality education values appear as the UNISCO's Convention against Discrimination in Education in 1960. Nevertheless, the United Nations Millennium Declaration's commitment (2000) to achieve UPE by 2015 was directly and simply placing the emphasis upon assuring access for all, mainly focused on the quantitative aspects of education policy rather than quality.

In an educational institution, the students are the main character in the plot, without them, the school, the teachers, and facilities will be worthless. The topmost priority of educators is the quality of students' achievement in academic standards. Students' motivation to participate in physical activity on a regular basis has become an important concern of a physical educator. Previous experiences of students in their PE class may also result in their perception towards the activity (Mackenzie, B. (2004)).

Educators and researchers have been exploring factors that contribute to effectively address performance of learners. Many factors can affect student's quality of academic achievement may it be inside or outside the school premises. These factors may be termed as student factors family factors, school factors and peer factors (Crosnoe, Johnson & Elder, 2004). Besides other factors, socio-economic status is one of the most researched and debated factors that contribute towards the academic performance of students. The most prevalent argument is that the socioeconomic status of learners affects the quality of their academic performance. Most of the experts argue that the low socioeconomic status has a negative effect on the academic performance students because the basic need of students remain unfulfilled and hence they do not perform better academically (Adams, 1996). The study will contribute towards unraveling the significant determinants of students' achievement that need to be addressed. This will also serve as a guide for future physical educators and practitioners for the improvement in the quality of physical education program.

Sports involve basic human skills being developed and exercised for their own sake, in parallel with being exercised for their usefulness. It depicts social changes that human race have undergone through, by observing the variation of the rules over time. It is predictably in Greece that sports were first instituted



formally, with the first Olympic Games recorded in 776 BC in Olympia, where they were celebrated until 393 AD. High profile athletes were major celebrities in ancient Greece.

In the middle ages, among some European states, the entire villages held competition against each other in rough and sometimes very violent ballgames. A few that appeared less violent were reserved for the aristocrats. The aristocracy throughout Europe favoured sports as patrons as well as players Horse racing, in particular was a favourite of the upper class in Great Britain Team sport as known today, is considered to be primarily an invention of the western Culture, (Steve Webmaster, 2012). The traditional team sports are seen to have sprung from Europe European colonialism helped spread particular games around the world despite a number of the original versions having had their origins elsewhere the originally European- dominated modern Olympic Games generally ensured standardization of various sporting events in European directions when rules for similar games elsewhere were merged.

The Industrial revolution and mass production of goods availed more free time for workers that brought increased leisure which allowed more time to engage in playing or observing spectator sports. There was also improved accessibility of sports of many kinds, and less elitism in sports. With the advent of mass media and improved global communication, professionalism in sports has fast become prevalent and has furthered sports popularity in general.

Theodore Roosevelt, One of the former presidents of the United States of America, captured the statement;-

The credit belongs to the man who is actually in the arena; whose face is marred by dust, sweat and blood, who strives valiantly; who errs and comes short again and again; who knows the great enthusiasms, the great devotions and spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement; and at the worst, if he fails at least fails while daring greatly, (Pagliuca, S.G. 2009). This statement depicts true sportsmanship or else true and real life experiences. The patience, perseverance, passion, positive attitude and daring dreams that are ingredients for success in life generally applies in sports in particular too and remain invaluable in facing the challenges to come in the future.

For many, success in sports, just like in life is winning. Winning is considered to be the ultimate goal. In sports, it is winning a game, a medal, a trophy or a championship However; real success is a lot more than just winning the glittery and glory of the occasion. Success is peace of mind, which is a direct result of self-satisfaction in knowing you did your best to become the best, that you are capable of becoming, (Wooden, J 2009). An individual coach, trainer or just a teacher in a position to motivate and inspire his/her students to this level may



achieve a lot with his/her students. Winning and losing are just but a by-product of finding peace of mind in knowing you are the best. Training of the instructors is important and plays a major role in modelling the youth into perfect and winning sportsmen/women.

1.2. Statement of the Problem

Physical education is an integral part of the total education of every child in Kindergarten through higher education. Quality physical education programs are needed to increase the physical competence, health-related fitness, self-responsibility and enjoyment of physical activity for all students so that they can be physically active for a lifetime. Physical education programs can only provide these benefits if they are well planned and well-implemented. Improved Physical Fitness improves children's muscular strength, flexibility, muscular endurance, body composition and cardiovascular endurance. Skill development develops motor skills, which allow for safe, successful and satisfying participation in physical activities. However, an achievement of students in physical education is very poor and by this performance they cannot achieve the goal of education and they cannot be effective in their result. Therefore, this paper is to correlate some factors hindering students' achievement in physical education at I/A/B. zone Secondary School. Continuous assessment is very crucial for students' achievement. But in most of high schools that are found in this zone not apply that. The success of implementing continuous assessment programmed could lead to improved standard of teaching learning in our schools. For the plan to be successful the problems standing on the way to its effective implementation must first be identified and then eliminate.

The challenge of implementing continuous assessment to be the most effective and an operational linkage between curricular goals, instructional methods and the assessment process. But there are some problems that may be obstacles to effectively applying this challenge of implementing continuous assessment method in schools.

The process of continuously assessing students' performance and progressing learning level is hard and difficult task. Teachers have to continuously try to identify whether their students have mastered the required skills for the respected course. The teachers use the information gained through assessment to decide whether to provide an extra help for students assessed as under qualified based on the criteria and can also be used for evaluating the educational methods used. Physical Education helps students to identify physical activities and sports suited to their abilities and interests and provide each student with positive experiences, with a view toward developing a positive self-concept and feeling of self-worth



(Bucher and Wuest, 1987). Physical Education (P.E) may also help students to correct physical conditions that can be improved through exercise, especially among children and adolescents, in particular those with special needs, (Brisbane, H E. 2000). It assists an individual student to achieve the highest level of physical fitness within his/her limitations. It also helps the adults especially the elderly to maintain a healthy, physical figure and shape, which supports easy, and comfortable movement for an individual at older age and therefore slows down the negative effects of aging Like all subjects, Physical Education including sports and games programs have standardized curriculum that is used in the country at Primary, Secondary schools, and Teachers training college levels. It is allocated a fixed number of lessons per week at each of the different levels. Unfortunately, the subject has been plagued with a negative attitude from teachers and administrators, as it is not examined at national levels, (Onyango, J. 2004). Consequently, the lessons allocated for physical Education are often used to teach other subjects that are examined.

1.3. Objectives of the Study

1.3.1.General Objective

The overall purpose of the study is to investigate and indicate the solution about the prevalence of **Assessing Factors that Hindering Students' Achievement in Health & Physical Education, the Case of Horo Guduru Wollega Zone.**

1.3.2.Specific Objectives

The study seeks to:

- To evaluate students' personal factors that affect student performance in physical education.
- To determine the teachers' factors that affect students' achievement in physical education.
- To define barriers inside the school that affecting achievement of students in physical education.
- Investigate the attitude of trainers and school administration towards the continuous assessment in physical education class.

2. Research Design and Methodology

2.1. Research Design

This study was designed generally as a descriptive survey study. A descriptive survey is concerned with establishing "what is?". There are many variations of descriptive studies. The particular one selected for this study was the ex-post facto (cross-sectional) design. According to Kerlinger, (2004), ex-post facto design involves a systematic empirical enquiry in which the researcher does not have direct control of events (independent variables) because their manifestations have already occurred, or because they are inherently not manipulated. This method was chosen because it is not the intention of the researcher to manipulate variables of this study such as sex, academic qualification, administrative



experience, state and nature of sports equipment and facilities already in use in the schools under study. It was originally the intentions of the researcher to conduct a census, but this changed when it become clear that time would not allow. It was the hope of the researcher that the data collected will be adequate for fair inferences to be made. An ex-post facto or causal comparative study is aimed at the discovery of possible causes for the phenomena studied by comparing respondents in whom a characteristic is present with similar respondents in whom it is absent or present to a lesser degree Inferences about relations among variables have been made without direct intervention from concomitant variation of independent and dependent variables (Kerlinger, 2004). this study.

2.2. Research Method

The research questions raised for undertaking this study requires both numerical and non-numerical data. To this effect, the researchers applied both qualitative and quantitative data gathering methods with the assumption that the quantitative data collected through questionnaire supplemented by the qualitative data gathered through interview.

2.3. Sources of Data

The study used primary data sources to obtain reliable information on the practices of academic performance in assuring education quality in the secondary school of Horo Guduru Wollega zone in western Oromia regional state. The primary sources of data were obtained from students, teachers and school principals through questionnaires and interview.

2.4. The Study Population

A study population is the entire group of people to which the researchers intended the results of a study to apply (Aron & Coups, 2008). Therefore, the populations of the study were 30 secondary school teachers, 4 secondary school supervisors, 4 principals and 81 students' of Horo Guduru Wollega zone. Generally, the total study population was 119 populations.

2.5. Sample and Sampling Technique

To obtain the necessary sample units, the researcher used both probability and non-probability sampling techniques. Accordingly, the data collected from Horo Guduru Wollega Zone secondary schools the academic year of 2017/2018, the zone has 12 woredas comprising of 4 secondary schools. To take the sample population from the selected zone the researcher used cluster-sampling technique. Totally, from the above selected four secondary schools one (1) or (25%) secondary schools became the sample of the study through simple random sampling method. From the four (4) selected secondary schools, 8 teachers and 20 students were the sample of the study through quota sampling; whereas four (4) supervisors and four (4) principals/vice principals were selected purposely.



Generally, 36 sample population or respondents became the sample of the study from the total of 119 populations by using Cohen, Manion and Morrison (2007) sample size determination table having the confidence interval of 95%. The overall summary of the sample and sampling techniques applied in the study is presented in table 2 as follows.

No.	Respondents	Sampled respondent	Method of sampling
1	Zone	1	Purposive sampling
2	Woredas	4	Simple random/lottery method
3	Schools	4	Lottery method
4	Teachers	8	Quota sampling
5	Students	20	Lottery method
6	Principals/deputy principals	4	Purposive sampling
7	Supervisors	4	Purposive sampling
	Total Respondents	36	

2.6. Instruments of Data Collection

The researchers applied close and open-ended questionnaire and structured interview in order to gather the necessary data for the study. Therefore, these tools are suitable to address **Assessing Factors that Hindering Students' Achievement in Health & Physical Education, the Case of Horo Guduru Wollega Zone.**

2.7. Method of Data Analysis

The study applied both quantitative and qualitative methods of data analysis. In the quantitative analysis, the researcher used both descriptive and inferential statistics so that the scores of each item organized, compiled and entered in to SPSS version 24 to obtain the mean value, *p*-value, percentages and standard deviation of each item. The data collected from teachers and students using close-ended questionnaires (the quantitative one), processed and analyzed using statistical tools. The qualitative data was tallied, organized and tabulated to make the data analysis manageable.

