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SUBSTANCE USE IN PERFORMING ARTISTS: EXPLORING LINKS TO CREATIVITY AND PERFORMANCE

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Abstract

The paper aimed at assessing attitudes of performing artists in India towards use of substances and current status of substance use prevalent amongst them. Their perceived reasons for the usage were explored along with their beliefs towards the effects of substances on creativity and performance. Non- probabilistic sampling was used to collect data from 77 artists through a self -developed quantitative questionnaire and 10 in depth interviews of artists in the age range of 18-35 years were taken. The quantitative data was analyzed by calculating descriptive and inferential statistics. The findings were then supported by the themes emerging from the qualitative interviews. Results indicated a positive expectancy of using substances in the field of performing arts, especially related to stress relief, loss of inhibitions, increasing energy and experiencing the character more fully. A subjective increase in creativity was reported by majority of the sample. Substances were reported to be acceptable in the industry for the purposes of networking and leisure. Commonly reported factors for initiation of usage were curiosity and experimentation which have been stated in literature, while specific reported factors maintained the usage such as coping with physical and emotional strain, hectic schedules, lack of support from family and financial and occupational instability. There is potential for research on the grounds of establishing statistical associations between substance use, creativity and performance. Issues faced by Indian performing artists triggering and maintaining substance use and abuse could be further explored in depth.

Keywords: Substance use, Performing Artists, Creativity, Addiction

INTRODUCTION

To define a psychoactive substance various properties such as an external dose with a chemical base directly affecting the central nervous system, altering brain functioning which results in temporary behavioural changes, along with changes in perceptions, consciousness and mood of the individual, is necessary.

Research shows that the active agents of substances were not extracted till 19th century A.D. Earlier, physicians often prescribed drugs such as Morphine for its effects on relieving pain. Eventually these prescriptions initiated the cycle of unregulated peddling of drugs by various sources, local and overseas. Morphine was one of the most common drugs used to cure war veterans in the American Civil

War, resulting in them returning home with their kits with this drug and hypodermic needles. Opium was another popular drug in the 1900's. It was estimated that by early part of this century, there were nearly 250,000 addicts in the United States of America.

Various drugs have found their prevalence in the Indian subcontinent by their extensive mention in various Hindu Texts and scriptures. They are linked to pious usage and Hindu deities, prescribed and fed through cultural beliefs. The earliest known consumption of any kind of substance is dated back to 2000B.C (somras/sura). Indian texts considered these as well as cannabis as source of happiness and liberators. These also have a history of being given to oxen by farmers to build strength to plough their

fields. Used by many sadhus and aestheticians these for their unique properties, these also produce hallucinations and timelessness. Bhang drinking (cannabis) is a part of various social and religious customs in India, as taken to celebrate on the festival of Holi. Opium was used habitually during the Mughal period, later replaced by smoking in M.P, U.P. and Rajasthan (Ganguly, 1995).

The World Health Organization defines substance abuse as persistent or sporadic drug use inconsistent with or unrelated to acceptable medical practice.

Documented Substance use in Western Culture

The outlaw of opium dens in San Francisco first happened in 1875. In 1906, the National Drug Law was passed. This also led to the Harrison Narcotic Act in 1914 to curb the sale of opium and cocaine. Heroin faced a legal ban at this stage. The Supreme Court also made it illegal for doctors to prescribe any narcotic drugs to addicts. Due to all these measures there was a decrease in the use of narcotics across the country. The 1950s, saw a massive increase in the use of marijuana, amphetamines and tranquilizers. In 1980s, cocaine and crack use again soared.

By the 1970's some localities had decriminalized the use of various narcotics and the drinking ages had also gone down in many states of the United States of America.

Documented Substance use in Indian Culture

Opium has been under the Central Government Monopoly since 1857. The prohibition of Opium was seen throughout India's Independence movement. 1611 opium smokers were reported in the country with 1% found to be addicted to cannabis (Chopra & Chopra, 1965).

With a vast population of more than 1 billion, research shows that about 3 million people are suffering from drug addiction in India. According to a survey by the World Health Organization, Cannabis, Heroin, Opium and Hashish, along with cigarettes are the most common substances used in India. An increasing upsurge of methamphetamine users is also seen. Analgesic intravenous injections like dextropropoxyphene are reported from many states, due to its easy accessibility at 1/10th the cost of

heroin. Codeine-based cough syrups are diverted from the domestic market for abuse.

The prevalence rates according to recent studies are 0.94 to 13 per 1000, in Uttar Pradesh 18.55-22.8 per 1000. In a 1998 study by Chandrashekhar & Reddy the prevalence rate of alcohol/drug use was found to be 6.9 per 1000 in the Indian population. Another recent study in Lucknow revealed that regular users constituted of 73.65% tobacco smokers, 62.38% were experimenting alcohol and 64.28% of psychotropic drug users were dependent.

The Narcotic Drug and Substances Act was introduced in 1985 which made it illegal for a person to produce/manufacture/cultivate, sell, transport, consume, possess, purchase or / and store any psychotropic substance. There have been various amendments to the act in 1998, 2001 and recently in 2014.

Drug use and Creativity

The use of psychoactive substances has been commonly linked to creative outcomes and expectancies.

Though there have been inconclusive studies on the effects of substances on creativity. Alcohol has been associated to increase creativity by reducing inhibitions, as supported by the disinhibition hypothesis. Nicotine has been linked to cognitive gains such as information processing, working memory function and speed, while negligible effects on creativity were seen. (Runco & Pritzker, 2011).

In a study done on Cognitive Motivations for Drug use it was found that enhancing positive affect and creativity was seen as one of the major factors for the 15 reasons for drug use. A longitudinal analysis over a span of 1 year showed that actual alcohol use increased with the motivations of using alcohol while motivations to use cannabis also increase the use of other drugs (Newcomb, Chou, Chih-ping, Bentler & Huba, 1988). A study done by Hicks, Pederson, Friedman & McCarthy, 2011 tested the creative performance of 566 substance related primes possessing creativity related substance expectancies. Two different groups were exposed to alcohol and marijuana respectively and were then given a creative problem solving task and a divergent thinking task in

the same order. The results showed that an exposure to the psychoactive substance enhanced performance on creativity tasks for those who expected that the substance would enhance creative functioning while this same result was not seen on measures unrelated to creative problem solving, clearly indicating that creativity related expectancies influenced creative performance.

Performing Arts

Performing art is defined as a live genre of art forms wherein an expression of aesthetic and artistic capabilities is done in front of an audience using paths like movement, voice, body, etc. it is very different from the visual arts in which the artist creates physical art objects, working in isolation. Media played an important role in the dissemination of performances by using film and video recording. Yet these practices were well established on ritualistic grounds for many years, to be performed live, in front of an audience. The development of this into a structured art form with an emphasis on challenging the conventional notions of art and concept exploration, through people and artists as intermediaries.

Performing arts can be categorized into various fields, the more primary or popular forms being, dance, music, theatre and musical theatre. The secondary or minor forms include mime, magic or illusion, puppetry/circus arts, spoken word, public speaking and recitation.

Performing arts in India

Natyashastra, first written in the 2nd century had laid the foundation for dance, drama and music in the Indian context. The navaras including love, pathos, heroism, humour, terror, wonder, disgust, serenity and anger, form the crux to Indian aesthetics.

Classical music has always been regarded as a form of meditation, concentration and worship. Indian Music constitutes of two integral variants -the Raga, musical mode and the Taal. The Bhakti traditions introduced two types of classical music, Carnatic (southern Indian) and Hindustani (northern Indian), after the 5th century.

The six most popular Classical dances prevalent in India are; Manipuri, Kathak, Odissi, Bharatanatyam, Mohiniattam and Kathakali.

Theatre (drama) has a rich tradition in India for over a thousand years. It is still popular in various cities yet is struggling since the arrival of television and movies.

Performing arts has always been seen as a form of entertainment in India. The occurrence of professional training in stage art forms is a recent phenomenon. It is still to be fully recognized as an individual and independent source of income, falling prey to various notions attached to its novel formation and challenging the popular fields of economics and trade.

The life of these performers are full of extremities, facing problems of unemployment, time and money along with severe practice schedules, causing a vulnerability to various musculoskeletal injuries, sacrificing on personal lives and simultaneously creating something new for the stage, facing criticism and rejection consistently. These are yet added by the increased amount of stress, persistent in this profession due to the above mentioned difficulties.

According to a study by Wanke, Arendt, Mill, Koch, , Fischer, Groneberg in 2014, Stage performances seem to carry an increased injury risk compared to rehearsals. The "risk" of on-stage work is spread across various factors that seem to be stage-specific. Injuries were most commonly caused by the "partner" (21.7%) or "floor" (21.0%). The lower extremity was the most commonly affected body region (63.6%) ($p < 0.001$). Most (79.4%) of the accidents on stage occurred during an ongoing performance (frequency: 10.1/100 performances), with only 19.7% occurring during rehearsals on stage ($p < 0.001$). Due to the sustained injury, 30.2% of the dancers sustained a time-loss injury.

Another study on Occupational Stress and Coping Strategies of Professional Ballet Dancers in Korea by Noh, Morris, & Andersen, 2009 found by using Inductive content analysis of the data identified four major sources of stress: physical (i.e., physical appearance, poor physical condition), psychological (i.e., desire, slump, personality), interpersonal (i.e., relationship with a dance director, relationship with

other dancers), and situational factors (i.e., performance demands, finances). The results demonstrated that, within physical factors, physical appearance (e.g., maintaining a particular body type, keeping low body weight) was a preeminent problem.

Difficulties faced by performing artists could serve as factors for use of substances for various reasons such as stress reduction and coping. This makes them a vulnerable population for the effects of addiction commonly associated with substance use and abuse for various reasons. The various activities which could contribute, such as:

- Frequent shows
- Long rehearsal sessions
- Tiring tours
- Handling the media
- Auditions
- Connections to drugs and alcohol from friends or co-worker

Drugs and its Effects

Psychoactive substances often bring about subjective (although these may be objectively observed) changes in consciousness and mood that the user may find pleasant (e.g. euphoria) or advantageous (e.g. increased alertness) and are thus reinforcing.

Martin Barnes & Professor David Nutt explain the results of research into the effects of recreational drugs on the brain. (2013)

Acid (LSD) and magic mushrooms. These have hallucinogen properties and make people experience the surroundings in a different 'trippy' way.

Cannabis (marijuana, weed, dope, skunk)These have a relaxing effects on people. It also has effects on memory and may make them forget things.

Cocaine and crack cocaineIt is a stimulant which makes a person feel confident and full of energy.

Ecstasy (E) It is a hallucinogen stimulant that makes a person feel high, increases energy and gives a carefree and happy feeling.

Heroin (smack, diamorphine)This along with other opiates slow down a person's functioning and curbs emotional and physical distress.

Ketamine (K) This is an anaesthetic drug which gives a relaxed and calm feeling with unpredictable effects. Loss of control over behaviour, engagement in impulsive and reckless behaviour along with hyperthermia are reported effects. (Nutt, 2013). It can make you feel detached from yourself and others.

Solvents (gases, glues and aerosols)These give a drunken feeling along with hallucinations.

Speed and crystal meth (amphetamine and methamphetamine)It is known to increase energy and confidence quickly but may also cause paranoia and irritability. A variant of speed methamphetamine (crystal meth) can bout high fever with feelings of hopelessness, when it wears off.

Steroidspump up muscle mass but can bring on 'roid rage.

Valium (tranquillizers, benzodiazepines) Tranquillizers such as valium are sedative drugs that relieve anxiety and make people feel calm and relaxed. It is also used to wear off cocaine and speed effects.

The dynamic performing arts field requires a great amount of resilience in the professionals. "People in such a high pressure profession are under constant scrutiny and tend to develop issues with depression and anxiety, and, sadly, they abuse substances as a coping skill," (Alonso, 2013). Being in a profession like the literary arts or performing arts is a risk factor for Substance abuse and addiction. When an artist is trying to build a following, her schedule could become so tight that the very much needed periods of rest become almost non-existent. It is easy to see, then, why a drug prescribed to treat anxiety could be alluring (Khantzian&Albanese, 2008).

Performing artistes need to possess various characteristics such as creativity, spontaneity, endurance, skill establishment, technique

enhancement, etc. Though previously inconclusive results have been found on the link between creativity and substance use, some supporting studies and linkages have been confirmed. As reported as the disinhibition hypothesis, substances help in losing inhibitions, thus improving performances and surpassing mental blocks in artists.

Marijuana help in increasing originality and authenticity, in result helping in innovation and formation of new choreographic routines, scripting, thinking about new tricks and helps in discovering new associations, to present to an audience in an entertaining form. Also musicians are reported as high users of various illicit drugs, than the general population (Pritzker, 1999)

Yet, contrastingly, Kerr , Shaffer, Chambers & Hallowell(1991) found a lack of significant differences in the use of various illegal drugs when comparing , artists, composers and argued that many creative individuals described the experience of initially perceiving substances as useful to creativity only to find them destructive in the long run.

Janiger and De Rios(1989) investigated 20 artistes' work before and after administration of LSD. The findings were not clear at to if the individual artist was able to produce aesthetically superior work during the period when the drug was operable

Other studies such as Lowe(1995) found significant positive correlation between the creativity of 619 people and their degree of substance use. Steffenhagen, McCann &McAree(1976) found that drug users scored higher than non-drug users on two tests of creativity.

Goldstein and Eisenman(1974) found positive correlation between the characteristic of adventuresomeness and risk taking with increased use of substances. Gordon(1999) also explored in his study about how musical hallucinations(induced by illegal drug use- LSD) could be a source of artistic creativity for music composers.

An unpublished study by North and Beauvois obtained complete set of lyrics and dates of drug usage for 5 well known pop groups/artists(namely Aerosmith, The Rolling Stones,The Incredible String Band,The Beatles and the Todd Rundgren.) .

Computer analysis of the lyrics indicated that measures of lyrical aggression increased after periods of drug usage, whereas levels of ambivalence, cognitive terms and cooperation decreased after such periods.

Further more,in a longitudinal study of Comparative analysis of substance use in ballet, dance sport, and synchronized swimming done by, Peric , Zubcevic&Ostojic , 2010 , Using the Kruskal-Wallis test, they found no significant differences, between the groups taken for the study in terms of behaviours related to doping. Most of the examinees reported that they did not rely on physicians' and/or coaches' opinions regarding these behaviours. Only sport dancers admitted consumption of cannabis as anti-doing rules violation. Artists more convinced and recognizing that these kind of habits exist in their sport (or art) have a certain tendency toward doping usage.

Another study done by Sekulic ,Peric&Rodek, 2010, on Substance use and misuse among professional ballet dancers investigated substance use and misuse among 16 female and 9 male Croatian ballet professionals in 2008 using an original questionnaire. Analysis of personal, educational factors, activity and training related and social factors and other criteria such as: appetite suppressant, binge alcohol drinking, analgesic use, cigarette smoking and actual and potential "doping" habits. More than one third of the male dancers reported binge drinking, while 20% of the females smoked more than a box of cigarettes per day. Almost 25% of these dancers will use "doping" if it will ensure successful ballet performance, even if negative health consequences are faced. In males, the risk of potential "doping" behaviour increased with age. In females, a negative correlation was found between education level and cigarette smoking, but positive correlation was found between potential "doping" habits and behaviour.