The data gathered through open-ended questions and interviews were analyzed qualitatively through thematic analysis in the form of texts and quotes. These data was processed through three concurrent flows of activity of the qualitative analysis system, which include data reduction, data display and conclusion drawing or verification (Huberman & Miles, 1992). Moreover, Reliability and Validity of the Instruments were checked by preparing the questions in



sequential, clear, properly worded and unambiguous manner to have the same meaning for all respondents and measures what it supposed to measure using careful and appropriate questionnaire administration and scoring system by avoiding researchers' bias. In addition, the researchers conducted a pilot test before administering the formal questionnaire and measured the reliability of the instruments using Cranach alpha test to check the consistency and accuracy of the measurement scales to use in our context and found that satisfactory having the alpha level of 0.83, 0.84 and 0.76 respectively.

3. Presentation Analysis and Interpretation of Data

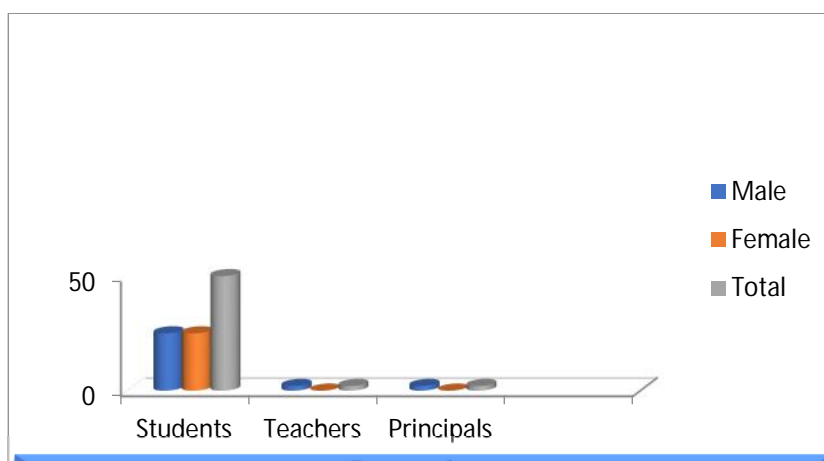
Assessing Factors that Hindering Students' Achievement in Health & Physical Education In order to Assess factors that hindering students' achievement in health & physical education, the Case of Horo Guduru Wollega Zone.

Background of respondents

Statistics of respondents

Sex	Students	Principals	supervisors	Teachers	Total
Male	12	4	4	6	26
Female	8	-	-	2	10
Total	20	4	4	8	36

As it can be seen from this table from grade 9th section 'A-E' students the researcher selected 26 males and 10 female students. Both school principals are male and also both sport teachers are male. Hence totally 36 respondents were selected for population of the study. Graphically it can be illustrated as follows

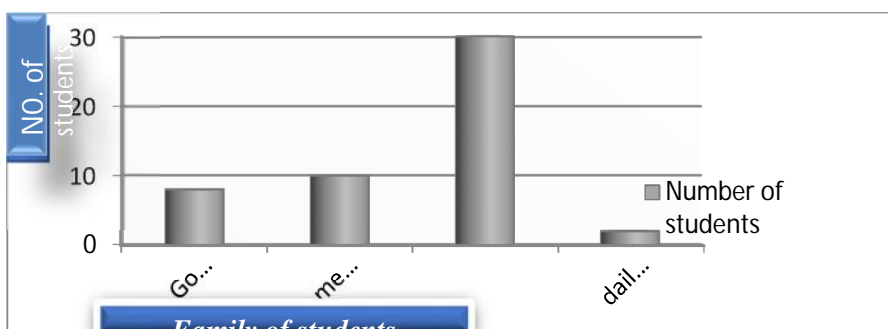




Occupation of student's family

No	Family occupation	Number of students	%
1	Government employee	3	15%
2	Merchants	4	20%
3	Farmers	10	50%
4	Daily employed	3	15%
Total		20	100

This population can be represented on the following chart.



The above table shows that 50% of students' families are farmers, 15% are government employees and 15% are daily employed and 20% of the family of respondents was merchants. This family occupation shows that most of the students' family is farmers.

Educational status of students' family

No	Educational status	Number of students whose this educational status concerns their family			
		Their Mother	%	Their Father	%
1	Complete	3	15%	4	20%
2	Grade 8 above	6	30%	7	35%
3	Grade 2-8	3	15%	3	15%
4	Illiterate	5	25%	2	10%
5	Functionally illiterate	3	15%	4	20%

As it can be seen from this table this table most of students' family are not educated. I.e. around 15% are complete, about 30% of students' families are



grade 8 above. Most percent of families are below grade 8. This shows that most of students' family cannot critically decide the futurity of their children and they cannot encourage their children as they improve their learning skill. The data obtained from interview with students also indicates only little number of families encourages their pupil to learn as well. From this data we can predict that educational status of the students' parent is one factor affect performance of students.

Class room observation results

To conduct this study the researcher decided to observe what problems are there in the class during teaching and learning period in grade students at Horo Guduru Wollega selected Schools. There were so many problems such as low achievements of students, poor listening, lack of participation during physical education period and disturbing the class during teaching and learning time were the problems. Among these problems poor performance in physical education was the main critical problem of the students. This enforced the researcher to select the title which says "assessing factor affecting students achievement in physical education, the case of grade 9 section 'A-E' students at School" and researcher conducted his research up on it.

Result obtained from students' Questionnaires

Aptitude of students

No	Aptitude of students regarding physical education	Response of students			
		Yes	%	No	%
1	I do not do the skill, if I feel I cannot.	16	80%	4	20%
2	I am as good as anyone else.	4	20%	16	80%
3	I can do all the skills with given time to practice and was able to execute a skill very well	6	30%	14	70%
4	My learning performance is affected by my state of mind.	12	60%	8	20%

As shown in Table 5, the students' aptitude level shows that the statement "I do not do the skill, if I feel I cannot" had the highest percent. This only shows that students are not confident with their aptitude skill during their physical Education class. Aptitude test can be used a substitute for intelligence tests (Lyman, 1998). In fact, intelligence tests or IQ tests are measures of general aptitude: scores on these test represents a composite of cognitive abilities and can be used to forecast achievement and other behavior in a wide range of situation. The importance physical education aptitude is basic among institution; they are using this sporting aptitude as a part of admission process.



In other way most of the students (80%) agree that their learning performance is affected by their state of mind. That means they themselves did not focus on physical education and one of the case of their failure were their state of mind. This indicates teachers and school principals must act on attitude change of students.

Perception of students on teacher's characteristics

No	Teachers characteristics	Yes		No	
		Quantity	%	Quantity	%
1	Teacher maintains classroom atmosphere conducive to learning and utilizes time effectively.	15	75%	5	25%
2	Teacher answers questions knowingly and Convincingly showing high credibility.	17	85%	3	15%
3	My teacher speaks fluently the language and express facts and ideas in a clear and effective manner.	18	90%	2	10%
4	Teacher states clearly the objectives of the lesson and gives lecture without reading notes/book	16	80%	4	20%
5	My teacher wears proper attire and is well groomed.	14	70%	6	30%
6	Our teacher has high ability of physical exercises and he/she tell us all important sport rules.	16	80%	4	20%

This table indicates Teacher maintains classroom atmosphere conducive to learning and utilizes time effectively. Teacher answers questions knowingly and convincingly showing high credibility. Their teacher speaks fluently the language and express facts and ideas in a clear and effective manner. Also their teacher states clearly the objectives of the lesson and gives lecture without reading notes/book, wears proper attire and is well groomed, has high ability of physical exercises and he/she tell us all important sport rules.

Thus one can conclude from the above table in case of IAB High School teachers characteristics has no great impact on low achievement of students in physical education.



Students attitudes towards physical Education

No	Questionnaire	Response			
		Yes	%	No	%
1	Our students do not think Physical Education as crucial subject and they are careless on this subject	17	85%	3	15%

The above table shows most of the students have wrong attitude towards Physical Education. They think as Physical Education is not important for them. For this reason they can't develop their performance in Physical Education. Therefore we can conclude that attitude of students towards Physical Education is one of the factor that affecting their achievement in Physical Education.

Students opinion regarding lack of guidance and counseling

No	Questionnaire	Response					
		Usually	%	Sometimes	%	Never	%
1	Does your Physical Education teacher advice you as you practice and read Physical Education at home and school?	-	-	4	20%	16	80%
2	Does your Physical Education teacher tell you the importance of Physical exercises for health, to have good posture, to have good social interaction and etc.?	-	-	-	-	20	100%

From this table we see that most of the students agreed that the teacher does not frequently guide the students as they focus to Physical Education by telling them the importance of Physical Education. Thus lack of guidance and counseling has its own effect on poor performance of grade 9th students in Physical Education.

Students' response regarding barriers inside school

No	Barriers inside school	Opinion of respondents			
		Yes		No	
		Quantity	%	Quantity	%
1	Lack of facilities	16	80	4	20
2	Difficulty engaging students	8	40	12	60
3	Students have low level of interest in physical education	18	90	2	10



4	Physical education is not priorities in the School	17	85	3	15
5	In our school we Focus on too many traditional sports	19	95	1	15
6	Past negative experiences with physical education	20	100	0	0
7	Large class sizes	5	25	15	75
8	The school environment does not encourage physical exercise	5	25	15	75
9	Staff use outdated teaching methods	17	85	3	15
10	Physical education/Sport staff provide limited activity time	10	50	10	50
11	Lack of sport equipments	16	80	4	20

The above table indicates there are many barriers inside school that are affecting students' performance on physical education. Specially: Past negative experiences with physical education, Staff use outdated teaching methods, Lack of sport equipments, Lack of facilities, Students' low level of interest in physical education, Focusing on too many traditional sports and limited activity time were the most influential barriers inside the school those highly affected the achievement of students in physical education in Fincha High school in the case of grade 9th students. Similarly Physical education is not priorities in the School.

4. Conclusion

To assess the **Factors that Hindering Students' Achievement in Health & Physical Education the Case of Horo Guduru Wollega Zone**, the current study raised four main research questions on the AC techniques, the perceived differences of across schools and Zone, the role of school bodies in controlling academic cheating and factors that contributed to Achievement in the secondary schools of Horo Guduru Wollega Zone. Based on the major findings of the study, the following conclusions were drawn. This publications provides evidence that in physical education, which operates outside the classroom, barriers are largely institutional. Some of these barriers can be planned for and overcome, but others require considerable negotiation, lobbying and strong leadership: in particular, to gain access to and funding facilities, teaching spaces and curriculum positioning. It is evident that many barriers to providing quality physical education programs have not changed over time: they have merely evolved and become more complex in their own context, in the zone of secondary school settings. A focus on addressing school barriers alone is no longer possible, particularly as teachers



report that students are increasingly responsible for their own educational and physical activity choices and, consequently, their participation or non-participation in physical education. Over abundance of influences in the school environment now vie for each student's time, attention and participation. The role to which physical educators should aspire involves developing creative, well-planned, engaging and responsibility-focused lessons and the confidence and ability to do so is recognized by teachers as a challenging barrier to their own teaching. The achievement of students was mainly influenced by barriers inside the school such as:

- ✚ Lack of facilities,
- ✚ low level interest of students in learning physical education,
- ✚ Focusing too many on traditional sports and
- ✚ Past negative experiences with physical education

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ATTITUDE TOWARDS DEATH AMONGST OLDER PEOPLE: A LITERATURE REVIEW

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Abstract

Death is thought of and taken as complete dysfunctionality of the body. This objective perspective keeps our fear of death at bay. Though, as the age hits and one crosses sixty, one does come face to face with the fear of death and ceasing to be. This fear is then channelized across many parameters of rationalization. Three main factors along which a person channelizes this fear are: Cognitive; Affective/Emotional; Spiritual/Religious.

The situations and circumstances of a person considerably affect the way one reacts to the inevitable. For Example, people staying with their family may react differently to death than people staying in the old age homes. Similarly, gender disparity also changes the reactions of older people towards dying. Extensive research has been done in the field of death and dying. Studies of literature in almost every field of mainstream psychology reflect on the topic of 'death'.

Pollack (1980) reviewed empirical studies examining correlates of death anxiety. He found that researchers have used a wide variety of means to study death anxiety. Researchers have used age, gender, and religiosity as variables in looking at differences in death anxiety. He reports that some death anxiety studies reported age, gender and religious difference while some did not. The findings do suggest that death anxiety is a complex construct that interrelates in a variety of ways that are not completely understood with a host of demographic and personality variables.

According to Goodman (1981) "The existential fear of death, the fear of not existing, is the hardest to conquer. Most defensive structures, such as the denial of reality, rationalization, insulation erected to ward off religiously conditioned separation-abandonment fears, do not lend themselves readily as protective barriers against the existential fear of death".

According to Gesser, Wong and Reker (1988) death anxiety/fear of death and age have a curvilinear relationship, with death anxiety peaking during middle age. The hypothesis behind this is that during the middle years of life, time comes to be perceived as "time-left-to live" rather than "time-since birth". Other factors negatively correlated with death anxiety include: self-actualization, sense of competence, self-esteem, meaning and purpose in life and life satisfaction.



Buzzanga, Miller, Perne, Sander & Davis (1989) found that women have been found to score higher on tests of death anxiety than men, although this could be because death anxiety scales measure expressed fear of death, and men may be less apt to express motions such as fear.

Robbins (1989) in her study of gender and death anxiety found that females reported significantly higher death anxiety than did males. Gender made a significant contribution to the prediction of death concerns.

Thorson JA (1990) studies meaning of death and intrinsic RELIGIOSITY. The objective of this study was to simplify understandings of relationships between multidimensional elements of the fear of death and dying with a one-dimensional construct of intrinsic religiosity. A total of 346 individuals who ranged in age from 18 to 88 completed a death anxiety scale and a measure of intrinsic religious motivation. Respondents who were older and who were higher in intrinsic religiosity were significantly lower in death anxiety.

Westman and canter (1990) investigated fear of death and concept of extended self. 287 participants, including 50 nuns, 26 schizophrenics and 42 alcoholics answered a questionnaire with indices on fear of death and self concept. Three hypotheses were confirmed, first, people indicating less fear and more extended self if committed to religious life. The fourth hypothesis, that people would report more fear and a less extended self if diagnosed as mentally or emotionally troubled, was were more likely to describe self as extending to include any other person. Second, people indicating fear more frequently described death as final, unnatural, providing no meaning to life, and cold. Third, people reported less only partially supported, possibly because the troubled persons were more frequently reported being confused about self.

James A. Thorson (1991) studied the relationship between afterlife constructs, death anxiety, and life reviewing: The importance of religiosity as a moderating variable. A diverse sample (n=389) completed a death anxiety scale and a series of questions dealing with frequency of church attendance, self-rating of religiosity, and after life concerns. Variance in both death anxiety and religiosity was greater between age group than across gender. He also found that after life, items tended to have higher correlations with death anxiety than did either self-rated religiosity or frequency of church going. It is suggested that elements of religiosity have important interrelationships with the development process of life review in old age.

Ross and Pollio (1991) studied meanings death holds for people. 26 well educated participants were given Knapp metaphor inventory and were asked to discuss the metaphors they chose as most closely reflecting their use of death. The results of hermeneutic analysis of these discussions yielded three independent themes: death viewed negatively barrier to life's meanings death viewed ambivalently as an essentially negative condition made acceptable by a



variety of mitigating factors, and death viewed positively as reinstatement or transformation of life's meaning. A further analysis evaluating the influence of religiosity on the meaning of death revealed that participants from church groups viewed death significantly more frequently as a transformation of life's meaning than did non-church participants who viewed it significantly more frequently as a barrier to life's meanings.

George E. Dickinson (1992) studied first childhood experiences. He suggested that child's first experience with death may be met with variety of responses. The objective of this research was to determine what adults remember about these early death experiences. Students in college, death-and-dying classes were asked to write an essay about their first death experience. The average age of the respondents (N=440) was 23.79 years, and their average age at the time of their first death experience was 7.95 years. Content analysis was used to analyze the essays. Over half of all first experiences with death involved relatives, 28% involved pets. Children's responses to death showed motions similar to those expressed by adults.

Over 1/3rd mentioned that crying occurred. Many respondents remembered details of the funeral some 16 years later. Adults need to be sensitive to the needs of children when a significant other or pet dies. It is clear that childhood experiences flavored with death, loss, or separation can become important influences on the way one sees life and copes with death.

Siscoe (1992) explored the possible differences between death depression and death anxiety. 182 people were assessed by administering Templer's death anxiety scale, and Templer's death depression scale both female gender and older age were more highly associated with greater death anxiety than the greater death depression. Living without a significant other was associated with greater death depression than death anxiety.

Alvarado (1995) explored the relationship of religious variables and death depression, death anxiety in adults from the general population. All subjects were administered the templer death anxiety scale, and a death depression scale, and a religious inventory. Subjects with lower death depression, death anxiety and death distress have a greater strength of conviction and greater beliefs in life after death.

Mikulincer and Florin (1995) assessed how negative life events and coping responses affect diverse aspects of fear of personal death among middle-aged men who are in the process of job retirement. Subjects reported life events during the last 3 years by taking 43 items life event scale (Serason, 1985) And coping responses they used for dealing with job retirement by taking 44 items coping checklist (Soloman, 1988) and completed 31 item personal death scale (Flori and Kravet). The findings indicated the accumulation of negative life events was related to high levels of fear of personal death. However, coping



strategies mediated this relationship. Emotion focused coping with early job retirement seem to be a direct precursor of fear of personal death and to underlie the effects of negative life events.

Thomas (1995) interviewed elderly men and women in England to examine their beliefs and feelings about death. Men tended to picture death in spatial terms of moving into new dimensions, while women tended to describe death in terms of relationships. Overall, subjects indicated that they placed a positive value on death, viewing it as a continuation of, and a source of meaning for, their present life.

Florian and Green (1995) examine the association of fear of personal death and aspect of psychological maladjustment and the moderating impact of personal losses. Ninety-seven middle aged Israeli males completed MMPI, a brief scale on personal loss experiences, and the fear of personal death scale. Results reveal that MMPI profile was significantly related to the pattern of fear of personal death. This association, however, only reached significance among middle-aged men who had not experienced personal losses. In addition respondents who had experienced personal losses reported higher levels of fear of personal death than respondents who had not experienced any personal loss.

Rasmussen CA, Brems C. (1996) studied the relationship of death anxiety with age and psychological maturity. For this study, 194 respondents completed a biographical data sheet, the Templer (1970) Death Anxiety Scale and the Constantinople (1973) Inventory of Psychosocial Development to help assess the relationship among death anxiety, age, and psychosocial maturity. Findings showed that psychosocial maturity was a better predictor of death anxiety than age was. However, both variables were significantly negatively correlated with death anxiety, revealing that as psychosocial maturity and age increase, death anxiety decreases.

Servaty (1996) reported higher levels of empathy scores for females, and higher levels of empathy were associated with higher levels of death anxiety.

Victoria T. Coffman (1996) suggested that theatre activities can be used as a helpful approach to initiate more complex reflections about death among university students as well as hospice volunteers. With the help of an activity description and accompanying text from a death contemplation exercise, which support this advocacy, performance skills activity produced serious student responses, which were varied, articulate, and rich. Imagining and rehearsing death allows people to “act as if” and fantasise the circumstances surrounding one’s death in a relatively safe manner. These presentations can make the performance of life more meaningful, and the drama of death perhaps softer and more acceptable.

Waskel (1996) administered the death concern scale and the keirseay temperament sorter to examine the subjects’ intensity of and their ability to



identify mid life crises event. Subjects were classified with in temperament types ESTJ (Extrovert, Sensing, Thinking, Judging), ESFJ (Extrovert, Senses, Feeling, Judging), ISFJ (Introvert, Sensing, Feeling, Judging), ENFP (Extrovert, Intuitive, Feeling, Perceiving) significantly correlated with thinking about anxiety and about death. Gender education level, as well as crises intensity, also correlated significantly with death concerns.

Fehring, Miller and Shaw (1997) reported that high levels of intrinsic religiosity and spiritual well being was related to lower levels of negative attitudes, as compared with persons low intrinsic religiosity and spiritual well-being.

Illene C. Noppe (1997) studied the relationships among death conceptions, death experiences, patterns of parents and peer attachment, and risk taking behaviours in adolescents in an effort to construct a revised notion of the meaning of death at different points in adolescent development. Students (N=95) from middle schools, a high school and a university were assessed with the inventory of parents and peer attachment, a 10-item open-ended death conception questionnaire, and a demographic and death attitude survey. Results indicated that death experiences, discussions about death, belief in non-corporeal continuation (some form of life or energy after physical death), and parent attachments appear to increase during the course of adolescence. Parent attachment was found to be inversely associated with death experiences, conversations about death and risk taking behavior.

Fraley (1998) examined the role of variety of beliefs in management of death anxiety. It is generally believed that human beings adopt beliefs which have cushioning or comforting effects on human mind with regard to questions on death and dying; beliefs in god, belief in life after death, beliefs in justice, and perceived control belief.

Ming-lin, Alice Chong; Lang, Graeme S. (1998) studied the attitudes of some Chinese elderly people with different religious beliefs toward death and dying, drawing on interview data from 10 adults, ages 65+, in Hong Kong. Religious belief was found to have little impact on death anxiety. Chinese elderly people mainly fear the dying process and becoming an unwanted burden to caregivers. However, they are more willing to talk about and prepare for death than is generally recognized.

Jonathan w.Evans (1999) explored temporal and self/ other dimensions of death attitudes among young adults. 172 undergraduate students were randomly assigned to 1 of 4 conditions: writing about one's death (age unspecified), or the death of other as a young adult. Results indicated that the death of another, but not of oneself, was associated with more realistic considerations of death (e.g., pain, negative emotions). In addition, participants who wrote about death at an early age were less likely to describe their own



deaths with negative emotions or to discuss physiological aspect of death and were less likely to express romanticized notions of death.

Victor G. Cicirelli (2000) studied the factors influencing fear of death in old age, using a hypothesis path model. Participants were 123 African American and 265 white elders aged 60 to 100, they were assessed on specific fears of death, religiosity, and externality, perceived social support, socio-economic status, age, ethnicity and gender. Externality, religiosity, had direct effects on fear of unknown, whereas remaining variables has indirect effect. Externality, religiosity, ethnicity, age and gender all had direct effects on fear with the background factors also having indirect effects.