A study done by Sekulic, Kostic&Miletic in June, 2008 focused on Substance Use in Dance Sport. In which they analysed SU and factors related to SU in dance sport. The sample subjects comprised of 21 female and 22 male dancers, all >19 years of age, who were given an anonymous questionnaire developed for this study.The results found that alcohol consumption was common but not frequent in

more experienced and successful dancers. Pain killer usage related to age in female dancers (all at $p < 0.05$).

This study pertains to explore the current usage of substances in professional performing artists as well as their perceived link between substance use, creativity and performance. As with huge gaps in literature and various inconclusive results, it is an attempt to discover novel associations in this area, in the Indian Context. The study also assesses how attitudes towards the use of substances in the field of performing arts along with perceived links to performance and creativity of artists can lead to an increased use of substances among them, making them vulnerable to substance addiction. The findings would thus, enable us to communicate the actual effects of substances on their physical health and form a base for finding the true connection between substance use and creative expression. It will also set a ground for further exploration in the fields of creativity, drug use and performance enhancement among artists.

METHODS

The current study looked at the pattern of Substance Use in performing artists. The main objectives of the study were as follows:

OBJECTIVES

1. Attitudes towards substance use in the sample.

Domains:

- General attitudes towards substance use
 - Perceived link between substance use and creativity
 - Perceived reasons and subsequent patterns
2. To explore the current usage and prevalence of substance use in professional performing artists.

Various researches have shown that performing artists face a lot of unique stressors. Social anxiety is

noted as one of the main reasons for substance use in this field. Various illicit drugs also act as esteem boosters as well as performance enhancers and hence, these objectives were made to explore these particular aspects.

Research Design

An Exploratory research design with a mixed method approach was applied to collect data for the current study.

Research Tools

To pertain to the quantitative part, a self-constructed questionnaire was developed which comprised of 46 questions. A parallel qualitative analysis was done of 10 personal interviews conducted on professional performing artists, trained in any form of performing art and currently engaged in stage performances. The quantitative questionnaire had objective type questions corroborated with open ended, descriptive questions, to understand each respondent's idiosyncratic meaning. The personal interview was based on the participant's experiences of using substances and its effect, if any, on their individual understanding of creativity and performance in their profession. The interview focused on asking open ended questions about their attitudes towards substance use in professional performing artists, their various reasons for usage, pertaining to this profession and the consequences of using any kind of psychoactive substance with proximity to performance on stage, also assessing creativity as regarded in their professional environment, and the use of substances. Triangulation of methods was used to corroborate the data collected with consideration to the objectives.

Sampling

Snowball and purposive non probability sampling technique was used. As the target population was difficult to access and was mostly done by freelancers in the performing arts industry and their further contacts, these techniques of sampling were decided upon, to make the study feasible.

Participants

The sample was decided to include people who were within the age range of 18- 35 years and were currently professionally engaged in the field of performing arts. The criteria set to define the population was that the participants must have been trained in any one form of performing art for minimum 6 months and should have done at least one stage performance, including an audience. Here performing art would include fields like dance, music, theatre, gymnastics, magic and trickery. The data was collected from 86 people, with 76 quantitative questionnaires and 10 personal interviews. The data was collected from one theatre institute, one performing arts academy and individual freelancing performing artists.

Visual artists were excluded from the study as most of them engage in art work individually, without an audience and hence an important aspect of stage performance would not be assessed.

Data Collection

The data was collected in Mumbai and Delhi, India. A consent form was attached with each copy of the questionnaire. Freelance performing artists were contacted for the data collection. Permission was also obtained from a theatre institute and performing arts academy, to collect data from the students.

The researcher was present at the time of data collection. The consent form was mandatory to be signed by the participants. It contained a brief about the study and the clauses of anonymity and confidentiality on the part of the researcher and the participant were explained.

All the questions of the respondents were answered and the queries were addressed. The respondents were debriefed about the details of the study and how the results will be used.

Data Analysis

Data was analysed using descriptive analyses. Means, frequencies, percentages and averages were computed.

RESULTS

Attitudes towards Substance Use

A majority percentage of individuals (44%) within the chosen population agree that some substances help in increasing their imagination and creativity. 41% also agree that substances may help them or someone in facing an audience. These findings indicate a more favourable way of perceiving substances vis-à-vis performance.

Among the participants 54% had been offered to use substances by their colleagues, co-performers, managers, in their professional environment. This finding hints at the possible frequent usage among performing artists and the normalization of Substance Use in the field.

Majority percentage of individuals in the representing sample, disagree with items which ask about a substances effect on sleep, pain and thinking.

It suggests that more than eliminating negative consequences, providing positive effects are the more preferred benefits of using Substances.

51% of women and 60% of men agree that substances may somewhere help them in decreasing physical pain. 48% of women also agree that it increases their imagination and creativity.

Equal percentage of male participants believe that using substances is a norm in the industry of performing arts.

48% of women agree that substances may help them face an audience. This also supports the themes emerging previously. While 42% men disagree with the same. This shows the difference between the males and females anxiety related to facing audiences while performing, which is a major part of the industry.

The major themes emerging when the participants were asked to elaborate on the effects of substances on their thinking gave out that 32% said that it did create an alternate state of mind which was hard to achieve without the intake of any substance. 18% felt that it helped them focus on minute details and increases their awareness. 14% supported that it

helped decrease inhibitions on stage and curb stage fright. While 9% of the participants felt liberated, free and stress free after the intake of a substance.

These themes support the positive expectancy of taking substances by many artists.

Similarly when asked to elaborate on the spontaneous and quick thinking while on stage corresponding themes of dis-inhibition, liberation and an increase in imagination and creativity could be seen. Further themes of promoting quick thinking and spontaneity are added on by 19% of the participants. A contrary finding also illustrates the slowing down of functioning as reported by 17% of the sample.

When inquired about their personal experiences of using a substance relief from stress comes out as one of the major outcomes of substance use with 14% reporting it, with the highest amount of 22% reporting a feeling of freedom from societal norms. 8% also reported that it would increase the feel and improvisation of the performance.

A direct question followed asking them about the effect on performance of their use of any substance with 18% reporting that it helped them connect with themselves and the audience. They also said that they felt more capable of expressing emotions.

The themes thus support the quantitative data wherein a positive expectation of taking a substance is seen in the population. The curbing of anxiety and enhancing emotional experiences have also been brought up.

Perceived link between substance use and creativity

28%-45% of the sample thinks that taking a substance before a performance might slightly alter someone's performing skill. 31% have felt a moderate difference in their performance after the consumption of a substance.

The alteration of skill after the use of a substances was supported by 9% with effects to increase in energy while 20% putting forward the effect of an alternate state of mind which helps them see different perspectives and novel openings.

23% said that it helped in reducing inhibitions and hence conceiving new ideas and presentations. They also brought out that it increases their concentration which helps them focus better. 17% also stated that it helps to get into the character which would enhance them to create better roles, designs and productions.

Though 52% women and 48% men disagree with substances as positively affecting a person's capability to deal with difficult acts, such as extraordinary lifts in the dance routine, an extremely emotionally heavy scene, a difficult trick/ reaching high notes but as elaborating on these themes such as substances helps in loosening up were given by 14% with a reduced focus on small mistakes while performing, which helps them to continue the performance on stage without bothering.

16% stated that substances would help them to view different perspectives, increasing their imagination and creativity and helping them imagine hidden domains.

38% of women have given their response as 2 on the scale of 5 indicating that they perceive or have experienced that a substance would have an effect on their performance more negatively than positively. While 33% of men seem to be both supporting and negating the difference in performance as they stand at the mid point of 3 on the scale, giving a neutral answer as to their performance can be negatively affected as well as positively enhanced by the intake of a substance. This shows the mixed opinions in the population and also indicates that there is a perception which does not negate the usage of substances for either reducing negative effects or enhancing performance positively. Table 1 shows the perceived reasons given by artists on their usage of substances.

Table 1 Perceived reasons for Substance Use among Performing Artist

Perceived reasons for substance use	Percentage of performing artists
Increase energy	31
Relieve pain	11
Curb appetite	9
Relieve stress	61
Lose inhibitions	39
Get into the character	35
Enhance spontaneity	26
Increase efficiency	20
Increase self-efficacy	9
Decrease sleep	10
Other(recreation)	11

Table 2 gives the gender wise distribution of perceived reasons for substance use as reported by performing artists.

42% of the respondents said that they won't use any substance in times of extreme practices combined with multiple performances, while 18% said that their consumption of the preferred substance would increase to several times a day, to deal with the schedule.

31% agree that it is a normal thing to use substances in the field of performing arts.

In the sample 57% tried alcohol after the age of 18 years , also 44% and 35% tried cigarettes and cannabis at the same age, respectively.

Teenage has been linked to trial of substances in the general population due to aspects of curiosity and experimentation, as also seen in the sample.

About 5-7% of the individuals in the sample had faced consequences/were caught in their professional environment for using substances.

62% of women tried alcohol after the age of 18 years while 54% males tried it for the first time at the same age. 38% women tried cigarettes and marijuana after becoming an adult, while 48% of men tried it at the same age.

Table 2- Gender wise reportage of perceived reasons for Substance Use

Reasons	Females (%)	Males (%)
Relieve stress	69	60
Lose inhibitions	52	35
Increase energy	31	42
Get into the character	48	31

Current usage and prevalence of substance use in professional performing artists

Among the participants: In the last one month 25% of the sample had smoked cigarettes which is a large chunk of the population selected compared to 2.6% who took alcohol or smoked marijuana. This also indicates at the easy accessibility of cigarettes, along with the acceptability of smoking in the population.

DISCUSSION

Prior studies have suggested that being in a profession like the literary arts or performing arts is a risk factor for Substance abuse and addiction. (Khantzian, & Albanese, 2008)

There have been inconclusive prior results suggesting that substances can be both positive/negative, affecting creativity and performance.

Prior and Current usage of Substance

Prior usage of substances or at least some experience with substance use is linked with people's attitudes towards substances, perhaps in a bidirectional manner. In our sample almost 80% of the participants had tried at least one substance till date. Some of them currently used substances while others had tried it once only. A vast majority of participants (57%) of artists had tried alcohol at the age of 18 followed by 44% who tried cigarettes and 35% who smoked marijuana for the first time. Although a smaller number (9%) also tried cocaine and heroin at around 18 years. Alcohol was more popular drug of choice among both men (54%) and women (62%) but use of cigarettes was lesser for both groups, 48% and 38% respectively.

Almost a quarter of the sample were frequent smokers but very few people recently consumed alcohol or marijuana.

Perceived Reasons for Continued Usage

Stress Relief. Herein we can see the perceived reasons for continued usage of substances as selected by majority of the sample as a relief in stress, stated by 69% of females and 60% males in the sample. Recognizing the demands of the field of performing

arts stressors such as long and invariable working hours, frequent shows, tiring tours, peer pressure and competition from the internal and overseas developments in the professional arena along with intense auditions and scrutiny by audiences, could be contributing to the continuous usage of substances by artists.

Hectic schedules of about 18-36 hours of work have been reported by almost all the interviewees leading to a decreased amount of sleep, tiredness, fatigue and distress from family.

The eccentric schedules of performing artists as reported are also cited as some of the reasons for the continued usage and even the increase in substance use. 2 of the participants in the interview stated that their intake of cigarettes increased at the time of tight and hectic schedules. Reasons mentioned include to deal with tiredness of the day and feeling calm, increasing number of waking hours, to take a break and to feel happy. Alcohol has also been reported by 10% of the participants to feel good before a show. While marijuana was also taken by 10% to relax and generate new ideas in a stressful environment.

The qualitative interviews of 10 participants brought out various stressors in the field. 50% of them said that it is a hard field to take up in India as it has very less opportunities and exposure in the country. Financial problems are thus, a very common difficulty faced by artists as reported by 8 of the interviewees. The other 2 agree that it had variable and multi income sources and requires you to engage in various activities such as teaching, production, choreography, entrepreneurship, training, etc. simultaneously.

Dealing with family in terms of making them accept performing arts as a profession has also been reported by 7 of the interviewees as a cause of tension. Challenges in terms of family issues relating to finances was also reported by the male interviewees. Similarly the female interviewees expressed that they also face pressure from their families regarding continuing in the profession in terms of being accepted as good daughters in law of the families they marry in. Concerns regarding finding a match for marriage, for a person in the field is reported to be

difficult due to the instability, as reported by 60% of female participants.

As seen in the review study done by Heckscher, Albin, Kaplan & Jenkins in the College Music Symposium, 1967 of the book *Performing Arts: The Economic Dilemma. A Study of Problems Common to Theatre, Opera, Music and Dance* by Baumol & Bowen 1966 they mentioned that there is no effective way to increase the productivity of live performances and thus as productivity increases the economic wages of other fields would increase, thus, discouraging professional careers in arts as their compensation will not be able to level with the general pars of wages and salaries.

Structural Problems associated with the profession

Performing artists on an average work for fewer weeks per year, earn considerably less and face higher issues of unemployment than other professionals with equitable educational levels. The median salary of technical workers was reported to be 10% higher than the median salary of performing artists. (McCarthy, Lowell & Zakarus, 2001)

Physical harm or accidents may take a toll on their career, diseases and ailments may cost them to lose their position in the field and falling short on not having an alternative plan B could be detrimental. American Journal Of Sports Medicine reported Ballet companies to annually state 67-95%, accounting to use of drugs for treatment of trauma, repetitive use and inflammation problems among performers. Weight control and maintenance of lean and lithe bodies is another issue reported by Medicine Science in Sports Exercise, 1988, for which drugs are used.

They voiced that there is no surety of taking up an art as a career because it is never seen as a primary profession. Males, seen as the bread winners in the Indian society which operates on patriarchy, feel a lot of pressure in going against societal norms as reported by 50% of the male participants.

Stress on the body

Review article exploring the Flexibility in Dance by Deighan & Martine in 2005, stated that professional standards of Ballet dancers depended upon their

bodily flexibility which is a precursor of professional competence in the field, also pointing out the association of this aspect with injury risk and muscular performance. These studies showcase that how physical fitness, especially flexibility in dancers could be a major factor to determine competence related stress in performing arts.

Relieving pain, getting high, experimentation and relaxation were termed as primary motivations of using substances among students (Low & Gendaszek 2002; McCabe et al. 2007; Quintero et al. 2006; Teter et al. 2005) also used as an aid to pain control, weight loss and sleep (Quintero et al. 2006). Avoidance of stress and momentary pleasure were also reported by 30% of the participants.

Anxiety sensitivity index was positively correlated with the use of alcohol as a coping strategy along with a positive correlation of nicotine with the same index among females. (Stewart, 2002).

Dis-inhibition– influence on performance.

The qualitative interviews support the data as people reported that their musicality is highly affected by using a substance. Their creativity which a musician termed as his musicality referring to understanding music better, increases. He also mentioned that it helped him disconnect to the world and gave him a feeling and space alone with himself, due to which he could think better. Another respondent reported that he noticed that his brain started functioning faster, he could think faster and differently than usual days. He reported a curb in fear from the audience for which he had performed, making him more confident about himself. About 8 of the interviewees addressed that substances helped them feel at ease with themselves, working on their nervousness and stage fright. It makes them less conscious and they forget the feeling of fear and thus, perform better. 1 of them reported that after taking alcohol he became more engaging and lively on stage and thus, his performance improved. He was appreciated by his bandmates and the audience after the performance.

1 female respondent said that it may help forget the pressure that the audience, mates and managers put on performers. Thus, it helps remain calm in these situations. Another said that it makes a person be himself/herself and hence makes the person happy

and feel good about oneself. She also added that it will help a performer bare out his/her soul in the performance without thinking of the choreography which is ingrained in them due to multiple practices. She stated that it helps them connect to that part of themselves which gives the feel of the performance.

Perceived link between substance use, Creativity and Performance

1 male participant also shared an example where he had taken alcohol before a performance to decrease the pain from an injured hand, to play his guitar. He shared that he could then play the guitar for 3 hours at continuation. 1 female participant also reported that as she had a problem being loud on stage, alcohol would help her become more audible. Another shared the experience of a friend who would speak very well on stage after having alcohol, while would stutter and have less fluency otherwise.

The interviewees suggested that they do think that an alternate state of mind is engaged in. Most of them said that it did increase their realm of looking at things, broadened their minds and helps access different domains simultaneously. Another shared that cigarettes helped him create new ideas. Some reported that the brain starts functioning faster and more efficiently with working 4 folds than normal, with a reflexive increase, helping you to see the less travelled path. 2 of them also said that substances help enhance each and every moment of life. It thus, has a positive effect on observation, as it also helps slow down things to make them more clear.

An unpublished study by North & Beauvois obtained complete set of lyrics and dates of drug usage for 5 well known pop groups/artists (namely Aerosmith, The Rolling Stones, The Incredible String Band, The Beatles and the Todd Rundgren.) . Computer analysis of the lyrics indicated that measures of lyrical aggression increased after periods of drug usage, whereas levels of ambivalence, cognitive terms and cooperation decreased after such periods.

Creativity related expectancies influenced creative performance. Performance enhances on creativity tasks for those who expected that the substance would enhance creative functioning. (Hicks, Pederson, Friedman & McCarthy, 2011) .

The findings of the study are corroborated with empirical data wherein a positive expectancy of using a substance would create a difference in performance. Subjective experiences of this phenomena support the effects on creativity as stated by performers.

CONCLUSION

Performing arts is a developing field in the current scenario. It has long been linked with entertainment, but has now moved on to establish itself as an independent professional expertise.

Pressures of financial instability, a need for training equivalent to the overseas market, hectic schedules, competitive environments, curbing performance anxiety, delivering to audiences, unemployment, physical strain and lack of family support are some of the difficulties faced by them in the Indian context.

A constant need of creative expression and coping with these various stressors have been cited as some of the reasons for the use of substances in the field of performing arts. Researches have thus, found them at a risk for developing addiction related difficulties.

There has been minimal research in these areas related to substance use, in India. The findings of the study corroborate with previous research findings supporting the positive expectancy of substance use and its effects on creativity and stress relief.

The trends emerging in the study relate to the general attitudes towards use of substances for acceptance in peer groups, experimentation, relief from strain, recreation, along with reasons specific to performing artists, which maintain these substance related behaviours such as losing inhibitions, increasing imagination and creativity, pain relief, decreasing sleep and maintaining physical appearance. Drugs were also reported to be acceptable in the industry, commonly used for networking and during breaks between rehearsals. It was also seen that there were strong perceptions about positive effects of substances on creativity and performance skill. The reported usage before performance of any substance was negligible, limiting usage to leisure and breaks.

RECOMMENDATIONS AND FUTURE IMPLICATIONS

- Alternate interventions for the unique problems faced by artists, curbing the usage of substances . Therapeutic and counselling interventions such as psycho education, about the true effects of substances on their bodies, the shift to substance abuse and its implications on their career.

- Individual and group therapy options can be explored for reasons specific to performing artists. Healthy coping strategies and stress management.

- The current prevalence will help to accurately measure the usage of substances in the sample.

- Statistical associations between substance use, creativity and performance can be explored in further researches.

- Issues faced by performing artists in the Indian Context can be explored in depth in future researches.

LIMITATIONS AND FUTURE STUDY

- Convenience and snowball sampling were used for the purpose of the study. The same study can be done by using random sampling techniques to make the data more representative.

- Most of the participants of the study belonged to major popular domains of performing arts such as Dance, Theatre and Music. Each form of the performing arts can be further analysed individually using more qualitative analyses.

- A self-developed questionnaire was used to collect the quantitative data. A more qualitative methodology such as interviews or FGDs can enhance our understanding of the issues faced by performing artists.

- The sample was purposive in nature, limiting generalization of results to other samples.

- A descriptive analysis of data was done and no associations have been statistically established among variables. Correlations can be used to find associations between these variables when studied further.

- Subjective experiences of the artists were taken into account for the qualitative analysis. Thus, individual differences and personality factors may have influenced their responses.

In-text lists of references should be listed in chronological order (e.g. author1, 2002, author2, 2004, author3, 2008). Publications by the same author(s) in the same year should be identified with a, b, c (e.g. 2008a, 2008b) closed up to the year.

A reference list should appear at the end of the paper under the heading "References". All the references should be arranged in alphabetical order. Please follow the examples below (cf. References).

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IMPLEMENTATION OF INCLUSIVE EDUCATION: TEACHERS' PERSPECTIVES

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Abstract

Teachers play critical and crucial roles in the successful implementation of inclusive education. The aim of the study was to examine the attitudes of teachers towards the inclusion of students with special educational needs (SEN) in regular education classrooms and how their attitudes relate to their teaching strategies in the classroom. In this study, teachers from secondary schools in Jakarta, Indonesia, were invited to participate. They completed questionnaires on attitudes to inclusion and teaching strategies. The results have revealed that teachers held positive attitudes towards the inclusion of SEN students on the three components of attitudes. They preferred to use cognitive strategies compare to individual and varied strategies. Behavioral component of attitudes significantly related to all strategies of teaching strategy. Additionally, the usage of teaching strategies were significantly depended on teachers' teaching experience and training in special education.

Keywords: inclusive education, attitudes, teaching strategies, teacher, SEN

BACKGROUND OF STUDY

The inclusion of children with Special Educational Needs (SEN) in regular schools is a fulfillment form of the right to education for all ("Indonesia: National Report", 2009). Education that allows children with SEN to learn alongside their peers at neighborhood schools and get necessary support is known as inclusive education. While the terminology of SEN refers to the needs of the 'classic' population of students with communication disorders, motor skills disorders, sensory disorders, learning disorders, mental retardation, behavioural disorders, and students with a chronic disease (American Psychiatric Association, 2000).

Inclusive education requires a system, which referred to schools, to be adapted and modified to meet the diversity and differences of students' learning needs (Mittler, 2000). Considering that inclusive education held in regular school settings, it can be said that the successful implementation of this education is very dependent on teachers (Avramidis & Norwich, 2002; Forlin, 2001). Whereas most teachers in regular schools do not have trainings on special education

and their experiences in teaching students with SEN are also very limited (Kurniawati, De Boer, Minnaert, Mangunsong, 2016). In order to perform teachers' functions effectively, in terms of providing support and modifications for students, teachers must be adequately prepared.

Many studies have found that the attitude of teachers is a prerequisites factor successful implementation of inclusive education (Cook, 2002; Forlin, Loreman, Sharma, & Earle, 2007; Hastings & Oakford, 2003; Pivik, McComas, & La Flanne, 2002). Attitude is defined as a learned and stable disposition to respond favorably or unfavorably to an object, person, institution, or event in consistent way (Corsini & Auerbach, 1998). According to the three-component theory (Eagly & Chaiken, 1993; Triandis, 1971), attitudes consist of three components: cognitive, affective, and behavioral. Previous studies showed that the more knowledge held by teachers about the SEN students, will make them more receptive and confident in dealing with such students (see Shippen et al., 2005). It was also found that positive attitudes of teachers related to their willingness to include SEN students in the classroom. (e.g. Sharma, Forlin, &

Loreman, 2008). These findings emphasize the importance of helping teachers to have a positive attitude for supporting students with SEN.

In addition to attitudes, teaching strategies are also considered to play an important role for the successful implementation of inclusive education (Florian, 2009; Forlin, 2011). In the context of inclusive education, teaching strategy is defined as the process of choosing and applying methods of teachings after previously carried out assessments on students with SEN (Glaser, 1977 in Scott, Vitale, & Masten, 1998). This might include modifications made by teachers to learning materials, assignments, examination procedures, assessment criteria, the number of group members, as well as techniques to provide feedback. It was argued that the teaching strategies are required in order to support SEN participation both in social (Maheady, Mallette, & Harper, 2006) and academic activities (McLeskey & Waldron, 2002) in classrooms.

Inclusive education was formally started in Indonesia since early 2000s. Inclusive education principles contained in Indonesia's Constitution and National Education Law, No. 20/2003, and National Ministerial Decree No. 70 on Inclusive Education Services. Research on teachers' attitude towards inclusive education in Indonesia found that primary school teachers hold positive attitudes towards SEN students (Kurniawati, Minnaert, Mangunsong, Ahmed, 2012), but they lack the ability to educate SEN students ("Indonesia: National Report," 2009).

As stated above, teachers' attitudes and their teaching strategies are predictors of the success of inclusive education implementation in other countries (Folsom-Meek & Rizzo, 2002; Hastings & Oakford, 2003; Pivik, McComas, & La Flanne, 2002), less is known, however, about attitudes of teachers in Indonesia, particularly in secondary school settings. There is also no empirical evidence yet on how teachers' attitudes relate to teachers' teaching strategies. This study therefore was set up to:

1. Measure teachers' attitudes towards inclusive education,
2. Measure teachers' teaching strategies, and

3. Examine relationships between teachers' attitudes and their teaching strategies.

METHODS

Participants and setting

The study took place in several secondary schools in Jakarta, capital city of Indonesia. Respondents were teachers who taught either in grade 1, 2, or 3. They were chosen according to convenience and purposive sampling (Boeije, 2010).

Measures

Multidimensional Attitudes toward Inclusive Educational Scale (MATIES) (Mahat, 2008) was used to measure teachers' attitudes towards inclusive education. MATIES consists of three components of attitudes, namely cognitive, affective, and behavioral. Respondents were asked to express their agreement with each component of the instrument on a 6 – point Likert scale, ranging from 'strongly disagree' (1) to 'strongly agree' (6). The higher score obtained in each component, means the more positive of teachers' attitudes towards inclusive education. Bender Classroom Structure Questionnaire (BCSQ) (Bender, 1995) was used for teaching strategy measures in the inclusive education setting. The measuring instrument has cognitive, individual and varied strategies. Teachers' usage of each indicated teaching strategy was expressed on the four-point Likert scale ranging from 'very rare' (1) to 'almost always' (4). To adapt with the Indonesian context, both the instruments undergo a process of adaptation that consist of translation, expert judgment, back-translation and readability test.

RESULTS

Respondents' Characteristics

Most of the respondents were women, aged over 50 years and had experiences in teaching between 21 – 30 years.

Teachers' Attitudes towards Inclusive Education

In all three components of attitudes, teachers tend to be positive towards inclusive education, for cognitive

($M = 24.77$, $SD = 5.180$), affective ($M = 26.04$, $SD = 4.302$), and behavioral ($M = 27.96$, $SD = 4.327$).

Teachers' Teaching Strategies

Teachers used more cognitive strategy than individual and varied strategies in teaching children with SEN in classroom (see Table 1).

Table 1: Means and SDs on Teaching Strategies($N = 259$)

Type of Strategy	Mean	Standar Deviation
Cognitive	37.23	5.09
Individual	34.34	4.01
Varied	114.66	12.55

Relationship between Teachers' Attitudes towards Inclusive Education and their Teaching Strategies

Results of *pearson correlation* show that there is a significant relationship between teachers' attitudes toward inclusive education and their teaching strategies ($r = 0.293$, $p = 0.03$). This means that the more positive teachers' attitude towards inclusive education, the more diverse teaching strategies used by the teachers. Further analysis on components of attitudes and teaching strategies found significant relationship between behavioral component and each component of teaching strategies, on cognitive strategy ($r = 0.31$, $p = 0.05$), individual strategy ($r = 0.38$, $p = 0.01$), and varied strategy ($r = 0.37$, $p = 0.01$). Different result, however, was found on the relationship between the two other components of attitudes and teaching strategies. In addition, analysis regarding predictor values of research variables found KP score of 9%. This means that attitudes of teachers influenced their teaching strategies by 9%, while 91% are influenced by other factors.

DISCUSSION

The aims of this study were to measure 1) teachers' attitude towards inclusive education 2) teachers' teaching strategies and 3) relationship between teachers' attitude and their teaching strategies. The results showed that teachers hold positive scores on all three components of the attitude. Deals with teaching strategies, it was found that teachers applied more cognitive strategies than other strategies. A

significant relationship was found between attitudes and teaching strategies, but the relationship is relatively weak as the influence of teachers' attitudes on their teaching strategies only as much as 9% .

Positive attitude of teachers towards inclusive education found in this study was also found in the teachers who taught at elementary schools in Indonesia (see Kurniawati, et al., 2012). This result does not seem surprisingly with the consideration that the teachers teaching in school that are designated to include students with SEN. In the inclusive educational setting, teachers are required to directly interact with students with SEN. This finding could be explained in relation to the theory of attitude formation (Eagly & Chaiken, 1993) which states that attitudes are formed by direct and indirect experience.

Another result revealed that cognitive and affective components of attitude towards inclusive education have no significant relationship with all the teaching strategies. The findings might be explained from several factors. First, this may be related to teaching experiences of teachers. As much as 39% of respondents had teaching experiences from 11 to 20 years. Previous studies reveal that teachers with teaching experiences for ten years and more were more realistic of teaching barriers in inclusive settings, consequently be more reluctant of accommodating the learning need of SEN students (Forlin, 1995, in Avramidis & Norwich, 2002).

Second, the finding could be related to the class size (Bender, 1995). The average number of students in one class is 40 children, this size makes teachers often feel overwhelmed and have no time to prepare various teaching strategies. Teachers therefore tend to use the same type of teaching strategies to all students. Third, this might be associated with teachers lacking of knowledge and teaching experiences on special education (Avramidis & Norwich, 2010; Scott, Vitale, & Masten, 1998). Indonesian government has actually equipped teachers with training, but it's still comparatively little training which only contains basic knowledge, not about teaching strategies (Kurniawati et al., 2016). Last, teachers inability to implement appropriate teaching strategies due to lack of school support, such as learning materials, teachers' assistant (Avramidis & Norwich, 2010; Scott, Vitale, & Masten, 1998).

As research on teachers' attitudes and their teaching strategies on secondary schools is still scarce, this study could be considered as stepping stone for improving teachers' competence and confidence in educating SEN students. For future research, the usage of another method such as observation might provide better picture of teachers' activities in the classroom, including their teaching strategies.