Cicirelli V G (2001) Studied personal meanings of death in older adults and young adults in relation to their fears of death. Groups of 78 young adults (aged 19-29) and 68 older adults (aged 70-97) were compared on the Personal Meanings of Death (Extinction, After-life, Motivator, Legacy) and on 4 Multidimensional Fear of Death (MFODS) subscales. Analysis of variance indicated that the young scored higher ($p < .05$) than older adults on death as Motivator and on 3 MFODS subscales. Women scored higher than men on Motivator and fear of the dying process, but men had greater fear of the unknown. Death meanings After-life and Extinction were most strongly correlated with fear of death for both young and old. Further analysis revealed the age differences within the older adult groups.

Scocco P et.al (2001) studied death anxiety and its correlates. The aim of this study was to assess, in an elderly community-dwelling population: a) the prevalence of death and /of suicidal feelings and thoughts and any attempted suicides; and b) factors associated with these experiences. A total of 611 over - 65-year-old subjects were interviewed at home. Seventeen percent of the total (F: M= almost 2:1) responded affirmatively to at least one of the questions on suicidality. Elderly people reporting suicidal feelings presented markedly higher levels of physical and psychological distress, such as depression, anxiety, and hostility. Results indirectly confirm that depressive symptomatology is not adequately treated. Greater attention is warranted in psychological evaluation of the elderly to take into account those risk factors that, if identified and managed, could reduce the frequency of suicidal thoughts and, probably, associated actions.

C. J. Lennings (2002) concluded that in contrast to younger groups research with the elderly suggest a predominantly present focused temporal orientations. One aspect of statisfaction, optimism is conceptualized as a form of future perspective. Health psychology generally asserts that health-enhancing messages depend for effect on a person perceiving future benefits to action taken in present to enhance health and minimize ill health risk. The extent to which the elderly perceive or value the future should impact on health maintenance



behaviors. In a study of 86 elderly people the dominant ways of viewing time coalesced around a variety of present time perspective. Within group differences revealed that as people aged they became less satisfied with life relative to their level of optimism. The decrease in satisfaction is most probably related to sense of realism about the tasks of ageing than sense of death anxiety or avoidance of future. He found out that as people age, temporal variable become less important as a predictor of satisfaction. Tool used in this study included the optimism, life satisfaction scale and the stand fall time perspective inventory-revised.

Suhail K, Akram S. (2002) investigated the correlates of death anxiety in Pakistan. To ascertain the effect of gender, age, and religiosity on death anxiety, 132 participants were interviewed using Templer Death Anxiety Scale and Collett-Lester Fear of Death Scale (CLS). Women, older participants and less religious participants were found to be more scared of their impending death. Gender effect was more pronounced, however, on the CLS. Women and less religious people reported to experience greater anxiety than their respective counterparts about different dimension of death, for example, the shortness of life, total isolation of death, fear of not being, and disintegration of body after dying. The findings of the current work indicate that the general predictors of death anxiety, gender, age, and religiosity reported in Western, predominantly Christian samples also hold in an Eastern, Muslim sample.

Wu AM (2002) examined the cognitive and emotional reactions of Chinese elderly people toward death, to extend the use of a Western scale on death anxiety to a Chinese sample, and to explore the correlates of death anxiety. Methods; a community sample of 237 Chinese elderly people (62 men and 175 women) in Hong Kong between the ages of 60 and 91 years old was individually interviewed. Results; among this elderly cohort, a high level of death anxiety was associated with younger age, a high level of psychological distress, and the presence of recent stressors but was unrelated to number of physical disorders, gender, personal income, marital and employment status, and religious affiliations.

Deapola SJ et.al (2003) investigated the relationship between death anxiety, attitudes toward older adults, and personal anxiety toward one's own aging in a group of 197 older men and women. As predicated, negative attitudes towards other older adults were predicted by personal anxieties about aging and death, and, more specifically, fear of the unknown. In addition, several distinctive anxieties were noted for particular subgroups of respondents. Older women scored higher on the Fear of the Dead subscale of the Multidimensional Fear of Death Scale (MFODS) than did men. Caucasian participants displayed higher Fear of the Dying Process than did older African American participants. Lastly, older African American participants reported higher levels of death anxiety on 3 of the subscales of the Multidimensional Fear of Death Scale (Fear



of the Unknown, Fear of Conscious Death, and Fear for the Body after Death) when compared with older Caucasian participants and also tended to accord less social value to the elderly. These findings are interpreted in terms of patterns of socialization, and their implications for end-of-life care preferences are noted.

Cicirelli VG (2004) examined the attachment to God among older adults. The existence of such an attachment was explored in a study of 109 elders aged 70-97. A modest proportion of elders displayed a strong attachment to God, assessed by coding interview data for indicators of attachment. Strength of attachment to God was related ($9 < .05$) to greater religiosity, greater fear of death, loss of other attachment figures, religious affiliation, and being younger in age, Black, and of lower socioeconomic status.

Abdel-Khalek (2005) studies death anxiety in clinical and non-clinical groups. The Arabic Scale of Death Anxiety (ASDA) was administered, individually, to 7 groups ($N=765$) of Egyptian normal participants (non-clinical), anxiety disorder patients, and patients suffering from schizophrenia (males and females), and addicts (males only). They were generally matched as groups according to age, occupation, and education. The means of female and male anxiety disorder patients were, respectively, significantly higher than the means of the other 5 groups on the ASDA, while male schizophrenics attained the lowest mean score in proportion to all the other 6 groups, non-clinical 2 groups. All female groups have higher scores than their male counterparts.

The studies discussed above help to get a better understanding of attitude towards death in older people. This attitude has also been captured by Benjamin Franklin in following poem:

*Death is a fisherman, the world we see
His fish-pond is, and we the fishes be;
His net some general sickness, howe'er he
Is not so kind as other fishers be;
For if they take one of the smaller fry,
They throw him in again, he shall not die;
But death is sure to kill all he can get,
And all is fish with him that comes to net.*

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RELATIONSHIP BETWEEN TREATMENT, COGNITIVE STYLE AND THEIR INTERACTION ON ACHIEVEMENT IN DIAGNOSTIC TEST OF CELL BIOLOGY

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Abstract

Misconceptions are considered as a big obstacle in the path of the students' life. If misconceptions were not removed in the early stages of a student life it can cause various learning difficulties in future. To promote an effective and meaningful learning there is an urgent need to identify such misconceptions from students' mind and to rectify them or to prevent them from occurring in future. From the various investigations and review studies it is found that students' of different ages possess misconceptions in cell biology. The present study was undertaken to study the effect of treatment, cognitive style and their interaction on achievement in cell biology by considering pre - achievement in cell biology as a covariate. To study all these necessary factors first the students' misconceptions was identified through a Two – Tier Diagnostic test (DTCB). The sample comprised of 118 students' of IX class selected from the secondary schools of Phagwara city. On the basis of pre-achievement test a relation between the above mentioned factors were carried out to find out the correlation between them.

Keywords: Cell biology, Diagnostic test in cell biology (DTCB), Misconceptions, Cognitive style, Raven's Standard progressive matrices (RSPM), Group Embedded Figure Test (GEFT)

INTRODUCTION

Cell biology is one of the most important areas in biology and understanding the structure and functioning of cells is basic to all molecular and genome level biology studies. Cell biology is a branch of biology that studies cells – their physiological properties, their structure, the organelles they contain, interactions with their environment, their life cycle, division, death and cell function. Knowing the components of cells and how cells work is fundamental to all biological sciences. To completely figure out these developments basics of cell biology must be clear to the students and our future citizens. Misconceptions can



come from a variety of factors and unfortunately, these interpretations have been shown to impede learning of fundamental scientific concepts. Misconceptions if not detected immediately, adversely affect the students' subsequent learning. Students hold misconceptions that were developed before and during their early school years. These misconceptions may be compounded by the teacher or the textbook (Bahar, 2003 & Wandersee et al, 1994). Fisher (1985) contends that misconceptions serve the needs of the persons who hold them and that erroneous ideas may come from strong word association, confusion, conflict, or lack of knowledge. Some of the most widely studied misconceptions in cell biology relate to the concepts of cell division and diffusion & osmosis (Odom, 1995; Zuckerman, 1998). While studying conceptual difficulties, Friedler, Amir, & Tamir (1987) found that use of textbook definitions, technical language, and other issues related to use of language and textbooks may contribute to misconceptions. Indeed, some textbooks in the past were found to contain errors and misconceptions (Storey, 1992a, 1992b) relating to cell physiology and energetics. Driver, et al. (1994), a leader in misconception research, had discovered that students often confuse the concepts of molecules and cells. Prior studies have shown that students experience difficulties in learning concepts related to the cell division process (Kindfield, 1994). Reasons for these misconceptions include students' inability to differentiate between doubling (replication), pairing (synapsis), and separating (disjunction), as well as determining whether or not these processes occur in mitosis, meiosis, or both (Smith, 1991). Atilboz (2004) studied the level of understanding and misconceptions of 9th grade students related to mitosis and meiosis. Many students learn science topics as isolated facts and do not construct links between old and new knowledge. As a consequence they find it difficult to understand subsequent topics (Novak 1988). Because new knowledge is constructed on the base of existing cognitive structure, misconceptions have to be removed to prevent new ones developing. Identification of misconceptions is needed to develop strategies that provide students with accurate conceptual knowledge required for scientific problem solving. The instruction should be designed in such a way that it accounts for students' initial conceptions and especially their misconceptions.

AIMS AND OBJECTIVES

The aim and objective of the study was to check the effect of treatment, cognitive style and their interaction on achievement in cell biology test by considering pre – achievement in cell biology test as a covariate.



HYPOTHESIS

The hypothesis of the study was that there is no significant effect of treatment, cognitive style and their interaction on achievement in cell biology by considering pre – achievement in cell biology as covariate.

SAMPLING

The study was conducted on class IX students studying in senior secondary school of Phagwara. Sample was selected by using Cluster Sampling Technique from private senior secondary school. It comprises of about 118 students.

TOOLS USED

To collect the requisite data for the present study the investigators had administered the following tests:

- 1) Construction of the diagnostic test (DTCB) to identify the misconceptions of students.
- 2) Raven's standard progressive matrices is used to assess the intelligence and of students.
- 3) Group Embedded Figure Test (GEFT) developed by Herman A. Witkin, Philip K. Oltman, Evelyn Raskin and Stephen A. Kalp is used to assess the cognitive style of students.

STATISTICS APPLIED

The techniques used for analyzing the collected Data in the study are statistical techniques like means, percentages, t-test, and analysis of co-variance (ANCOVA) etc. The data was presented in tabular form.

DELIMITATIONS OF STUDY

The study was delimited in the following aspects:

- a) The study was delimited to class IX students only.
- b) The sample of the study was confined to 118 students of class IX.
- c) This research was aimed to study the students' misconceptions in cell biology in only limited concepts, which are included in the syllabus of class IX.