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THE DEVELOPMENT OF LOCAL CULTURE THROUGH TRADITIONAL GAMES FOR CHILDREN AT RUMAH PENDIDIKAN ASAH ASIH ASUH

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Abstract

Rumah Pendidikan Asah Asih Asuh is a community initiated by youth that feel our local culture has been eroded at younger generation, especially regarding tolerance and politeness. Therefore, this community is formed to develop local culture among children who will be the successor to the nation's culture. Considering the development of children that prefers learning through playing model, this community develop learning strategies with traditional games. Through this game, children are taught how to respect and loving others in politeness. In addition, children also learn about social communication, not only with friends of his age but also with younger or older. This study, as a preliminary study, are trying to describe Rumah Pendidikan Asah Asih Asuh to develop local culture among children that join with this community. This study uses qualitative approach by conducting interviews with three Rumah Pendidikan Asah Asih Asuh initiators for data collection. The results of this study indicate that the initiators feels the children develop positively after join this community. They see that this community helps them gain tolerance to others. The children also more polite and respect to their parents. Parents also conveyed when this community make some gathering for them. They said that their children now always taking care of their own stuff, always kissing hands when go out, tolerance to their sibling and more communicative. This result also recommends that playing traditional games are still needed and can not be replaced by high technology gadget-based games.

Keywords: development, local culture, traditional games

INTRODUCTION

Undang-Undang Republik Indonesia Nomor 20 tahun 2003 Pasal 3 UU Sisdiknas stated that "National Education serves to develop and form the character and civilization of the nation's dignity in the context of the intellectual life of the nation; aims to developing students' potentials in order to become a human that faith and fear of God Almighty, noble, healthy, knowledgeable, skilled, creative, independent, and become democratic and accountable citizens." Therefore it is the formal education that related should provide learning which aims to strengthen the nation's character. Schools are expected to enter cultural values in the learning so

that these characters internalized by the students, in this case children.

It is also reinforced by Peraturan Menteri Pendidikan dan Kebudayaan Republik Indonesia Nomor 23 tahun 2015 that stated one of Penumbuhan Budi Pekerti purpose is to develop a good habit as a form of character education since in the family, school, and community. However, in real conditions in the field of formal education tend to lead to the fulfillment of academic factors alone. Meanwhile, the formation of character less affordable. Currently, children tend to learn to pursue high value so that the factors shaping the character less attention. This gave rise to a phenomenon in which the character of the nation

began to fade among children. They tend to be individuals, are less sensitive to ambient conditions, lack of tolerance and less courteous towards others. While these things are characters that have become the nation's culture

One cause of this phenomenon is related to the modernization of poorly controlled use of technology. Bordova & Leong (2003) emphasizes that 'Nowadays young children spend less time playing with their peers and more time playing alone, graduating from educational toys to video and computer games'. Children can use the gadget in the whole time of its activities so they tend to become apathetic and less sensitive to ambient conditions. Kurniati (2006) proposes that modern playing phenomena characterized by high technology model have given an immense influence on child development. Beside their positive effects, these plays can also provide negative effects to child development, such as creating an anti social individual because the plays are passive plays that minimize the child opportunity to interact and develop other social skills.

Parents also tend to use the gadget to soothe their children and little to interact directly with them. Parents also tend to be focused on questioning the child in terms of academic ability. Schools, as a place of education also started to get carried away because of the demands of the material to be taught so focused on the completion of teaching materials.

Rumah Pendidikan Asah Asih Asuh looks at the phenomenon which happens to be an important issue to be handled. Therefore, they formed a community which aims to develop the character of the nation that became the nation's culture avoid increasing their erode. The focus of its activities to teach children how to be polite and tolerant and train their social interactions. Rumah Pendidikan Asah Asih Asuh is a community initiated by youth that feel our local culture has been eroded at younger generation, especially regarding tolerance and politeness. Therefore, this community is formed to develop local culture among children who will be the successor to the nation's culture. Considering the development of children that prefers learning through playing model, this community develop learning strategies with traditional games. Through this game, children are taught how to respect and loving others in politeness.

In addition, children also learn about social communication, not only with friends of his age but also with younger or older. From playing games they hope children feel more comfortable with their program and more understand the goal of the program.

Principle of Child Development and Learning

In 2009, National Association for the Education of Young Children (NAEYC) stated there were 12 principles of Child Development and Learning:

1. All the domains of development and learning—physical, social and emotional, and cognitive—are important, and they are closely interrelated. Children's development and learning in one domain influence and are influenced by what takes place in other domains.
2. Many aspects of children's learning and development follow well documented sequences, with later abilities, skills, and knowledge building on those already acquired.
3. Development and learning proceed at varying rates from child to child, as well as at uneven rates across different areas of a child's individual functioning.
4. Development and learning result from a dynamic and continuous interaction of biological maturation and experience.
5. Early experiences have profound effects, both cumulative and delayed, on a child's development and learning; and optimal periods exist for certain types of development and learning to occur.
6. Development proceeds toward greater complexity, self-regulation, and symbolic or representational capacities.
7. Children develop best when they have secure, consistent relationships with responsive adults and opportunities for positive relationships with peers.
8. Development and learning occur in and are influenced by multiple social and cultural contexts.

9. Always mentally active in seeking to understand the world around them, children learn in a variety of ways; a wide range of teaching strategies and interactions are effective in supporting all these kinds of learning.
10. Play is an important vehicle for developing self-regulation as well as for promoting language, cognition, and social competence.
11. Development and learning advance when children are challenged to achieve at a level just beyond their current mastery, and also when they have many opportunities to practice newly acquired skills.
12. Children's experiences shape their motivation and approaches to learning, such as persistence, initiative, and flexibility; in turn, these dispositions and behaviors affect their learning and development

Based on the principles above, are arranged program that are considered effective enough to provide learning in children in a comprehensive manner. *Developmentally appropriate practice* is grounded both in the research on child development and learning and in the knowledge base regarding educational effectiveness in early care and education. (NAEYC, 2009).

Developmentally Appropriate Practice

NAEYC (2009) make a guidelines address decisions that early childhood professionals make in the five key (and interrelated) areas of practice: (1) creating a caring community of learners, (2) teaching to enhance development and learning, (3) planning curriculum to achieve important goals, (4) assessing children's development and learning, and (5) establishing reciprocal relationships with families.

1. Creating a caring community of learners. The foundation for the community is consistent, positive, caring relationships between the adults and children, among children, among teachers, and between teachers and families. It is the responsibility of all members of the learning community to consider and contribute to one another's well-being and learning.
2. Teaching to enhance development and learning. Developmentally appropriate

teaching practices provide an optimal balance of adult-guided and child-guided experiences. "*Adult-guided* experience proceeds primarily along the lines of the teacher's goals, but is also shaped by the children's active engagement; *child-guided* experience proceeds primarily along the lines of children's interests and actions, with strategic teacher support." But whether a learning experience is adult- or child-guided, in developmentally appropriate practice it is the teacher who takes responsibility for stimulating, directing, and supporting children's development and learning by providing the experiences that each child needs.

3. Planning curriculum to achieve important goals. In developmentally appropriate practice, the curriculum helps young children achieve goals that are developmentally and educationally significant. The curriculum does this through learning experiences (including play, small group, large group, interest centers, and routines) that reflect what is known about young children in general and about these children in particular, as well as about the sequences in which children acquire specific concepts, skills, and abilities, building on prior experiences.
4. Assessing children's development and learning. Assessment of children's development and learning is essential for teachers and programs in order to plan, implement, and evaluate the effectiveness of the classroom experiences they provide.
5. Establishing reciprocal relationships with families. Practice is not developmentally appropriate if the program limits "parent involvement" to scheduled events (valuable though these may be), or if the program/family relationship has a strong "parent education" orientation. Parents do not feel like partners in the relationship when staff members see themselves as having all the knowledge and insight about children and view parents as lacking such knowledge.

Florida department of Children And Families (2013) also introduce to understanding Developmentally Appropriate Practice (DAP) that focuses on children birth to eight years old and is made up of three principle components: age appropriateness, individual appropriateness and cultural appropriateness.

1. *Age appropriateness* means considering what is typical for a child within a given age group. Knowing the typical behaviors and growth patterns for certain age group is necessary to plan the most appropriate environments and activities to optimize the learning experience for children in your care.
2. *Individual appropriateness* means considering the needs of each child as a unique individual. A child's age temperament, personality and family history are all factors that affect their development.
3. *Cultural appropriateness* means considering the social and cultural contexts in which children grow and live. Caregivers should be intentional about planning learning experiences that are purposeful, challenging and achievable.

Traditional Games to Develop Local Culture

Kurniati (2006) stated that traditional plays are considered as high touch plays – plays with full social touch – that enable children to interact and to improve social experience to one another. Syaodih, et.al. (2006) also support that These traditional plays are proven to be very helpful in developing child's potential, such as gross motor, fine motor, social, cognitive, and other developmental aspects. In addition, interaction among children during the plays may enable them to develop their social, language, and emotional skill.

Catron & Allen (Musfiroh, 2005; Kurniati, 2016) argued that plays supported social development like:

1. Social interaction, ie interaction with peers, adults, and solve a conflict
2. Cooperation, ie the interaction of helping each other, sharing, and taking turns
3. Conserve resources, use and maintain the objects and the environment appropriately
4. Caring for others, such as understanding and accepting individual differences, understand multicultural issues

According to Ulker & Gu (Kurniati, 2016), Traditional plays are developmentally appropriate and they would be very advantageous when teaching academic subject. Roles and rules that are played in each game will reflect and guide them to understand

the important things in their environment. As propounded Dockett & Fleer (Kurniati, 2016) that within their play, children adopt roles and rules that have social and cultural base.

METHODS

This study, as a preliminary study, are trying to describe Rumah Pendidikan Asah Asih Asuh to develop local culture among children that join with this community. This study uses qualitative approach by conducting interviews with three Rumah Pendidikan Asah Asih Asuh initiators for data collection. And for secondary data, this study also use observation, group interview with parents, and also literature review.

- Interview with Mr. Guntur (1st initiator) on May 4, 2016 and May 16, 2016
- Interview with Ms. Effy (2nd initiator) on April 23, 2016 and May 11, 2016
- Interview with Mr. Zulfi (3rd initiator) on May 11, 2016 and May 16, 2016
- Observation from May 11, 2016 – June 15, 2016
- Group interview with parents on June 17, 2016

RESULT AND DISCUSSION

Based on interviews and observations found that the initiator makes this community non-profit. Operational funding is voluntary, some children free. Local cultural development activities carried out in the afternoon 5 times a week at 4pm to 6pm. Related to the development of local culture conducted at Rumah Pendidikan Asah Asih Asuh are:

1. Activities undertaken in the form of a group game which allows the interaction between the players intensively.
2. The division is not based on age group, but all the children involved. This allows games were more complicated can not be followed by children younger. However, with their age levels allow for cultural transformation. younger children will be taught the older of the rules of the game and they will supervise and guard the younger ones in order not wrong.
3. At the time children play traditional games, a variety of indicators appear related to the

development of social skills of children. such as taking turns to alternate roles, practice patience when it comes to perform the same role continuously losing, establish cohesiveness between one and the other.

4. Traditional games which conducted give a role to develop other aspects of development, such as motor skills, language, creativity, and emotion. interactions that arise when the game goes on unconsciously develop many aspects of development among other languages, where children will communicate both verbally and with gestures that they each understand its meaning.

Further observed also found that many traditional game using physical activity as the game that made them trained motor ability. Creativity comes when they have to determine a strategy to win. they will talk to each other emotionally that makes them more tolerant to accept another friend input and desires of others who proved the completion of the conflicts that arise during the game.

5. After the game, the facilitator will collect all to be given an explanation of the rules and the track of the game earlier. The facilitator will convey the relationship game with everyday life as related to cultural understanding and sensitivity tolerance in his explanation.

After more than a year they make this community, the results indicate that the initiators feels the children develop positively after join this community. They see that this community helps them gain tolerance to others.

Based on group interviews with parents found that they see that this community helps their children gain tolerance to others. The children also more polite and respect to their parents. But they feel the need to have the knowledge and skills regarding what they should do at home in order to balance the teaching conducted in the Rumah Pendidikan Asah Asih Asuh for optimal results. Parents also feel confused in educating at home related to the development of local culture.

Based on this research, we can know that the traditional game can be used as one method to develop local culture. However, it is understood some

of highlights to be discussed further. In implementing traditional play, several things need to be considered:

1. Plurality age of children. The wider range of ages it is increasingly difficult to do the type of game that will do optimal function. this is because the developmental tasks each period a different age. it definitely affects the types of games are used. therefore expected in the future to focus more on the group game according to period developments or age range.
2. Various kind of games. This type of game adjusted by the learning objectives. therefore it would be better if the first arranged learning modules so that more planned so it is more effective in transferring knowledge. In addition to select games appropriate developmental age will help them grow more optimally match development period tasks. Group games still needed to play because they still need interact with others. Also, traditional games known as a high touch games that develop many social aspect.
3. Feedback that fasilitator gives to internalize local value. fasilitator is an important factor related to the development of local culture. therefore the facilitators need to be equipped communication techniques so that the delivery that he did can be internalized to children. style that is attractive, examples are approaching their daily lives necessary for them to understand explanation of the fasilitator.

CONCLUSION

In order to develop local culture in Rumah Pendidikan Asah Asih Asuh, playing traditional games are still needed and can not be replaced by high technology gadget-based games. Playing traditional games is one form of social interaction are used to develop social skills who became one of the peculiarities of local culture in Indonesia. Family support also important to support the program. by inviting the family as part of the development of the children will get a more comprehensive learning experience so that the results would be be optimized.

ACKNOWLEDGEMENT

In this study, researchers focused only on one community. In the future, it is possible to discuss a

more diverse community that discovered methods which more effective in the development of local culture in Indonesia.

Related with Rumah Pendidikan Asah Asih Asuh, is expected Rumah Pendidikan Asah Asih Asuh make preparations more mature in the learning process conducted for the development of the local culture so that obtain maximum results in the future and also the development process more effective.

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THE NEXUS OF ECONOMIC ACTIVITIES AND ENVIRONMENTAL CONCERNS IN DEVELOPING COUNTRIES: A STUDY OF NIGERIA

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Abstract

Purpose-This paper examines the nexus of economic activities and the environment, exploring the validity of the Environmental Kuznets Curve (EKC) hypothesis for Nigeria, using deforestation as an indicator (explained variable) for environmental degradation, and four explanatory variables (economic growth, energy consumption, population and trade). **Design/methodology/approach** -The study applies the Autoregressive Distributed Lag (ARDL) bounds testing econometric approach to co- integration and the VECM-Granger causality test with time series data spanning from 1981–2013. **Findings**-The results from the analysis confirm the existence of co-integration among the variables. However, the increasing negative impact of economic growth on deforestation in the long-run invalidates the EKC hypothesis for deforestation in Nigeria. A bidirectional causal effect is detected between deforestation and economic growth and population validating the feedback hypothesis while energy consumption does not show any causality with deforestation. However, energy consumption, population and trade granger cause economic growth revealing the growth hypothesis. **Practical implications**-The variables under consideration show that they are dynamically interacted though economic growth degrades the environment both in the short and long run and invalidates the so-called EKC hypothesis. This implies that sustainable development can be achieved not only through economic progress but also through environmental vitality. **An originality/value-the contribution of this study**- Majority of studies on environment-growth tends to ignore deforestation as environmental degradation indicator in Nigeria. Few studies on EKC in Nigeria either based their works on CO₂ emission, NO₂ emission or Methane emission. The present study covers Nigeria as a whole and uses deforestation as an indicator of environmental degradation and a variety of econometric techniques to help policy makers proffer policies on how economic activities can be managed to sustain the environment.