ANALYSIS AND INTERPRETATIONS

The first objective of this study was to identify the common misconceptions in the concept of cell biology of class IX students'. To identify these misconceptions a two – tier diagnostic test in cell biology was constructed by the investigators. In this approach two-tiers of multiple choice items with distracters to diagnose students' conceptual understanding of specified content areas in science. The first tier involves a content response and the second tier a reasoning response. The distracters in the items were based on student conceptions that were identified from the research literature as well as from students' responses. Students' overall performance in this diagnostic instrument was obtained by comparing the percentage of students who scored both parts correctly in each two



tier item with the percentage who scored only the first part correctly. The data are summarized in Table below:

Table: Analysis of Students' Responses on DTCTB

Item number	Percentage of students who correctly answered		Item Number	Percentage of students who correctly answered	
	First Tier	Both Tiers		First Tier	Both Tiers
1	32.02	8.47	15	38.98	10.17
2	54.24	37.29	16	31.35	9.32
3	40.69	17.08	17	21.18	5.93
4	39.82	5.08	18	31.77	7.63
5	34.74	25.42	19	26.57	4.39
6	41.52	33.09	20	16.01	3.39
7	24.57	16.95	21	22.89	7.63
8	24.57	14.41	22	14.40	3.39
9	47.45	25.42	23	27.96	5.93
10	26.27	7.63	24	34.75	18.64
11	52.99	41.03	25	19.48	6.78
12	26.27	11.86	26	32.20	2.54
13	22.88	4.24	27	32.20	18.64
14	22.87	5.08			

The range of correct answers for the first tier of the test was 14.40% to 54.24% while for both tiers combined, the number of correct responses was reduced to a range of 2.54% to 41.03%. This means that, on average, 34.32% of the students answered the first-tier questions correctly. However, the mean percentage dropped to 21.78% when both tiers 57 are considered. This means that students may be able to sense "right" or "wrong" in a given situation but unable to give the exact reason. This trend is an indication that students may have memorized certain facts without sufficient understanding of the concepts involved.

The second objective was to study the effect of treatment, cognitive style and their interaction on achievement in cell biology test by considering pre-achievement in cell biology test as a covariate. There were two levels of treatment namely, teaching with Remedial Approach (RA) and Traditional



Method (TM). The students were categorized into two levels of cognitive style namely, above average and below average. Thus there were two levels of cognitive style and two levels of treatment. Therefore the data was analyzed with the help of 2x2 factorial design analysis of covariance. The results are given in the table below:

TABLE: SUMMARY OF 2X2 FACTORIAL DESIGN ANCOVA FOR ACHIEVEMENT IN CELL BIOLOGY TEST BY CONSIDERING PRE-ACHIEVEMENT IN CELL BIOLOGY TEST AS A COVARIATE

Sources of variance	Df	Sum of square	Mean square	F-value
TREATMENT	1	504.123	504.123	138.838**
CSG	1	22.410	22.410	6.172
TREATMENT * CSG	1	2.191	2.191	.604
Error	113	410.303	3.631	
Total	118	37791.000		

**significant at 0.01 level

From table above it can be seen that the adjusted F-value of treatment is 138.838, which is significant at 0.01 level. It indicates that mean scores of achievement in cell biology test of students taught through RA and TM differ significantly, when pre-achievement in cell biology test was taken as a covariate. In this context, the null hypothesis that “There is significant effect of treatment on achievement in cell biology test of class IX students when pre-achievement in cell biology test is considered as a covariate” is rejected.

Further, the adjusted mean scores of achievement in cell biology test of RA group was 19.633, which is significantly higher than that of those, taught through TM whose adjusted mean score was 14.797. It may therefore be concluded that RA group is found to be significantly superior in comparison to TM group when pre-achievement in cell biology test is taken as a covariate.

The adjusted F-value for cognitive style is 6.172, which is not significant. It indicates that adjusted mean scores of achievement in cell biology test of students belonging to above average and below average cognitive style group don’t differ significantly when pre-achievement in cell biology test was taken as a covariate. Thus the null hypothesis that “There is no significant effect of cognitive style on achievement in cell biology test of class IX students when pre-achievement in



cell biology test is taken as a covariate” is not rejected. It may therefore be concluded that achievement in cell biology test was not correlate with cognitive style of students.

The adjusted F-value for interaction between treatment and cognitive style is 0.604, which is not significant. It indicates that there was no significant influence of the resultant of interaction of treatment and cognitive style on achievement in cell biology when pre-achievement in cell biology test was taken as a covariate. In this context, null hypothesis that “There is no significant effect of the interaction between treatment and cognitive style on achievement in cell biology test of class IX students when pre-achievement in cell biology test was taken as a covariate” is not rejected. It may therefore be said that achievement in cell biology test was found to be independent upon the interaction of treatment and cognitive style when pre-achievement in cell biology was taken as a covariate.

CONCLUSION OF THE STUDY

The present study deals with the effect of treatment, cognitive style and their interaction on achievement in cell biology test which shows that treatment and cognitive style is independent of DTCB test. Hence it can be said that the adjusted mean score of achievement in cell biology of control and experimental group differs significantly from each other. Moreover the achievement in cell biology was found to be independent of cognitive style when pre – achievement was taken as a covariate.

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AMBEDKAR'S SOCIAL DIMENSIONS OF EDUCATION

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Abstract

Dr.B.R.Ambedkar has been described as a philosopher; patriot; scholar; writer; the constitution maker; social revolutionary; humanistic thinker and socialist. He had also contributed a great deal to the cause of education. He mainly emphasized that the education as a vital force for individual development and social change. Ambedkar envisaged that education was an instrument for the change of the lives of untouchables. He thought that education would enlighten people and bridge the gap between the rich and the poor. Education plays an important role. It is an effective instrument of mass movement to safeguard life and liberty. Ambedkar has deliberately included Article 45 in the Directive Principles of State Policy. The Government of India has passed the bill of Right to Education Act 2008. His chief objective was to emancipate the Dalits from the age old domination of caste Hindus and to rebuild the Indian society based on the principles of liberty, equality, fraternity and justice. His well quoted declaration '*though I am born Hindu I will not die as a Hindu*' and his final conversion to the Buddhism reflect his disentanglement with Hinduism and his determination to reform the caste ridden Indian social order.

Key Words: Remove injustice and exploitation, free and compulsory education, triumvirate 'Educate, Agitate, Organize'.

INTRODUCTION

Ambedkar knew that education was the *sine qua non* for the reconstruction of the society on the principles of equality and justice. Studying the development of education in Indian Society he found that during the rule of Peshwa in Maharashtra and even during the earlier period of British Raj, right to education was restricted to higher castes. He fought for the education of masses without discrimination of caste and sex. He was of the view that education is something which ought to be brought within the reach of everyone. The education department is not a department which can be treated on the basis of *quid pro quo*. Education ought to be available in all possible ways and to the greatest possible extent. Taking active part in the discussion on Bombay University Act and Primary Education Amendment Bill, he contributed his views in the reform of



Education. He founded the People's Education Society, and started colleges at Bombay and Aurangabad. He repeatedly urged the government that providing equal educational opportunities to all without discrimination was its responsibility however, boys and girls should get the different education.

Ambedkar has been described as a philosopher; patriot; scholar; writer; the constitution maker; social revolutionary; humanistic thinker. He had also contributed a great deal to the cause of education. He mainly emphasized that the education as a vital force for individual development and social change. Ambedkar envisaged that, education was an instrument for the change of the lives of untouchables. He thought that education would enlighten people and bridge the gap between the rich and the poor to which the untouchables belong. Education plays an important role. It is an effective instrument of mass movement to safeguard life and liberty. Education could encourage the oppressed ones to fight and remove injustice and exploitation and pave ways for the free thinking (Sowbhgaya, 2014).

SIGNIFICANCE

Mahatma Jotiba Phule was the first one who raised the issue of education for backward castes before the Hunter commission. And then there was another towering personality, the constitution maker for free India, Dr. Bhimrao Ramji Ambedkar, who strived to secure rights for the depressed classes and fought for their liberation. He was the first untouchable student who pursued higher education from abroad and become *the father of modern India*. His philosophy of life was influenced by Buddha, Kabir, Mahatma Phule, Shahu Maharaj and so on. He presented his reformist suggestions on the educational rights of the depressed classes. His philosophical determinants have not been cherished by academicians of the country nor has his liberation ideas for the depressed classes discussed on a national platform by the upper castes. He wrote on various issues but the textbook academia of India have ignored his theories. Ambedkar remains just a constitution maker for millions of people of this country, not even upper caste media is sensitive to his ideas on education and liberation (Rajesh, 2016).

Ambedkar has deliberately included Article 45 in the Directive Principles of State Policy that, “the state shall Endeavour to provide, within a period of ten years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of fourteen years.” The Government of India has passed the bill of Right to Education Act 2008 and paid a great tribute to the contributions of Ambedkar to mass education.



Ambedkar is popularly characterized as the author of the Indian constitution but his effort to deconstruct the Hindu social order had been more significant. His objective was to emancipate the Dalits from the age old domination of caste Hindus and to rebuild the Indian society based on the principles of liberty, equality, fraternity and justice. His well quoted declaration '*though I am born a Hindu I will not die as a Hindu*' and his final conversion to the Buddhism reflect his disentanglement with Hinduism and his determination to reform the caste ridden Indian social order. His social reform project was founded on the mutually related entities of education, politics and power. Though he did not discourse on the epistemological concerns of education, he placed it at the center of the social change or reconstruction (Ramdas, 2002).

Educate, Agitate, Organize - *Triumvirate*

The triumvirate 'Educate, Agitate, Organise' formed not simply the slogan of the Bahiskrit Hitakarini Sabha; in fact it embodied the ideological basis of Ambedkar movement itself. It also denotes the epistemology of his social project, as it provides a context against which the rules and standards for the formulation of knowledge about the society and the individual could be determined. It also provides the means to investigate distinctions and categories that organize perceptions, ways of responding to the world and the conceptions of 'self'. The slogan can also be used locate the primary position given to schooling as the most significant mechanism by which power relations are established, reproduced and perpetuated in the society.

He clarified the objectives:

In order to bring about the uplift of outcastes it is first necessary to awaken them. Any community before it can progress must develop a consciousness. As someone has put it, while the poor are certainly handicapped by their poverty, the real obstacle in their path is their inertia and their indifference! To overcome this inertia and indifference it is necessary they should become charged with resentment of injustice of their own condition. Without it, they cannot get rid of the factors that obstruct their progress. And even this is not enough; while on the one hand the obstruction must be removed, one must also simultaneously promote conditions which will ensure their prosperity.