Keywords: Economic activities, environment, deforestation, economic growth, energy consumption, Nigeria

INTRODUCTION

Ensuring environmental sustainability was the seventh goal of the United Nations Millennium Development Declaration which range from sanitation to clean air in the global atmosphere. This

declaration was made in September 2000 by world leaders at Millennium Summit which Nigeria was part of the summit (Rio+20, 2012). This was also extended as a new goal in the 2015 global development agenda known as Sustainable Development Goals (SDGs). However, economic

activity is inevitably environmentally disruptive in some way and satisfying the material needs of people requires the use and disturbance of energy flows and materials. All these components of environmental degradation are caused majorly as a result of economic activities by humans on the environment in order to eke a living (Riti, Dankumo & Gubak, 2015).

In recent years, environmental research is one of the most discussed topics among both physical and social scientists. As a consequence, economists in addition to professionals of other disciplines have developed a research group working extensively on globalization, energy and growth nexus and its adverse environmental repercussions. Among the indicators that simultaneously affect environmental quality, deforestation is also a growing concern for energy economists in regard to the use of energy resources to attain growth targets (Ahmed et al., 2015; Gangadharan and Valenzuela, 2001). The linkage between economic activities and the energy-growth nexus has been ignored because studies have been focused on advanced economies rather than in developing countries where there is strong evidence of this link. Therefore, this study aims at enhancing existing literature on economic activities, environment, and energy and growth networks to assess the environmental degradation of Nigeria.

During last few decades, Nigeria's economy has shown enormous growth and future growth potential which is evident in the recent GDP rebasing that now puts it as the largest economy in Africa and the 26th largest in the world (Amao et al., 2015). It has continuously benefited from globalization with the opening of trade, resulting in a higher energy demand. However, this economic progression has many challenges; one of these challenges is the negative environmental impacts of growth. Nigeria's economy relies heavily on agriculture apart from oil, and increasing urbanization, the increasing need for agriculture land and a higher population rate are causing deforestation in the country. For this reason, Nigeria has a high rate of deforestation. The rate at which Nigeria's forests resources are depleting is alarming. This deliberate removal of forest to create new agricultural land and/or for other purposes deprive her of the wealth of diversity and the potential use of many of their unique biological compounds often of great medical value. Currently,

Nigeria has one of the world's highest deforestation rates of primary forests according to revised deforestation figures from the Food and Agriculture Organization of the United Nations (FAO, 2005). Between 2000 and 2005, the country lost 55.7% of its primary forests, and the rate of forest change increased by 31.2% to 3.12% per annum. The forest has been cleared for logging, timber export, subsistence agriculture and notably the collection of wood for fuel which remains problematic in Nigeria. This deforestation may prevent Nigeria from complying with one of the World Bank's Sustainable Development Goals that requires an increase in forest area from 2.5% to 6% by 2015. Nigeria has also faced extreme natural disasters in recent years due to environmental degradation. In general, Environmental indices in Nigeria are not encouraging ones, they are alarming in terms of negativity. Environmental Performance Index (EPI) 2012 ranks Nigeria 119 out of 132 countries leaving Nigeria only better than Eritrea and South Africa in the sub-Saharan region of Africa. The International Human Development Index (HDI) sustainability indicators in relation to Nigeria which includes carbon dioxide emission per capita is 0.6(tons); the population living on degraded land is 11.5% and change in forest area 1990/2010 is -47.5% (UNDP, 2012). There were consecutive floods observed in 2011 and 2013, and it is projected that such natural calamities will be more frequent in coming years. The changing environmental conditions due to industrialization, urbanization, population increase and an increase in agriculture land have consequently increased the risk to the natural environment and the biodiversity of Nigeria. It is argued that if extensive research is not conducted, the key factors will not be identified for the restoration of environmental quality.

Forests are a key source of biodiversity, and controlling the negative impacts of economic activities on the environment helps protect their livelihood and reduce flood damage. The proposed causes of this environmental degradation (deforestation) are economic activities of globalization, urbanization, overgrazing, farming methods, the use of wood as a major source of energy in rural areas and global warming. The increasing rate of deforestation is also considered to be the primary source of a temperature increase water flow over the land's surface, as rain falls directly to the ground are

no longer being impeded by the vegetational cover. This practice may lead to an increase in the magnitude and frequency of flooding, soil erosion increased sediment loads in rivers, slopes instability, and degradation of adjacent lands. Thus, these factors necessitate the inclusion of deforestation as an environmental degradation indicator in this study.

This study investigates the relationship between economic activities, energy consumption and the environment in relation to Nigeria economy. The concept is relevant for economic development that is not based just on physical development but also development on the quality of life by managing the global commons. The study seeks to answer the following questions: What is the relationship between economic activities and environmental sustainability? Does the inverted U-shape environment and growth relationship otherwise known as the Environmental Kuznets Curve (EKC) exist in Nigeria? Can economic activities be managed to sustain the environment? This study utilizes the most appropriate econometric technique: the ARDL bounds testing approach to co-integration and VECM Granger causality tests. The study does not only offer new insight on environmental sustainability literature but also growth sustainability as the results provide key policy control instruments for both governments, international agencies, and stakeholders alike.

REVIEW OF LITERATURE

The genesis of the EKC started as a result of Simon Kuznets study of the relationship between long-run income growth and income inequality. He proposed that at the early stage of income growth, inequality rises but after a certain threshold, income inequality starts to diminish, producing an inverted U-shaped curve. The relationship between environmental degradation and per capita income has attracted much attention in the literature during the last two decades. In the early 1990s, some contemporaneous studies found that several indices of air and water pollution first increase and then decrease as per capita income grows (Panayotou, 1993; Shafik, 1994; Selden and Song, 1994; and Grossman and Krueger, 1994). This “bell-shaped” relationship was called environmental Kuznets curve after Simon Kuznets (Kuznets, 1955) who was the first to observe a similar relationship between inequality and per capita income (the so-

called Kuznets curve). The literature on the environmental Kuznets curve (otherwise abbreviated as EKC) has grown exponentially in the last few years (Dasgupta et al., 2001). Behind the hypothesis of Environmental Kuznets Curve (EKC) is the argument that environmental quality will be derived by reaching high levels of economic growth, although, in the first stages of development, the environment will be deteriorated, there will be the turning point after which the environmental quality will improve.

One of the explanations that Grossman and Krueger (1995) give to the negative slope of the curve is that countries that are experiencing a growth pattern after having reached a turning point, have adequate income to buy products that are more energy efficient and would export pollution intensive to other countries that cannot produce them. In this case, it is assumed that rich countries are going to export these products to poor economies, but if all countries try to embark on the growth process, the remaining countries will not allow others, even poorer countries to export the pollution-intensive products when they want to develop

Although numerous empirical studies have tested the environmental Kuznets curve model, the typical approach has been to regress cross-country measures of ambient air and water quality on various specifications of income per capita. Empirical researchers are far from agreement that the environmental Kuznets curve provides a good fit to the available data, even for conventional pollutants. In one of the most comprehensive reviews of the empirical literature, Stern and Common (2001) argues that the evidence for the inverted-U relationship applies only to a subset of environmental measures; for example, air pollutants such as suspended particulates and sulfur dioxide. Since Grossman and Krueger (1993) find that suspended particulates decline monotonically with income, even Stern's subset is open to contest. In related work, Stern et al. (1998) find that sulfur emissions increase through the existing income range. Results for water pollution are similarly mixed.

In addition to other indicators, deforestation has been used to determine environmental impacts. Studies showing the negative impact of deforestation in

conjunction with an increase in temperature, extreme weather occurrences, loss of biodiversity, land erosion, infectious diseases and increasing greenhouse gases emissions are by Henderson and Gomitz (1984); Fearnside (1992); Shukla and Parikh (1992); Henderson and Venkatraman (1993); Shafik (1994); Zeng et al. (1996); Fearnside (1997); Rustad et al. (2000); Dickinson (2003) respectively. Another study was undertaken by Bhattarai and Hammig, (2001), who used data from 66 countries from Asia, Africa, and Latin America and found strong evidence of a relationship between deforestation and income across the three continents. Other studies on this topic include Panayotou, 2003; Copeland and Taylor, 2003; Culas, 2007, DeFries et al. (2010), Rudel (2013), Shahbaz et al. (2013b), Shahbaz et al. (2013c), and Ahmed (2014). However, studies that investigated the causal relationship between various environmental and growth indicators especially in Nigeria, Omisakin (2009); Apan and Chuku (2011), Ayadi (2010) ignored deforestation. These few studies on EKC in Nigeria such as Onafowora & Owoye (2014); Akpan & Chuku (2011) either based their works on CO₂ emission, NO₂ emission or Methane emission. The present study covers Nigeria as a whole and uses deforestation as an indicator of environmental degradation, time series data set and a variety of econometric techniques. This study reveals a wide range of research implications that will help Nigeria to strengthen its environmental policy and its attitude towards the economy and the environment. Previous studies of the EKC hypothesis have focused on a cross-country analysis of large sets of countries, but our study is uniquely designed to investigate a single country (Nigeria). This will test both the impact of growth on the environment and the existence of the EKC for deforestation in Nigeria. This research uses the bound test co-integration to analyze for the nexus of economic activities, and environmental sustainability testing the existence of EKC hypothesis for deforestation in Nigeria and a Granger causality test between growth proxied by the output of economic activities, energy consumption and environmental degradation proxied by deforestation instead of the usual emission by other scholars. Therefore, there is immense need for single-country analyzes to create strategic policies that consider growth and environmental quality.

Economic indicators and environmental impacts in Nigeria

Table 1.0 helps to illustrate the situation that is obtainable in environmental resources market failures. Comprising four sections- B1, B2, B3, and B4- each measure the impact of economic activity with its environmental cost or degradation. From section B1 in table 1.0, forestry share in real GDP (%) is compared with forest growth stock to measure the depletion of forest resources as a result of economic activity in the forestry industry in Nigeria economy. The table shows that where forest contributed highest to GDP in the year 2000, the corresponding 2.10 square kilometer forest land cover was depleted in Nigeria. Thus, a high economic activity resulted in an inevitable environmental destruction. Also, as the share decline, the rate of depletion of Nigeria forest resources also reduce from -2.1-sq.km in 2000 to -1.80sq.km in 2010.

Another impact between real GDP growth rate and the CO₂ emissions per GDP in kilogram is observed in section B2 of table 1.0. It shows there is more impact on climate change when the income increases in Nigeria economy. The trend in this section shows that with the lowest growth rate of real GDP within the years covered; 4.63% in 2002 the CO₂ emissions per GDP were at its smallest also in the same year (i.e. 37.80kg). The time series data had shown the impact of economic activity on the quality of Nigeria climate because emissions of CO₂ per GDP growth rates are directly related.

Furthermore, section B3 shows a direct relationship between the electricity sub-sector share in GDP (%) and carbon dioxide emissions from electricity-heat per kWh (CO₂ kWh). In 2001 when the percentage share electricity of Nigeria GDP increase from 0.30% in 2000 to 3.30% the CO₂ kWh also increase from 11.70g to 12.5g within the same period, conversely when the share of electricity reduces from 3.50% in 2005 to 3.40 in 2006; CO₂kWh also reduce from 11.2g to 9.9g in the same period.

Table 1 : Four economic indicators and their respective environmental impacts compared

	B1	B2	B3	B4				
Year	Forest Shares in GDP ¹ (%)	Forest Growth Stock (sq)	GDP Growth Rate (%)	CO ₂ /GDP ² (kg)	Electricity Share in GDP (%)	CO ₂ /kWh ³	Oil Refining Share in GDP (%)	SO ₂ /GDP ⁴ (kg)
2000	0.78	-2.10	4.89	43.30	0.30	11.70	0.06	26.10
2001	0.73	-2.10	4.72	41.30	3.30	12.50	0.16	28.90
2002	0.61	-2.00	4.63	37.80	3.10	11.50	0.12	35.00
2003	0.55	-2.00	9.57	42.30	3.30	12.30	0.12	39.30
2004	0.54	-2.00	6.58	44.80	3.50	11.10	0.12	45.50
2005	0.53	-2.00	6.51	44.70	3.50	11.20	0.12	53.60
2006	0.53	-1.90	6.03	48.00	3.40	9.90	0.13	53.60
2007	0.53	-1.90	6.45	50.40	3.40	9.50	0.13	53.60
2008	0.53	-1.90	6.41	49.20	3.30	9.90	0.14	53.60
2009	0.52	-1.80	7.00	57.60	3.20	9.60	0.14	53.60
2010	0.52	-1.80	7.90	57.60	3.00	9.60	0.14	53.60
2011	0.51	n.a ⁵	7.43	60.00	2.90	n.a	0.13	n.a
2012	0.50	0.00	6.58	57.60	2.79	9.55	0.13	53.64

Key : ¹GDP at 1990 constant basic prices, ²carbon dioxide (CO₂) emissions per GDP in kg, ³carbon dioxide (CO₂) emissions per electricity generation per kilowatt-hour (kWh), ⁴Sulfur dioxide (SO₂) emissions per GDP, ⁵Not available. **Source:** (i) CBN, (2013, December) Statistical Bulletin. Vol. 19. Abuja; (ii) NBS; 2013; and (iii) EPI 2000-2012.

Finally, the last section shows the percentage share of oil refining in the real GDP of Nigeria economy and sulfur dioxide emissions per GDP measure in grammes (SO₂/ GDP). Oil refining sub-sector of manufacturing industry in Nigeria economy and has a steady growth in term of its percentage share within the observed years except in 2011 and 2012. The SO₂/GDP in these periods also increases continuously even with reduction in oil refining in terms of percentage share of GDP.

MATERIALS AND METHODS

This section deals with appropriate econometric model, which theoretically established the relationship between variables of interest, are specified and used to practically demonstrate the relationship between economic activities (GDP), energy consumption, and the environment (deforestation). Generally, previous studies have used carbon dioxide as the indicator of environmental degradation. The present study uses deforestation as the measure of environmental degradation. The hypothetic analysis of deforestation and growth indicators has mainly been focused on cross-country

and panel data approaches but the present study uses a single-country analysis. Data used in the paper are from the World Development Indicator (WDI 2013-CDROM). The study period covers 1981 to 2013. Deforestation is measured as forest loss due to economic activities. Energy consumption (ENE) is measured as a percentage total energy used. Economic growth is proxied by the growth in real GDP, and POP refers to total population growth. To establish long run relation among the variables the study implements ARDL bounds testing approach to co-integration (Pesaran et al. 2001). This procedure has several advantages. Apart from the desirable small sample properties, ARDL can be applied irrespective of the order of integration, i.e., I(0), or I(1). A dynamic error correction model (ECM) can be derived from a simple linear transformation of a modified ARDL model which integrates the short-run dynamics with the long-run equilibrium without loss of any long-run information. The following is the mathematical postulation of the model that is used to test the existence of the EKC for deforestation in Nigeria.

$$Y_t = \alpha + \beta_0 X_t + \beta_1 X_{t-1} + \beta_2 X_{t-2} + \dots + \beta_k X_{t-k} + \mu_t \dots \dots \dots (1)$$

Where Y is assuming to be the dependent variable, Xs are the independent variables while β s are the estimated parameters and μ is the white noise error term.