Ambedkar wanted the Dalits first to be awakened so that, they should become aware of their own social realities, the elements that prevent their progress. The centuries old dehumanization had made them perceive their lowliness as natural and as the result of the will of god. It is only through education, the education that arouse their consciousness, that they would get awakened. To be educated,



here, is not to become disciplined according to the established regimen of remembering and forgetting, of assuming identities normalized through discursive practices and of accepting a history of the predictable Hindu Mythology. Education should develop the consciousness that enable one to see how one is constituted as an abstract entity, scientifically reasoned and socially identified. Once this consciousness arises, the individual becomes a sentient being. But consciousness is not only cognitive and emotional is volitional also. It is cognitive when it gives knowledge or information that is appreciated or apprehended. It is emotional when it exists in certain subjective states characterized either by pleasurable or painful tones; emotional consciousness produces feelings. Consciousness in its volitional stage makes an individual to willfully exert himself/herself for the attainment of some end. Volitional consciousness gives rise to what we call will or activity. Education ought to be cheapened in all possible ways and to the greatest possible extent. Taking active part in the discussion on Bombay University Act and Primary Education Amendment Bill, he contributed his views in the reform of Education.

Thus, having found that every possibility of social upheaval within the Hindu social order had been prevented effectively, Ambedkar exhorted his followers to realize their social realities. All his efforts then concentrated on educating the Dalits. He urged the government that the road to education must be open to all - males as well as females. He affirmed that only an educated self can get charged or agitated to respond to the wrongs effectively.

CONCLUSION

Ambedkar wanted the people to cultivate the values of freedom and equality among themselves; it is possible only through education. He regarded education as a means to reach the doors of light and perception to remove the regions of darkness and ignorance. Ambedkar emphasized on secular education for social emancipation. Following this order, can positively result in achieving more outcomes that are beneficial not only for our community but for the society as a whole. For Ambedkar, education was the main key to open the doors of light, vision and wisdom.

He himself said, *“Education is something which ought to be brought within the reach of every one. The object of primary education is to see that every child that enters the portals of a primary school does leave it only at a stage when it becomes literate continuous to be literate throughout the rest of his life.”*

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A BRIEF OVERVIEW OF KARNATAKA HISTORY

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INTRODUCTION

People have lived in what is now known as Karnataka for thousands of years. Many distinct cultures and civilizations have called the area home since the first migrants, who are estimated to have arrived approximately 3000 BCE. The Mauryas, the Chalukyas, the Rashtrakutas, the Vijayanagar Empire, and the Hoysalas are only a few of the historical rulers of the area. Karnataka has seen the influence of various dynasties in the form of art, architecture, and culture. With its control from the sixth to the twelfth century CE, the Chalukya dynasty represents one of the most significant periods in Karnataka's history. The Chalukyas are credited with creating some of Karnataka's most striking architectural structures, such as the cave temples at Badami and Aihole.

In addition, they were in charge of building numerous Hindu temples, such as the Kailasa and Mahakuteshwara Temples. Another significant empire in the history of Karnataka was the Vijayanagara Empire. The fourteenth century CE saw the founding of the Vijayanagar Empire, which peaked in the sixteenth century. Some of Karnataka's most striking architectural structures, such as the Virupaksha Temple and the Vijayanagara Fort, are the product of the Vijayanagar Empire. Another significant empire in the history of Karnataka was the Hoysala Empire. From the eleventh to the thirteenth century CE, the Hoysala Empire ruled. Numerous Hindu temples, including the Hoysaleswara and Chennakesava temples, were built by the Hoysala family. Karnataka, which has a history stretching back to the Paleolithic era, has also hosted some of the strongest empires in ancient and medieval India.

These empires supported philosophers and musical bards who started literary and socio-religious movements that are still going strong today. Hindustani and Carnatic (or Karnataka) traditions of



Indian classical music have benefited greatly from Karnataka's contributions. In India, the highest number of Jnanapith prizes have gone to Kannada writers. As the State's capital, Bangalore is at the vanguard of India's explosive growth in both technology and the economy. India's Karnataka state has an interesting and lengthy past. This piece will examine a few of the old historical locations that made an impact.

Works on Karnataka History

The field of historical research on Karnataka has not received much attention. There aren't many works on the subject that have been published yet. The most significant of them is a compilation of talks given at a 1984 conference sponsored by the Mythic Society. More so than historiography, it was a Seminar on Karnataka Historians. Later on, Suryanath Kamat edited and published these works [Kamat 1991]. Numerous academics wrote papers on various facets of historians and historiography. J.F. Fleet, B.L. Rice, R. Narasimhachar, S. Krishnaswamy Aiyangar, R. Shamasastri, K.B. Pathak, M.H. Krishna, ICA.Nilakantha Sastri, S.Srikantha Sastri, S.C. Naandimath, B.A. Saletore, G.S. Halappa, M.V. Krishna Rao, K.N.V.Sastri, M.Shama Rao, Hullur Srinivasa Jois, M.S. Puttayya, M.Govinda Pai, R.S. Panchamukhi, and C.Hayavadana Rao are the scholars about whom inquiries were documented in this work. It seems that a few of these academics were not involved in the early history of Karnataka.

Furthermore, there were helpful surveys on the research conducted in the areas of art and archaeology in Karnataka. Karnataka Itihasa Samsodhakar 16 (Researchers of History of Karnataka) is a Kannada book written by A.M. Annigeri that describes 13 historians from Karnataka. [Annigeri, 1985] The works of B.L. Rice, J.F. Fleet, K.B. Pathak, H. Krishna Sastri, R. Narasimhachar, M.H. Krishna, S. Srikantha Sastri, N. Lakshminarayan Rao, R.S. Panchamukhi, KLG. Kundanagar, P.B. Desai, B.A. Saletore, and R.N. Gurv were included, along with brief summaries of their biographies. An excellent description of the historians and epigraphists who made significant contributions to the study of Karnataka's past was included in the work.



In 1998, a more thorough examination of the lives and contributions of up to 61 experts to various branches of Karnataka studies was released. This Kannada congratulations volume was given to Professor M.M. Kalaburgi. [Rajur and Kanavalli, 1998]. All of these books, nevertheless, tended more to exalt the concerned scholars than to provide an unbiased evaluation of their contributions. Additionally, they don't give early Karnataka history researchers any fresh perspectives.

Objectives of the study

- ✦ Take into consideration the leading historians from the 19th and 20th centuries who represent various historical trajectories in Karnataka.
- ✦ To determine the causes of the inconsistent advancement in the analysis of many facets of Karnataka's past.
- ✦ To suggest potential new directions for the study of Karnataka's early history.

Karnataka's prehistoric past in brief

Karnataka's prehistoric culture was significantly distinct from that of northern India. Karnataka was home to a thriving hand-axe civilization in prehistoric times. This culture was comparable to African prehistoric culture. The people of Karnataka knew how to use iron even before 1200 B.C. This occurred far earlier before the people of North India learned about the usage of iron.

Early Karnataka history

The northern regions of the nation were home to Karnataka's ancient rulers. A portion of Karnataka was ruled by the Mauryan and Nanda Empires of North India in the fourth and third centuries BCE. About three BCE, the Satavahana dynasty took control of Karnataka following the fall of the Mauryan Empire. They reigned over large swathes of Maharashtra, Andhra Pradesh, and Northern Karnataka. Their language of administration was Prakrit. During their reign, Telugu and Kannada were discovered and developed. Karnataka was ruled by the Satavahana dynasty for nearly three centuries. For a brief while, the Pallavas of Kanchi emerged as the major force in Karnataka as a result of the Satavahana dynasty's decline. The Kadambas of Banavasi and the Gangas of Kolar, two indigenous



dynasties, ended the Pallavas' dominance. The rise of the Western Ganga Dynasty and the Kadamba dynasty signified the beginning of Karnataka's independence from other political powers.

India's Medieval History : Numerous kingdoms and empires have come and gone from
Karnataka.

Dynasty of Kadamba (325 AD–540 AD)

The Kadambas are recognized as Karnataka's first royal family. Mayurasharma was the founder of the dynasty. From Banavasi, this dynasty ruled over the Konkan and North Karnataka. The Kadambas were the first kings to use Kannada for official business. They added to Karnataka's architectural legacy and produced gold coins as well. Before the Chalukyas seized control of their empire, the Kadambas governed Karnataka for more than 200 years. However, until the fourteenth century, a few petty Kadamba dynasties ruled over Goa, Hanagal, and other areas.

Ganga Dynasty in the West (325 AD–999 AD)

The Ganga Dynasty first held power in Kolar before relocating their headquarters to Talakadu. To distinguish them from the Eastern Ganga dynasty, which ruled over Kalinga (modern-day Odisha) in following centuries, this dynasty is known as the Western Ganga. They ruled over a large portion of Tamil Nadu, Andhra Pradesh, and Southern Karnataka. They established a solid framework that helped Kannada literature flourish. The Gangas built a number of monuments. Built in Shravanabelagola in 983 AD, the Gomateshwara monument is regarded as the most famous example of Ganga architecture and is the tallest monolith statue in the world. The Ganga dynasty governed for almost 700 years, or until the Badami Chalukyas came to power. Until the end of the tenth century, they remained in power under the Rastrakutas and the Badami Chalukyas.

Chalukya Dynasty of Badami (500 AD–757)

The founder of the Chalukya dynasty was Pulakeshi. The Badami Chalukyas were the first dynasty to rule from Vatapi, or



modern-day Badami. The Badami Chalukyas played a pivotal role in uniting Karnataka under their unified governance. They made significant contributions to both architecture and art. The Badami Chalukyas were the ones who transformed South India's political landscape from one of tiny kingdoms to vast empires. The majority of Karnataka, Maharashtra, and portions of Andhra Pradesh, Madhya Pradesh, Odisha, and Gujarat were governed by the Chalukyas. The Badami Chalukyas' rule was superseded by the Rashtrakutas' ascent.

Dynasty of Rastrakuta (757 AD–973 AD)

Dantidurga II, sometimes known as Dantivarman, established the Rastrakuta dynasty. The Badami Chalukyas were the feudal lords of the Elichpur tribe. The clan overthrew Chalukya Kirtivarman II during the reign of Dantidurga and established an empire with the Gulbarga region of modern-day Karnataka as its basis. Afterwards, this clan came to be known as the Manyakheta Rastrakutas. As per the Arabic work *Silsilat al-Tawarikh* (851), the Rastrakutas were considered one of the four major global empires. This dynasty reigned over much of Andhra Pradesh, Madhya Pradesh, Tamil Nadu, and all of Karnataka and Maharashtra. Architecture thrived while they were in power. The Rastrakutas constructed the renowned Kailash Temple in Ellora. The "Age of Imperial Karnataka" refers to the period ruled by the Badami Chalukyas and Rastrakutas. Chalukya Dynasty of Kalyana (973 AD–1198 AD)

In 973 AD, the Chalukyas of Kalyana ousted the Rastrakutas and took control of the region. Their king, Someshwara I, established Kalyana as his capital (modern-day Basava Kaluyana in Bidar district). To distinguish themselves from the Vengi Chalukya dynasty, the Kalyana Chalukya dynasty is also referred to as the Western Chalukya dynasty. This dynasty governed over all of Karnataka, Maharashtra, and portions of Tamil Nadu, Madhya Pradesh, and Andhra Pradesh. Karnataka saw a flourishing literary scene during the Chalukya dynasty, who also supported the arts and architecture. Itagi's Mahadeva temple, located in the Raichur district today, is regarded as the best Chalukyan landmark. After taking control of their empire, the Kalachuri dynasty ruled for roughly 20 years, but they were unable to maintain the empire's integrity. As a result, the



empire grew weaker and eventually broke up, with Hoysalas in the south and Sevunas in the north sharing control.