The model is transformed the by investigating variables in a log linear functional form, as stated below:

$$\ln DEF_t = \alpha_0 + \alpha_1 \ln ENE_t + \alpha_2 \ln GDP_t + \alpha_3 \ln POP_t + \alpha_4 \ln TRA_t + \xi_t \dots \dots \dots (2)$$

Where

DEF = deforestation

ENE = Energy consumption

POP = Population growth

TRA = Trade openness

ξ = the error term of equation (1)

Table 2: Expected signs of the variables

Variable	Expected Sign
ENEt	The expected sign, $\alpha_1 > 0$ if wood is used as a fuel to meet energy demand, otherwise $\alpha_1 < 0$.
GDPt	The expected sign, $\alpha_2 > 0$. This is because GDP may impact deforestation positively via industrialization, Agriculture growth and urbanization and trade.
POPt	The expected sign $\alpha_3 > 0$. A rise in population increases the demand for new houses in both rural and urban areas. This leads to deforestation.
TRA	If wood is used as a major source of trade, then $\alpha_4 > 0$, otherwise $\alpha_4 < 0$.

The ARDL approach involves estimating the following conditional error correction version of the model.

$$\Delta y = \lambda_1 + \lambda_2 y_{t-1} + \lambda_3 Z_{t-1} + \lambda_4 x_{t-1} + \sum_{i=1}^p \gamma_i \Delta y_{t-i} + \sum_{j=0}^p \beta_j \Delta x_{t-j} + \sum_{s=0}^p \omega_s \Delta z_{t-s} + \mu_t \dots \dots \dots (3)$$

Where λ_t is a drift component and μ_t represents a white noise error processes. The ARDL approach estimates $(p+1)^k$ number of regressions in order to obtain optimal lag length for each variable, where p refers to the maximum number of lags used; and k to the number of variables in Equation (3). The optimal lag structure for the regression is selected by the Aikake Information Criterion (AIC) to eliminate serial correlation (Engle and Granger, (1987). Following Pesaran et al. (2001), two separate statistics are employed to test for the existence of long-run relationship and *F-test* for the joint

significance of the coefficients of lagged levels in Equation-3. Two asymptotic critical bounds are used to test for co-integration when the independent variables are I(d). The lower value is used if the regressors are I(0), and the upper value for I(1) regressors. If the F-statistic exceeds the upper limit of the critical value, a long run relationship exists regardless of the order of integration, I(0) or I(1). If the F-statistic falls below the lower critical values, the null hypothesis of no cointegration is sustained. However, if the statistic falls between these two bounds, inference would be inconclusive. When the order of integration among the variables is known,

and if all of them are I(1), then the decision is made based on the upper bound. Similarly, if all the variables are I(0), then the decision is made based on the lower bound. If variables are cointegrated, the

conditional long run model can be obtained from the reduced form solution of Equation (3) and the variables in their first difference are jointly equal to zero, i.e. $\Delta x = \Delta y = \Delta z = 0$. Thus,

$$y_t = \partial_0 + \partial_2 x_t + \partial_3 z_t + v_t \dots \dots \dots (4)$$

Where $\partial_0 = -\lambda_1/\lambda_2$; $\partial_2 = \lambda_3/\lambda_2$; $\partial_3 = \lambda_4/\lambda_2$ and

equation (3) are estimated by OLS. If cointegration exists among the variables, then the error correction model can be represented by the following reduced form equations.

v_t is the random error. The long run coefficients in

$$\Delta y_t = \sum_{i=1}^p \lambda_i \Delta y_{t-i} + \sum_{j=1}^m \beta_j \Delta x_{t-j} + \sum_{k=1}^n \beta_k \Delta z_{t-k} + \eta ECT_{t-1} + \omega_t \dots \dots \dots (5)$$

$$\Delta LDEF = \partial_0 + \partial_{ENE} \Delta ENE + \partial_{GDP} \Delta GDP + \partial_{GDP} \Delta GDP + \partial_{POP} \Delta POP + \partial_{TRA} \Delta TRA + \eta ECM_{t-1} + \omega_t \dots \dots (6)$$

Goodness of fit of the ARDL model, diagnostic and stability test are conducted to assess serial correlation, functional form, normality and heteroscedasticity associated with the model.

significance. The null hypothesis is that unit root problem exists, that is, $\partial_1 = \partial_2 = \partial_3 = \partial_4 = \partial_5 = 1$ against the alternative hypothesis that there exists no unit root problem that is, $\partial_1 = \partial_2 = \partial_3 = \partial_4 = \partial_5 < 1$. The results show that all variables are integrated of orders one. This implies that the series are non-stationary at levels but are stationary at first difference [I(1)]

The stability test is conducted using the cumulative sum of recursive residuals (CUSUM) and the cumulative sum of squares of recursive residuals (CUSUMsq). In addition, the Chow forecast test is used to examine the reliability of ARDL model.

Time series properties of data

Furthermore, the Granger causality test is applied to test the relationship between deforestation, energy consumption, economic growth, population growth, and trade. Causal link among the series is examined by applying the Granger procedure within the VECM. Existence of co-integration implies the existence of causal link in at least one direction. Engle-Granger (1987) cautioned against using the Granger causality test in first difference through vector auto regression (VAR) method due to the possibility of misleading results in the presence of co-integration. The inclusion of an error-correction term helps to capture the long run relationship. The Granger causality test is augmented by an error-correction term which is formulated as a bi-variate p th order vector error-correction model (VECM) as follows:

Prior to employing the ARDL cointegration approach, it may be useful to test the order of integration of each series by applying the ADF, PP and KPSS procedure. The results in Table 1 suggest non-stationarity at level (unit root); but difference stationary (no unit root, I(1)). The purpose is to determine the order of integration because the (ARDL) bounds testing approach to cointegration becomes applicable only in the presence of I(0) or I(1) variables, that is, being stationary/integrated at the level form or at first difference. Thus, the assumption of bounds testing will collapse in the presence of I (2) variable (Narayan, 2004; Narayan, 2005; Narayan et al., 2008).

The study conducts unit root tests on the variables included in the regression by employing the ADF, PP and KPSS tests at 1%, 5% and 10% levels of

$$\begin{pmatrix} \Delta LDEF \\ \Delta LENE \\ \Delta LGDP \\ \Delta LPOP \\ \Delta LTRA \end{pmatrix} = \begin{pmatrix} K_1 \\ K_2 \\ K_3 \\ K_4 \\ K_5 \end{pmatrix} + \sum_{i=1}^p \begin{pmatrix} d_{11} & \dots & d_{1n} \\ \vdots & \vdots & \vdots \\ d_{m1} & \dots & a_{mn} \end{pmatrix} + \begin{pmatrix} \delta_1 ECM_{t-1} \\ \delta_2 ECM_{t-1} \\ \delta_3 ECM_{t-1} \\ \delta_4 ECM_{t-1} \\ \delta_5 ECM_{t-1} \end{pmatrix} + \begin{pmatrix} C_1 \\ C_2 \\ C_3 \\ C_4 \\ C_5 \end{pmatrix} + \begin{pmatrix} \eta_1 \\ \eta_2 \\ \eta_3 \\ \eta_4 \\ \eta_5 \end{pmatrix} \dots\dots\dots (7)$$

Where, Δ is a difference operator, ECM represents the error-correction term derived from long run co-integrating relationship via ARDL model; C_i ($i = 1 \dots 5$) are constants; and η_i ($i = 1 \dots 5$) are serially uncorrelated random error terms with zero mean. The VECM provides directions for Granger causality. Long-run causality is captured by a significant lagged ECM terms, using t test, while F-statistic or Wald test captures short run causality.

Following this analysis, the stability of the model is also checked through diagnostic tests (i.e., normality test for residual terms, ARCH test and LM test for serial correlation).

RESULTS AND DISCUSSION

Time series properties of data (unit root test)

The time series properties of deforestation, economic growth, energy consumption, population and trade are explained in Table 3 and figure 1.

Table 3 Unit root estimation

Variable	ADF-statistic	PP-statistic	KPSS-statistic
InTRAt	-2.6724	-2.5961	0.1295
Δ InTRAt	-5.4267*	-7.0539*	0.4070*
INPOPt	-3.5147	-1.7788	0.0573
Δ InPOPt	-3.7071**	-3.8137**	0.1880**
InGDPt	-5.2226*	-5.2407*	0.0770
Δ InGDPt	-8.1553*	-24.3916*	0.3493*
InENEt	-3.2817	-3.4756	0.0971
Δ InENEt	-7.4328*	-7.9390*	0.5432*
InDEFt	-2.0130	7.0096	0.1945
Δ InDEFt	-5.3623*	-10.0115*	0.2016**

Note: ***, ** and * denote the significant at the 1, 5 and 10 per cent level, respectively. The optimal lag order for ADF test is determined by AIC, while the bandwidths for PP and KPSS tests are determined by using the Newey-West Bartlett kernel.

The research utilizes the traditional unit tests (ADF and PP) and KPSS to check the order of integration among the variables. The results are provided in Table 3. The statistical values suggest that all the variables have a unit root problem level with intercept and trend except GDP that is stationary at levels. After the first difference, those variables that are not stationary became stationary. This notion further

enumerates that GDP is $I(0)$ while the remaining series are integrated at order one in the presence of structural breaks and trends. The nonstationary problem arises in unit root tests due to trends and structural breaks and further leads to weak predicting power and misleading results. This indicates that a unique order of integration is established for the variables (see figure 1).

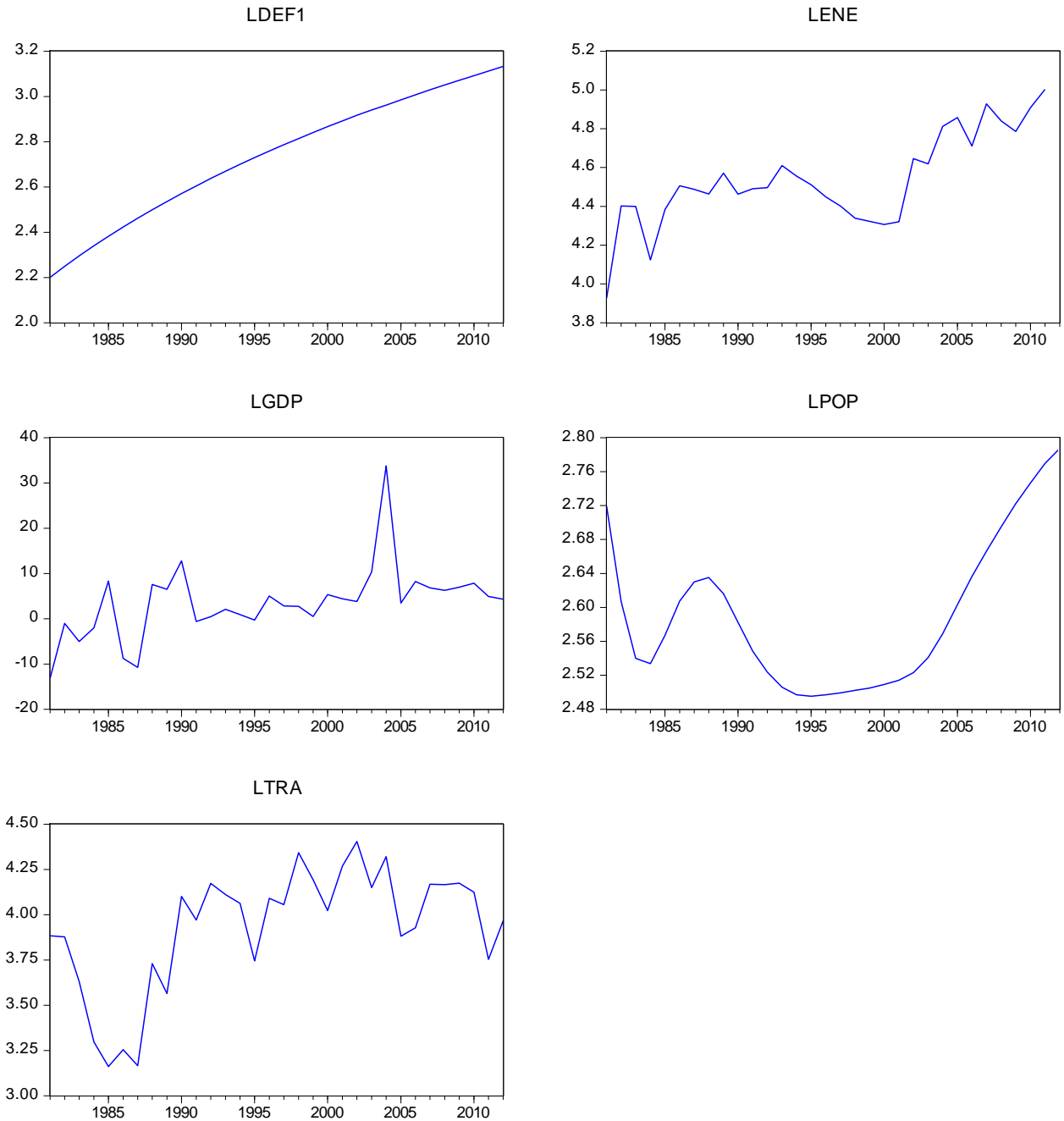


Figure1: Plots of Variablesⁱ

Figure 1 shows the trend of variables in their logarithm form from 1981 to 2013. The vertical axes indicate the variables measured in different unit but converted to logarithm forms to bring them to the same base or unit. The trends of the variables include deforestation, energy consumption, GDP per capita, Population and trade. The graphs exhibit trends and structural breaks.

Co integration test

After passing through the unit root test, the next stage is to check the long-run relationship among the variables using a co-integration approach. For this purpose, the study chooses to apply the ARDL bounds testing approach to co-integration (Pesaran et al., 2001). It is the pre-requisite to choose an appropriate lag length before proceeding to the ARDL co-integration test. Moreover, the selection of

lag length should be performed carefully because an inappropriate lag length may lead to biased results and is not acceptable for policy analysis. Therefore, to ensure that the lag length was selected appropriately, the study uses the Akaike information

criterion (AIC) that helps to identify pertinent lag length. The AIC criterion provides dynamic results and has exceptional properties compared to the Schwartz Bayesian criteria (SBC). The results are reported in Table 4.

Table 4 : Lag length selection-order criteria

Lag	L	LR	Df	P	FPE	AIC	HQIC	SBIC
0	-31.365	NA	25	0.0000	8.45e-06	2.5079	2.581	2.7437
1	209.1136	381.4504	25	0.0000	3.06e-12	-12.3526	-11.9096	-10.9382
2	264.1705	68.3464	25	0.0000	4.56e-13*	-14.4255*	-13.6134*	-11.8324*

Endogeneous: InDEft, InENEt, InGDpT, InPOPt, InTRA

Exogeneous: Constant

Note: * indicates lag selection by the criteria

The selection criteria result shows that the whole criteria selected lag 2. The likelihood ratio, the final prediction error, the Akaike information, the Schwarz and Hannan Quin information criteria selected lag 2 as shown by the asterisk at the 0.05 significance level.

The ARDL bounds testing result is shown in Table 5. The calculated F-statistics of all underlined variables (i.e., deforestation, economic growth, population, and trade) fall outside the critical bounds at the 1 and 5

percent levels of significance. The exception is energy consumption, which is at level. This result shows that there are four co-integrating vectors and confirms the presence of a long-run relationship between the variables over the period of 1981–2013. In all cases, the calculated F-statistics are greater than the 1 percent upper bound critical values provided by Pesaran, et al. (2001). Therefore, the null hypothesis of no co-integration can be rejected, implying that a long-run equilibrium relationship exists between deforestation, energy consumption, economic growth, population density and trade in Nigeria.