Dynasty of Sevuna (1198 AD–1312 AD)

When the Kalyana Chalukya dynasty's influence began to decline, the Sevuna dynasty took over. Prior to their declaration of independence, the Sevunas were the feudatories of the Western Chalukyas and the Rashtrakutas. Dridhaprahara was the Sevuna dynasty's founder. Because they established their capital at Devagiri (modern-day Daulatabad in Maharashtra), this dynasty is also known as the Seuna or Yadavas of Devagiri. They controlled much of Maharashtra, portions of Andhra Pradesh, and northern Karnataka. The writings of the renowned mathematician Baskarasharya, the illustrious scholar Hemadri, and the brilliant music writer Sharngadeva cemented the dynasty's place in history. This dynasty's monarchs and the Hoysala dynasty's rulers were at odds all the time. At last, Allah-ud-din Khilji, the sultan of Delhi, and his general Mallikaffar brought the dynasty to an end.

Dynasty of Hoysala (1000 AD–1346 AD)

The fabled Sala was the founder of the Hoysala Empire. After he killed a tiger to save his master, he gained notoriety, and the empire was given the name Hoysala, which means "to hit or shoot." The Hoysalas relocated their capital from Belur to Halebidu over time. This dynasty reigned over portions of Tamil Nadu, Andhra Pradesh, and southern Karnataka. In South India, there was a notable advancement in art, architecture, and religion during the Hoysala period. Their temple building brought them fame. Their sculptural exuberance may be seen in the famed Chennakesava Temple at Belur, the Hoysaleswara Temple at Halebidu, and the Kesava Temple at Somanathapura. The Hoysalas constructed over a hundred temples, which are still dispersed over Karnataka. They also promoted the growth of Kannada and Sanskrit literature. Great Kannada poets like Rudrabhatta, Raghavanka, Harihara, and Janna rose to prominence during this time.



The Vijayanagara Empire (c. 1336–1565)

In 1336, Harihara I and his brother Bukka Raya I of the Sangama Dynasty founded the Vijayanagara Empire. Hampi served as the Vijayanagara Empire's capital. By the end of the 13th century, the joint efforts of the southern countries to repel Islamic incursions had brought the empire to prominence. The entirety of Kerala, Tamil Nadu, and most of Karnataka and Andhra Pradesh were under the control of the Vijayanagara Empire. This empire was wellknown for its wealth and might. Kannada, Tamil, Telugu, Sanskrit, and other noble arts and literature all reached new heights under the authority of this empire's emperors. During this time, carnatic music changed. The magnificent monuments left behind by the empire are dispersed throughout South India. Sighted at the UNESCO-designated Group of Monuments at Hampi, are some of the most well-known examples of the architectural prowess of the Vijayanagara Empire. One of the best examples of Vijayanagara architecture is the Stone Chariot at Hampi. Following the Deccan Sultanates' victory against the Vijayanagara Empire in the Battle of Talikota in 1565 AD, the empire's influence began to wane.

Empire of the Bahmani (1347 AD–1527 AD)

The first sovereign Islamic kingdom in South India was the Bahmani Empire, sometimes referred to as the Bahmanid Empire or the Bahmani Sultanate. Ala-ud-din Hassan Bahman Shah, a Turkic or Brahmin convert, founded the Bahmani Empire. It was regarded as one among India's great medieval kingdoms. The northern regions of Karnataka and Andhra Pradesh were under the empire's dominion. The Vijayanagara Empire's Krishnadevaraya overthrew the last remaining Bahmani Sultanate, bringing to the collapse of the empire. Following 1518, the Bahmani Sultanate was split up into five states: Qutubshahi of Golconda (Hydrabad), Nizamshahi of Ahmednagar, Baridshahi of Bidar, Imadshahi of Berar, and Adilshahi of Bijapur. The Deccan Sultanates are their collective name.

Sultanate of Bijapur (1490 AD–1686 AD)

Yusuf Adil Shah established the Adilshahi, a Shia Muslim dynasty that ruled over the Sultanate of Bijapur. They ruled over Bijapur and the surrounding regions. During that time, Bijapur was a renowned



centre for education. The Bijapur Sultanate saw a flourishing Islamic architectural movement in the area. During their rule, the most notable structure constructed in Bijapur is the Gol Gumbaz. After being subjugated by Emperor Aurangzeb, the Bijapur Sultanate was incorporated into the Mughal Empire in 1686.

Karnataka's modern history

Hyder Ali and the Wodeyars of Mysore emerged as major political forces in Karnataka's contemporary history. Afterwards, Karnataka was ruled by the British before the nation attained independence.

Keladi's Nayakas (1500 AD–1763)

Originally ruling as a tributary of the Vijayanagar Empire, Nayakas of Keladi were also known as Nayakas of Bednore and Kings of Ikkeri. Following the fall of the empire in 1565, they proclaimed their independence. They controlled areas of northern Kerala, Malabar, the central plains along the Tungabhadra River, and coastal and central Karnataka. They constituted a significant dynasty in Karnataka's past. They were subsumed into the Kingdom of Mysore after being vanquished by Hyder Ali in 1763.

Mysore's Wodeyars (1399 AD–1761)

At first, the Vijayanagara Empire's subordinate state was the Kingdom of Mysore. The kingdom became independent when the Vijayanagara Empire collapsed. They moved their capital to Srirangapattana from Mysore. By 1686, nearly all of southern India was ruled by the kingdom. The Wodeyars paid the Mughals three lakh rupees in 1687 AD to purchase Bangalore. By the year 1761, Hyder Ali had acquired control of the Wodeyar Kingdom.

Srirangapattana Sultanate (1761 AD–1799 AD)

From Srirangapattana, Hyder Ali presided over the Kingdom of Mysore. After him came his son Tipu Sultan to power. Parts of Andhra Pradesh, Tamil Nadu, Kerala, and most of Karnataka were included in the Sultanate of Srirangapattana. In the second half of the



18th century, under the de facto ruler Haider Ali and his son Tipu Sultan, the Kingdom of Mysore attained its zenith of military might and dominance. Tipu Sultan repeatedly resisted the British invasion. He was finally vanquished in 1799 AD on the battlefield thanks to the combined efforts of the British, Maratha, and Hyderabad Nijamas. Tipu Sultan, dubbed the Tiger of the Battlefield for his valour in combat.

The Wodeyars of Mysore (1800 AD–1831)

Following Tipu Sultan's passing, the British seized control of large swathes of the Mysore Kingdom, turning it into a princely state. The Wodeyars were restored to power and governed the princely state until 1831, when the British retook control of the empire.

British occupation (1831–1881)

The British appointed commissioners to rule on their behalf after seizing control of the Mysore Empire in 1831 AD. They brought about a number of modifications to the empire's operations. They split the state amongst the provinces of Hyderabad Nijamas, Mysore, and Bombay and Madras.

The Wodeyars of Mysore (1881 AD–1950 AD)

Mysore was returned to the Wodeyars in 1881, this time under Jayachamaraja Wodeyar's leadership. At that point, the nation-wide call for independence from British authority had gained significant traction. The Wodeyars ruled India until 1947, when the country gained its independence. Mysore joined the Indian Union after independence. In 1950, Mysore gained its independence as a result. Mysore developed become one of India's most contemporary and urbanized regions during the Wodeyar era. The Wodeyar dynasty's monarchs promoted music, art, architecture, and fine arts.

Karnataka's unification in 1956 AD

Following their independence, the states of India were rearranged according to linguistic and other factors. Under the name



Mysore, the Kannada-speaking populace united to establish modern-day Karnataka. Up until 1975, the erstwhile Maharaja of Mysore served as its governor. In 1973, the state of Mysore was renamed Karnataka.

Conclusion

One of the richest states in terms of art and architecture is Karnataka. Since the middle of the 19th century, scholars have rightfully been interested in this wealth. In that century and the following twenty, a number of academics, both Indian and foreign, have sought to write histories of the art and architecture of early Karnataka, with a special emphasis on the Badami Chalukya monuments. New information about the early history of art in Karnataka has come to light after the discovery of the Kanaganahalli Stupa complex in the Gulbarga District. Karnataka's early art is still only studied in terms of description, chronology, and stylistic analysis. However, it is increasingly becoming clear that the monuments are living examples of the social and religious ideals of the eras they depict. Therefore, there is room for them to be the topic of new research in order to rebuild social and religious history as well. Thus, there are numerous approaches that can be taken to bring Karnataka's early past to life. And one expects that researchers looking into Karnataka's history and culture will investigate these possibilities.

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NUMBERS IN ECONOMICS: A DISCUSSION ON SCALAR AND VECTOR PROPERTIES

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Abstract:

The article presented here argues that the role of numbers is crucial in interpreting facts related to economic phenomenon. The article discusses the scalar and vector properties of numbers. For the purpose, the demand function is used. Through demand equation it is argued how the scalar and vector properties of numbers not only represent the magnitude or a relationship but also the direction to which such relationship is moving. The result of the discussion in the article reveals various important aspects of scalar and vector properties of numbers, chief among them is their ability to make forecast. The article concludes that the use of numbers and mathematical models in economics is inevitable.

Keywords: Numbers, Economics, Scalars and Vectors.

Introduction:

When Adam Smith titled his magnum opus as “An inquiry into the Nature and Causes of Wealth of Nations” he gave away the fact that the wealth changes in quantity from one point in time to another point in another time and from one nation to another nation in a manner which can be measured to draw comparisons between them and learn how the causes, represented in the form of determinants, themselves change in different quantities. Since then, the host of other books and economists dealt with various problems faced by an economy in terms of quantitative relationships between such causes. Hence, ‘*quantity*’ becomes the point of focus in dealing with questions concerning changes in an economy and those quantities are represented by numbers. The quantities, are represented in numbers like 1, 2, 3, 4,...so on or in algebraic terms like, w , k , l , n ,... and so on in explaining various economic phenomena. In either of the cases, numbers when used as values in ascertaining the magnitude or



strength of relationship between causes, represented as variables, enables an economist to verify his or her theory or hypothesis. The numbers are required to test a theory, either for the sake of induction or deduction. The laws, principles, hypothesis, axioms, or theories in economics follow the same rule, i.e., quantification of relationships represented by numbers. Numbers represent both magnitude and direction of cause and effect in a relationship identified in an economic phenomenon. Technically, numbers have features of scalar and vector, where, scalar represent magnitude and vector direction with magnitude. In this article a fundamental question is asked and effort is made to answer the same, i.e., how use of numbers make or take to the brink of making economics a science.