Table 5: Statistical output of ARDL co integration

Bounds testing to co integration		Diagnostic tests					
	Optimal Lag	F-statistics	X ² Normal	X ² ARCH	X ² Reset	X ² Serial	
F _{DEF} (DEF/ENE,GDP,POP,TRA	2, 2, 2, 1, 0	7.0498	2.3285	[1]0.0243	[1]1.2386	[2]1.7443	
F _{ENE} (ENE/DEF,GDP,POP,TRA	3,1, 2, 1, 2	3.8574	1.7983	[1]1.8565	[1]2.0976	[2]2.9920	
F _{GDP} (GDP/DEF,ENE,POP,TRA	4, 2, 1, 2, 0	72.8862	2.5166	[1]1.3637	[1]1.1464	[2]1.5904	
F _{POP} (POP/DEF,ENE,GDP,TRA	2, 2, 1, 2, 2	7.3742	0.9568	[1]0.0002	[1]1.1867	[2]2.7049	
F _{TRA} (TRA/DEF,ENE,GDP,POP	3, 1, 2, 1, 2	13.0946	0.8957	[1]0.0011	[1]0.6709	[2]1.8149	
Critical values (T=32) [#]							
Significant Level	Lower bounds (0)	Upper bounds (1)					
1 Percent	4.40	5.72					
5 percent	3.89	5.07					
10 percent	3.03	4.06					

Note: The asterisks ***, ** and * denote the significant at 1, 5 and 10 per cent levels, respectively. The optimal lag length is determined by AIC. [] is the order of diagnostic tests. # Critical values are collected from Pesaran et al (2001).ⁱⁱ

¹ The underlying ARDL indicates four co-integrating equations. F-statistic of the underlying ARDL are greater than the upper bound critical value except energy consumption equation

To further consolidate on the co-integration nature of the variables, the study carried out a residual unit root test for co-integration. The null hypothesis of unit root is tested against the alternative hypothesis of no unit root. The result is presented in table 6.

Table 6: Residual ADF test for co integration

Variable	None	Constant	Constant & Trend	Conclusion
Residual/	t-obs	t-obs	t-obs	OI Lag
Error	-	-	-	I(0) [1]
Term	3.166*	3.1051**	3.8093**	

* and ** indicate significance at the 1 and 5 percent level, respectively.

The stationarity of the residuals obtained from the co integration regression of the dependent variables (DEft) on the independent variables (ENEt, GDpT, POPt, and TRAt) is tested using the ADF test. Based on the result shown in Table 6 the null hypothesis of the presence of unit root in the residual is rejected. The result reveals that the residual is stationary at the 0.05 significance level and further confirms the presence of cointegration among the variables. The test includes none, intercept, trend and intercept.

Estimation of parameters

Having examined the existence of cointegration between the variables, the long-run and short-run analysis is conducted (Table 7). In the short-run, energy consumption and population add to the level of environmental degradation (deforestation) at the 1 percent level of significance. However, economic growth and population impact deforestation negatively in the short run in Nigeria. In the long run, energy consumption, economic growth, and trade impact deforestation positively while population turns out to have a negative impact on deforestation. The positive effect of economic growth, energy consumption and trade increased in the long-run. This notion does not confirm the existence of the EKC hypothesis, which states that economic growth first deteriorates environmental quality, but after the

attainment of a certain threshold growth level, growth offsets that effect and environmental quality improves, creating an inverted U-shaped relationship between the underlying variables of economic growth and the environment. This result shows that Nigeria has not reached the threshold growth point of EKC to offsets that effect for environmental quality to improve in the long run. This further buttresses the fact that Nigerian environmental laws lack concrete national legislation dealing specifically with the ever-increasing environmental degradation. Prior to June 1988, Nigeria responded to most environmental problems on an ad hoc basis along with continued economic reform to keep the economy growing with fewer impacts on environmental degradation. Environmental legislative provisions in existence at the time were enacted in direct response to problems associated with the newly industrializing economy and the discovery and processing of oil. Federal Environmental Protection Agency (FEPA) was established to control the Nigerian Environment, its resources exploitation, and management. But field observation revealed that environmental degradation is growing at a rate worse than the pre-FEPA period (Omofonmwan & Osa-Edoh, 2008). During that time, growth indicators were also improving, energy consumption, particularly from the traditional wood and fossil fuels, increased while population density in urban areas also increased. Electricity consumption reached a new peak, and the demand for energy in both household and industrial sectors was elevated. During all of these reforms and economy-wide growth, some environmental indicators were exploited. The contribution of forest stock to GDP continues to decrease while the loss of forest increases (Table 1).

Table 7 The parsimonious model (Long-run and short-run analysis)

Dependent variable = $\Delta \ln \text{DEF}_t$								
Variables	Coefficient	Coefficient	Std error	Std error	t-statistic	t-statistic	Prob.	Prob.
	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run
Constant	0.0046*	-1.6570	0.0007	0.9798	6.6022	-1.6911	0.0000	0.1028
$\ln \text{ENEt}$	0.0005	0.6922*	0.0008	0.1530	0.6252	4.5217	0.5435	0.0001
$\ln \text{GDPt}$	-0.0045*	0.0012*	0.0010	0.0004	-3.7751	3.2878	0.0026	0.0002
$\ln \text{POPt}$	0.0533	0.0603	0.0303	0.3938	1.7567	0.1530	0.1044	0.8795
$\ln \text{TRAt}$	-0.0014*	0.3542*	0.0005	0.0896	-2.7466	3.9509	0.0177	0.0005
$\text{ECT}(-1)$	-0.0235*	-	0.0087	-	-2.6930	-	0.0167	-
R^2	= 0.9984							
$R^2 \text{Adj}$	= 0.9967							
F-statistic	= 567.0176							

Note: *, ** and *** indicate significance of the variables at 1, 5 and 10 percent significance levelⁱⁱⁱ

An increase in economic growth by 1% decreases deforestation by 0.0005%, and in the long-run, if growth continues, the effect increases to 0.0012%. Similarly, in the short-run, a 1% increase in the explanatory variables of energy consumption and population contribute 0.0005% and 0.0533%, respectively to deforestation, and, in the long-run, energy consumption increases deforestation by 0.69220% while population increases deforestation by 0.0603%. In contrast, trade also shows a dramatic change from negative in the short run to positive in the long run. An increase in trade by 1% decreases deforestation by 0.0014% in the short run, and in the long run, environmental quality decreases by 0.35420%. Our results show that there is a dramatic change in the impacts of energy consumption and trade on environmental quality in Nigeria. This is due to the economic liberalization policies that encourage trade while the consumption of fuel woods increased substantially over the years. Our results are in line with the findings of Riti and Shu (2016); Akpan (2012; Ojewumi (2015); Alege and Ogundipe (2013) in terms of the economic non-existence of EKC in Nigeria. The results are also consistent with some related works of developing economies outside

Nigeria such as Harbaugh et al., (2002); Copeland and Taylor (2003); Peters et al. (2011); Ahmed and Long (2013a) and Qazi et al. (2012), especially on growth and environmental degradation in terms of the effect of growth, energy, urbanization and trade effect on environmental degradation, respectively. However, the results are inconsistent with the findings of Akpan and Chuku (2011), Omisakin (2009) especially on the relationship of growth-environmental degradation.

VECM Granger causality test result

The results of the long-run and short-run analyses confirm the relationship among the variables and invalidate the EKC hypothesis but ignore the cause and effect connection. Therefore, the study uses the VECM Granger causality test, which detects the direction of causality among underlined dependent and independent variables. The Granger causality test is an essential econometric technique that unveils causation among various vectors and possesses both long-term and short-term policy implications. The results of the VECM Granger causality analysis are reported in Table 8.

Table 8 The result of Granger causality test

Variable	Direction of Granger Causality					
	Short-run					Long-run
	Likelihood Ratio (LR) statistics					t-statistics
	$\sum \Delta \ln \text{DEF}_t - i$	$\sum \ln \Delta \text{ENET}_t - i$	$\sum \ln \Delta \text{GDPT}_t - i$	$\sum \ln \Delta \text{POPT}_t - i$	$\sum \ln \Delta \text{TRAT}_t - i$	ECT(-1)
$\Delta \ln \text{DEF}_t$	-	0.4181 [0.6827]	21.3380* [0.0000]	4.4438* [0.0233]	0.6988 [0.4961]	-0.0280** [-2.6930]
$\Delta \ln \text{ENET}_t$	0.2229 [0.9145]	-	4.6487* [0.0003]	3.7767* [0.0378]	1.5057 [0.2557]	-0.8475** [-2.7867]
$\Delta \ln \text{GDPT}_t$	7.1441* [0.0081]	1.8956*** [0.0805]	-	2.0127*** [0.0653]	2.2598** [0.0403]	-0.3498* [-8.1126]
$\Delta \ln \text{POPT}_t$	5.3583* [0.0090]	1.9182. [0.1862]	15.1365* [0.0001]	-	4.2383** [0.0251]	-0.0580** [-2.5557]
$\Delta \ln \text{TRAT}_t$	0.9220 [0.3733]	3.7351* [0.0390]	4.7345* [0.1364]	6.8651* [0.0092]	-	-0.0154** [-2.2697]

Note: The asterisks ***, ** and * denote the significance at the 1, 5 and 10 per cent level, respectively.^{iv}

The short-run and long-run causality analyses are both tested. In the short-run, there is a bidirectional causal effect is detected between economic growth, population, and deforestation revealing the feedback hypothesis. In contrast, no causality is detected between energy consumption, trade and deforestation in Nigeria validating neutrality hypothesis. In addition, uni-directional causality runs from population to energy consumption while a two-way causality exists between GDP and energy. GDP and population, GDP and trade, population and trade also display bi-directional causalities. In the long run, all the variables exhibit causal relationships. However, in terms of the growth and environmental degradation

nexus, initially growth indicators (economic growth, trade openness, energy use) deteriorate the environmental degradation indicator (deforestation), still in the long-run path, environmental quality is not favored.

Diagnostic and stability test

To conclude the study, the model is diagnosed for stability using the sensitivity analysis of the cumulative sum of recursive residual (CUSUM) and the cumulative sum of square of recursive residual (CUSUMsq) tests reported by Brown et al. (1975). The result of both the CUSUM and the CUSUMsq are shown in figure 2.

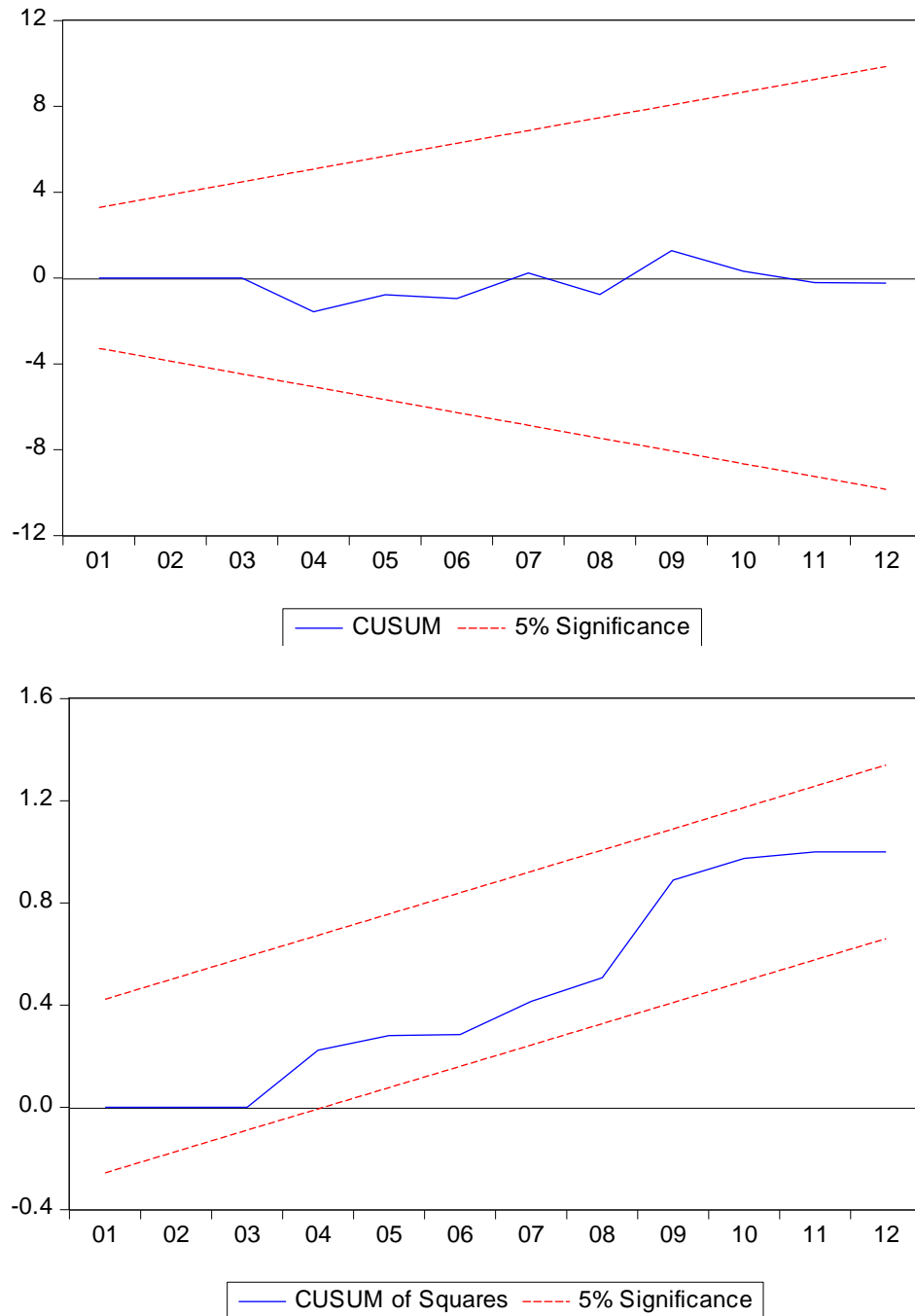


Figure 2: CUSUM and CUSUM of Squares Stability Tests

The two straight lines in the figures show critical bounds at the 5% level of significance. The line within the critical bounds represents the results of both the short-run and long-run analyses and implies that the coefficients of error correction model are free from autoregressive conditional heteroscedasticity and serial correlation. Hence, the model is stable, and results can be trusted for policy use. As indicated in both figures, tests are within critical bounds (represented by two straight lines), and Table 9 shows

the diagnostic results of the underlying ARDL model for long-run elasticities and supporting statistics. The results also signify that the long-run model successfully passed all tests of normality, serial correlation, conditional heteroscedasticity, and functioning form. The robust results of the diagnostic test imply that the ARDL model can be trusted and relied upon for policy modeling on the energy-growth-environment linkages.

Table 9 ARDL model long-run diagnostic test

S.No.	Diagnostic Tests	LM-Test	F-Test
A	Serial correlation	CHSQ (2) 2.6088 (0.0827)	3.0638 (0.0917)
B	Functional Form	CHSQ (1) 1.2386 (0.2412)	1.5343 (0.2512)
C	Normality	CHSQ (1) 1.3285 (0.1534)	Not applicable
D	Heteroscedasticity	CHSQ (1) 0.024 (0.8760)	0.0226 (0.8816)

A: Lagrange multiplier test of residual serial correlation; B: Ramsey's RESET test using the square of the fitted values; C: Based on a test of skewness and kurtosis of residuals; and D: Based on the regression of squared residuals on squared fitted values.