Review of Literature:

Numbers and mathematics have been part of economics since it was recognized as a separate branch of enquiry (Schabas, 1989). More than ninety years have passed since the seminal work of Schultz (1927) appeared extoling the use of mathematics and quantitative techniques in economic analysis. To it was added a critical discussion on the use of mathematics in economics by Shaw (1933). The opinion is that it is inevitable to use mathematics in economics as quantities and relationship between them cannot be ascertained without putting them into a systematic mathematical model. The scope to introduce mathematical techniques and methods in economics was further explored by Herstein (1953). There was also an emphatic analogy drawn between field physics and utility theory based on the use of calculus and was advocated that the basic human behaviour has a mechanism akin to field theory (Pikler, 1955). Hence, the argument is that some of the topics in economics invariably need mathematical reasoning and hence use of numbers support it (Koopmans, 1959). As a result of this it becomes possible to create a system of equations through which various economic phenomenon can be understood. This point of argument is prominent among economists and has been base for use of mathematical system in economic analysis (Wald, 1951). Encouraged by growing support for the use of mathematics in economics we can witness how mathematics and number representation for various economic variables is made through the literature in economics. For example, mathematical structure to describe general equilibrium is inevitable



(Zalai, 2005). One of the most prominent economic theories on production namely, Cob-Douglas function is purely based on numerical values of mathematical identities (Beer, 1980). This has given rise to experimental economics based on the economic theories proposed so far (Smith, 1994; Binmore, 1995; Samuelson, 2005; Alm, 2010). However, there has been a protest on the overuse of mathematics in economics (Quddus, 1994). Nevertheless, Dow (2003) emphatically has underlined the utility of mathematics in economics resting the debate on it at least till now.

The conclusion that can be drawn from the preceding literature review is that in economics the use of numbers and mathematics is not a matter neither of convenience or fashion. It is required to give argument a concrete face so that the interpretations of the data are logical and become base for effective decision making. After all, laws, theories, and research in economics are not for its own sake, their direct implication on society and on a nation is felt practically by every rational individual and concerned governments across the world.

Objectives of the study:

1. The objective of the paper is to identify the character of numbers because of which mathematics is used in economics.
2. To explore the possible areas in economics where numbers can be used in their full character.
3. To present arguments for the use of mathematics and numbers in economics.

Discussion:

Character of Numbers for which they are used in Economics:

There are types of numbers categorized into as rational and irrational numbers. The rational numbers are further categorized in, natural and whole numbers. Beside these, the other important type of any number is based on its scalar and vector characteristics. The scalar numbers represent magnitude and the vector numbers represent magnitude with direction. Any economic model based on



mathematical system contain numbers have both magnitude and directional characteristics. The model might be functional in character or intending to measure the quantitative relationship between the variables included in that model.

A model may be as basic as showing law of demand, i.e., $D=f(P)$, meaning demand (D) is the function of price, P . Or for multiple variable models like $D=f(P, I)$ meaning demand is the function of price and income I . A basic model or a multivariable model both have numbers representing scalar, for example, D , P and I . They show magnitude in the form of quantity demanded by a consumer for an amount of price with a certain amount of income at hand. These three magnitudes are bound by a relationship. D is a dependent variable and P & I are independent variables. Which means, D changes in the direction inverse or similar as changes in P & I respectively. However, the point of argument is not this. Our objective here is to seek the scalar and vector characteristic of the numbers.

The scalar and vector characteristics of numbers in economics are closely related to static and dynamic methods of analysis. If the analysis is dealing just with the economic phenomenon occurring at a specific point of time, then it is called as a static analysis and here the scalar characteristics of the numbers is presented. Because only the magnitude of that phenomenon is shown without given consideration to the direction in which it is moving. However, if the analysis is dealing with an economic phenomenon occurring through several points of time as a series the vector character of the numbers is reflected. Because, in this case not only the magnitude of the event by its direction is also taken into consideration.

It is undeniable fact in economic analysis that any phenomenon that occurs there is always an intercourse between two or more variables. And that produces a reciprocity between two or more than two variables involved in such intercourse. The intercourse between these variables produces a fact which is interpreted in a manner because of which a law or function is identified and established. Hence, any function is but a statement about an economic relationship either inverse or direct. The same is presented through



a graph. Any point on such a graph exhibits a relationship. That relationship is at a point showing a static relationship or a series of points which when joined form a curve and hence show direction of that relationship.

Let us take an example. The demand function used above can show scalar and vector features of a number. Assume that the demand function has only two variables, i.e., $D=f(P)$, where D is demand and P is price. And all other variables not included in the function are assumed to be constant, i.e., the assumption of ceteris paribus is applied here. These two variable equations will serve our purpose to identify the scalar and vector features of a number. First, some more about this equation. The equation has two sides, one, the left hand side which shows the dependent variable and, second, the right hand side which shows the independent variable. The dependent variable is responding variable, i.e., it responds to the changes occurring in the independent variable in our case, the price. The dependent variable shows response by change in its size or magnitude and moving towards a direction, in our case inverse direction, in response to the change in price. In doing so the scalar and vector features of these two variables are exhibited. The same line of thought can be presented with the help of numbers and a graph.

The following is the experiment through which the scalar and vector features of numbers used in economics are identified. For the purpose both numerical and graphical methods are used.

1. *To identify a scalar:* A single price-quantity pair (highlighted as a specific point, representing as scalar, on the graph given below).
 - I. A single price-quantity pair means looking at just one price and the corresponding quantity demanded.
Example:
 - II. If the price of an apple is Rs. 10, and the quantity demanded is 80 apples, we write it as: $(P, Q) = (10, 80)$
 - III. This is a scalar representation because we are dealing with only one number for price and one number for quantity.



- IV. The graph given below shows the scalar at point where the price is Rs. 10 and quantity demanded is 80 units represented with cross dot on the dotted curve.

With these above facts at hand a clear understanding about scalar features of the numbers can be explained. A scalar feature of a number is just a point on the curve representing the magnitude of price demanded and the price as a pair. Hence, a pair of two variables at one single point represents only a magnitude without due consideration for the direction in which both as a pair move when changes occur in either or both the variables in response to a change in either of them. A scalar is thus an element of static analysis.

2. *To identify vector:* Multiple price-demand pairs (forming the demand curve).

- I. A multiple price-demand pair means looking at demand for several different prices at the same time.

Example: Suppose we have the demand equation:

$$Q=100-5P$$

Now, let's check how demand changes for multiple price values:

Schedule of Price and Demand

Price (P)	Quantity Demanded (Q)
5	$100 - 5(5) = 75$
10	$100 - 5(10) = 50$
15	$100 - 5(15) = 25$
20	$100 - 5(20) = 0$
25	$100 - 5(25) = -25$

- II. These multiple pairs can be written as vectors:
 $P = [5, 10, 15, 20, 25]$
 $Q = [75, 50, 25, 0, -25]$
- III. Each pair (P_1, Q_1) , (P_2, Q_2) , & (P_3, Q_3) shows how demand responds to different price levels.
- IV. This vector representation allows us to plot a demand curve, which shows the overall trend rather than just one specific case.

It is interesting to know how the demand equation given above helps us to identify the numbers with vector feature fulfilling the conditions of magnitude and direction simultaneously. The



coefficient (5) and the sign (-) in the equation show the scalar and vector characteristics of number. The coefficient (5) the magnitude of change quantity demanded undergoes as a result of change in price by Rupee one. The sign (-) shows the direction in which the change in demand moves, i.e., upwards, or downwards suggesting increase or decreasing in demand. The demand equation also has one significant component namely, the intercept (100). The intercept shows just the magnitude of the demand when the price is zero. Though zero price is not possible in any economic transaction. It is mentioned just to draw the point home that in any equation magnitude is given. It is the other part of the equation having the coefficient which shows both the magnitude and direction for dependent variable and thus the equation has scalars and vectors together.

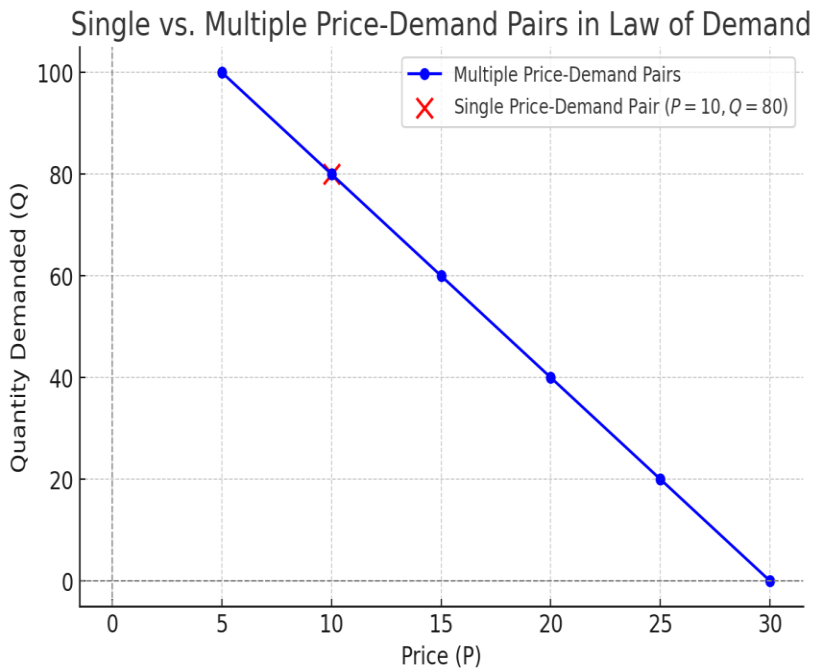
At this point it needs to be understood that any equation presented in the form of a function does not project numbers with scalar and vector properties. It is only when such an equation is assigned with values in real numbers that the magnitude is estimated and the direction is found.

This is further explained by the price and demand schedule given the form of table above. The schedule shows in its column (1) that as the price increases from Rs. 5 to 25 the quantity demanded decreases from 75 to -25. Thus, the magnitude in the form of increase the size of price and the direction in the form of decrease in quantity demanded shows as movement from upper part to lower part of the curve in the graph below exhibits scalar and vector characteristics of numbers used in economics.

Besides, this mathematical exercise is usually carried-out through econometrics. It is the combination of mathematics, statistics, and economic theory which assists economists to make quantitative analysis of the relationship between variables given in an equation.



Graph showing demand and price and their pairs along the curve.



Results:

The discussion and the experiment presented above gives unique set of results. One, scalar and vector features of numbers can be identified in the same equation giving a functional relationship between two or more than two variables. Two, if there is only one pair of number values of variables under consideration it gives only scalar character of the numbers but when more than one pair of such number values are taken into consideration, both scalar and vector characteristics of numbers can be found. Three, any functional equation can be presented in the form of a model which can be tested without losing the scalar and vector features of numbers. And finally, both scalar and vector characteristics of numbers can be represented on a curve of a graph.



The final argument:

The argument presented above makes it clear that the use of mathematics is not only a matter of convenience but also is required to make realistic interpretation of the data so that any given theory is tested, evaluated or improved upon for better decision making.

Conclusion:

The article gives a concrete argument for the use of numbers and mathematical models in economics. The scalar and vector properties of numbers enables an economist to understand the importance of each variable presented in the model and thereby becomes possible to identify variable or factors because of which changes in any economic system occur. Beside this a model representing some economic phenomenon should also have the property of making forecasting. For this purpose, the numbers play an important role. The scalar and vector properties of number make forecasting possible. Hence, the role of numbers and their properties in economics is as inevitable to it as oxygen for a human body.

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