CONCLUSIONS AND POLICY RECOMMENDATIONS

This study examines the nexus between economic activities, energy consumption and the environment (deforestation) while population and trade are added as two additional explanatory variables. The study employs the ARDL bounds test approach to co-integration and the VECM-Granger causality test to investigate economic growth-environment linkage whether there is the existence of the EKC hypothesis. The result does not confirm the characteristic inverted-U shaped relationship and invalidates the EKC hypothesis. The study also conducts tests for both short-run and long-run paths, and the results suggest that a 1% increase in growth and trade reduce deforestation by 0.0041% and 0.0014% respectively in the short-run; if growth continues, the effects increase deforestation by 0.0012% and 0.35420% respectively in the long-run. Similarly, in the short-run, a 1% increase in energy consumption and population increase deforestation by 0.0005% and 0.0533%, respectively, and in the long run, 0.6922% and 0.0603%, respectively. There is a bidirectional causal effect is detected between economic growth and population and deforestation. However, energy consumption, population, and trade Granger cause economic growth. This study suggests that economic growth, energy consumption, population and trade deplete forests in the long run.

Therefore, there is a strong need to revisit domestic and international policies related to energy, growth and trade indicators. The relationship between deforestation and energy consumption is particularly worrisome because wood is used as a fuel and for house construction in most rural areas. There is also a need for sufficient plantations with wood cutting for domestic use. This study found that growth,

population, trade and energy use have direct link to deforestation. Therefore, it can be concluded that the energy-growth nexus contributes to environmental degradation in multiple directions. This idea is further confirmed by the causality test, which suggests that there is a bi-directional causality between economic growth, population and deforestation. We can conclude that growth and energy consumption, population and trade contribute to deforestation in Nigeria though energy consumption shows no significance. The bi-directional causality between the variables shows that there is a strong link between both indicators and their effect on each other.

Nigeria is in dire need of technological change in both energy and industrial sectors. The adoption of renewable and alternate energy resources will support sustainable growth with reduced adverse environmental impacts. The increasing population ratio is a fueling factor to worsening environmental conditions due to economic growth and energy use. Stringent measures of environmental protection should be embarked upon by Nigerian government. Measures that encourage renewing natural capital like in the forestry industry will help entrepreneurs to continue growing without limit. From all indications, environmental sustainability cannot be attained without effectively and efficiently positioning policy and institutions that will bring it to reality. Therefore, stringent measures in ambient air quality, ambient marine, forestry, protection of environmental amenities and general guidelines for exploitation of environment resources are requirements for environmental sustainability. In addition, there is need for investment in green technology in production processes. Environmental friendly means of economic growth should be pursued given the abundant alternative sources in Nigeria economy.

There is also the need for creation of public awareness and research direction towards environmental sustainability.

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ⁱData used for the analysis include population growth, GDP growth, trade openness, energy consumption and deforestation.

ⁱⁱ The underlying ARDL indicates four co-integrating equations. F-statistic of the underlying ARDL are greater than the upper bound critical value except energy consumption equation

ⁱⁱⁱ Results are available upon request by authors

^{iv} VECM Granger causality applied

THE ROLE OF STUDENT PERCEIVED OF LECTURER'S MEANING SUPPORT IN LEARNING ON STUDENT ENGAGEMENT

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Abstract

Previous researches have long been ascertained that intrinsic motivation and self-efficacy play an important role on student engagement. The purpose of present research is to identify whether student perceived of lecturer's meaning support in learning along with intrinsic motivation, and self-efficacy are meaningful predictors of student engagement. Variable of meaning support in learning is developed based on Self Determination Theory. 251 freshmen of social studies from Universitas Indonesia have participated in the research. In order to collect data, "School Engagement Measurement", "Meaning Support in Learning", "Learning Motivation", and "Self-efficacy, Stress, and Academic Success in College" scales have been employed. A Multiple Regression analysis has been used to predict the student's engagement based on student perceived of lecturer's meaning support in learning, the level of students' motivation and level of student's self-efficacy. It is found that student perceived of lecturer's meaning support in learning have predicted 14% of student engagement. This research indicates that lecturer's meaning support in learning also plays an important role on student engagement. The implications of the result are discussed.

Keywords: student perceived of lecturer's meaning support in learning, self-efficacy, student engagement, self-determination theory

INTRODUCTION

The transition period from high school to higher education considered as a difficult or challenging time for students. This condition makes them anxious as in higher education they were encouraged to be able to think and intellectually independent (Innis, James & McNaught, 1995; Paulynice, 2013). Learning experiences in college that are far different from previous learning environment in high school often make students become confused, awkward, even stress in doing the process of learning in college (Depdiknas Dirjen Dikti, 2003; Paulynice, 2013). In higher education, the students' learning needs may change as their learning experience developing related to their interests, goals, and the fulfillment of their actualization in academic abilities. Interests, objectives, and the need for self-actualization would affect students' learning motivation.

Basically, learning activities and experiences in college are happened not only in the classroom. The number of extracurricular activities on campus, which may not exist before in high school, also made the students tempted to follow the activities that interest them. Students' attendance and assignments completions are often disturbed by non-academic activities. In fact, in order to be successful and graduate on time with good grades, students need to control themselves and focus on academic activities. Student engagement in learning activities affect not only to their academic success, but also to their optimal development, psychological wellbeing, and also prevent them from dropping outs (Carini, Kuh, & Klein, 2006; Ferguson, Kasser, & Jahng, 2010; Kuh, Cruce, Shoup, and Kinzie, 2008).

Universitas Indonesia students which are selected through various methods of enrollment, consist of students with diverse characteristics. These enrollment methods are based on academic ability instead of ethnicity, religion, race, specific groups, gender, social status, or politics (Pedoman Penjaminan Mutu Akademik Universitas Indonesia, 2007). Thus, the Universitas Indonesia students that were selected by their grades in academic ability tend to have a different learning habit, motivation, experience, and life background. The diversity of student characteristics is a challenge for lecturers to teach students in learning activities. Lecturers are expected to help students develop their potentials towards their psychological well-being (Ferguson, Kasser, & Jahng, 2010).

In their first semester, Universitas Indonesia students are required to take university compulsory course called Integrated Personality Development Skills (MPKT) for 6 credits. Through this course, students are trained to think critically, work in groups (collaborative learning [CL]), learn through electronic media, and learn from problem-based perspective (problem-based learning, [PBL]). These huge credits of MPKT course indirectly encourage students to be diligent and actively involved in the classroom activity in order to obtain good grades. Students are expected to be intrinsically motivated because the responsibility for their success is in themselves. Students need to create meaningful learning experiences and have confidence that they can motivate themselves intrinsically and engage in learning activities in the classroom. This study aimed to identify the role of students' perceived of lecturer meaning support toward learning engagement.

LITERATURE REVIEW

Student engagement is very essential for student success. Learning environment plays an important role toward student engagement (Christenson, Reschly, & Wylie, 2012). In higher education, learning engagement has an important impact not only toward student success, but also influence student optimal development and their psychological wellbeing. In addition, student engagement could prevent drop outs (Carini, Kuh, & Klein, 2006; Ferguson, Kasser, & Jahng, 2010; Kuh, Cruce, Shoup, & Kinzie, 2008). Student engagement is often

conceptualized as a multidimensional construct (Appleton, Christenson, & Furlong, 2008; Fredricks, Blumenfeld, & Paris., 2004). However, there are some disagreements across the different conceptualizations in relation to the number of dimensions of engagement. In the literature, three dimensions of student engagement are typically described: cognitive, behavioral, and emotional engagement. In measuring student engagement in this study, researchers used understanding of student engagement based on a three dimensions typology. Cognitive involvement refers to thinking strategies used by students (Walker, Greene, & Mansell, 2006). Behavioral engagement refers to student participation in learning (Birch & Ladd, 1997). Emotional engagement refers to feelings or emotions of students in learning (Connell & Wellborn, 1991).

Student engagement is a process of interaction and a dialectical relationship between intrapersonal factors and learning environment (Schunk & Mullen, in Christenson, Reschly, & Wylie, 2012). How students perceived their learning experience will affect their learning engagement. The role of the lecturer in the classroom activities is very important toward student engagement (Kuh, et al., 2008). Lecturers need to understand how students can be motivated to perform its activities in order to construct their knowledge. To provide learning experience that could encourage student engagement, student needs to fulfill their basic psychological needs, so they would intrinsically motivate to learn (Deci & Ryan, 2000).

Learning engagement amongst students is varied. Students with low learning engagement level seemed less interested participating in classroom and their involvement just for attending the class only and not involve in classroom activities. Low learning engagement will not give a satisfactory learning outcome considering learning activities only to receive, repeat, and remember materials being taught. In this case, learning only occurs on the surface (Tagg, 2003). Students with low learning engagement develop their ability less in applying their knowledge in a more complicated situation (Haste, 2001, in Christenson, Reschly, & Wylie, 2012).

Students with high learning engagement will deploy all its ability and their commitment to learning process. They perceived learning as something

meaningful and in accordance with the purpose of their life. Learning engagement is not driven by the demands that come from their external self, but the curiosity arising from themselves (Haste, 2001, in Christenson Reschly, & Wylie, 2012). High engaging in learning lead the students to a deeper comprehension and understanding of the subject matters. Deep understanding level in learning is important because due to learning approach oriented in understanding the depth of the material, the students will get good value and he can apply his knowledge in a different context or perspective. Deeper of understanding in learning will also make students enjoy their learning experience better (Tagg, 2003).

In order to be fully engaged in learning process, students need encouragement or motivation to perform his duties. Learning engagement is an indicator whether students get motivated or not, so that they would be involved in learning and in turn will contribute to their learning outcome and self development. Conversely, learning disengagement lead to a negative impact because it makes students passive and rely on external forces to control their learning (Trowler & Trowler, 2010). Thus, the motivation that comes from inside, or often referred as intrinsic motivation, plays an important role in learning engagement. According to Self Determination Theory (SDT, Deci & Ryan, 2000), learners can be intrinsically motivated when learners basic psychological needs - autonomy, competence, relatedness - are satisfied. SDT has been widely used to investigate the learning engagement and has been successfully applied in teaching (Jang, 2008; Reeve, et al., 2004; 2006).

SDT states that all students, aside from their age, gender, socioeconomic status, nationality, and cultural background, have an innate tendency to evolve and this condition can be a driving force for their learning engagement and success (Reeve, 2012 in Christenson, Reschly, & Wylie, 2012). When other theory of motivation explaining how the expectations of learners, beliefs, and goals influence their engagement of learning, SDT is uniquely emphasized the role of teachers in encouraging learners' motivation as an essential point to facilitate the excellence learning engagement (Reeve, 2012 in Christenson, Reschly, & Wylie, 2012).

Based on Deci and Ryan (2000), there are three universal basic psychological needs, namely the need for autonomy, the need for competence, and the need for relatedness. When these needs are met, motivation and well-being of a person will increase. On the contrary, when those needs are limited or obstructed, there will be a negative impact on the wellbeing/satisfaction of one's life. Deci and Ryan (2000) stated that when students met these three basic psychological needs in the process of learning, intrinsic motivation is formed and they will enjoy their learning activities. On the other hand, if teachers tend to control students' behavior, intrinsic motivation will not appear and learning engagement tends to be low. In this case, learning activities determined by the teachers thus make the students didn't have freedom to express their ideas and feelings in the process of learning (Deci & Ryan, 2000). Therefore, students possess inner motivational resources that learning environments can support or inhibit. However, this Basic Psychological Needs Theory postulate is not widely applicable in non-Western societies, specifically needs for autonomy. The results showed inconsistency in otonomy needs among different culture (d'Ailly, 2003, 2004; Flowerday & Schrow, 2003; Iyengar & Lepper, 1999; Okazaki, 2011; Ratelle, Guay, Vallerand, La Rose, & Senecal, 2007; Tonks, 2006). Therefore, culturally, there is the difference between how environment affect students' learning that positively perceived by students as supporting their autonomy and the learning environment that they perceived as controlling and yet can make them succeed.

As mention above, the needs for autonomy inconsistently would applicable in non-Western societies. Study involving non-Western participants found that self-esteem and spiritual needs are among the human primary needs (Grouzet, Kasser, Ahuvia, Dols, Kim, Lau, Ryan, Saunders, Schmuck, & Sheldon, 2005; Sheldon, Elliot, Kim, & Kasser, 2001). A study of the most satisfying needs based on research findings by Grouzet, et al. (2005) and Sheldon, Elliot, Kim, & Kasser (2001) with the respondents of freshmen year social studies students in Universitas Indonesia (Primana, 2015, unpublished dissertation) revealed that SDT postulates of the need for autonomy, relatedness, and competence are the basic psychological needs perceived as important and primary on the top of three ranked by participant.

However, not only the three basic psychological needs by SDT, four other needs as follows, the need for self-actualization, spiritual/meaning needs, pleasure stimulation, and self-esteem were also important to the respondents. In other words, from the students learning experience, they think of experiences in which they felt strongly related to others, autonomous, self-actualized, spiritual/meaningful, pleasure, self-respected, and competent, in order to engage in learning. Therefore the seven basic psychological needs - the need for autonomy, relatedness, competence, self-actualization, spiritual needs, pleasure stimulation, and self-esteem - emerged to be the most salient needs to be fulfilled to make students engage, motivated, autonomous, curious, proactive, enthusiast, and feel that learning is meaningful for their life. The meaning/spiritual needs occurred as an exclusively component amongst the entire needs. The present study aimed to seek the contribution of student's perceived of lecturer meaning support, along with intrinsic motivation and self-efficacy which have been strongly proved by previous studies (e.g. Bandura, 1997; Skinner & Belmont, 1993) to be the salient factors that influence student engagement in learning.

THE OBJECTIVES OF THE STUDY

1. To examine the level of student engagement in learning.
2. To examine to what extend students' perceived of lecturer meaning support in learning.
3. To examine the contribution of students' perceived of lecturer meaning support in learning on student engagement.

METHOD

This research is a field research and respondents are selected based on convenience sampling techniques. A self-report questionnaire was used to gather information related to the objectives of the study. The samples are social studies freshmen from Universitas Indonesia. 251 students (female = 70.52 %) were asked to complete the questionnaires. In collecting research data, researchers assisted by a group of instructors. The instructors handed out questionnaires and give instructions to the respondents in the

classroom. The token was given after the respondents completed the questionnaires.

In this study, student engagement in learning variable were assessed using *School Engagement Measurement* (SEM) scale by McArthur which has been developed by Blumenfeld and Fredricks (2005, in Fredricks, Blumenfeld, Friedel, & Paris, 2005). Students' perceived of lecturer meaning support in learning was assessed by The Meaning Learning Scale developed by Primana (2015, unpublished dissertation) and constructed based on The Learning Climate Questionnaire Scale (Williams & Deci, 1996). The Meaning Learning Scale consists of seven basic psychological needs - need for autonomy, competence, relatedness, meaning/spiritual needs, self-esteem, self-actualization, and pleasure stimulation needs. To assess intrinsic motivation, Learning Motivation Scale by Maulana, Opdenakker, den Brok, & Bosker, (2011) was adapted. The respondents are asked to indicate their degree of agreement with the statements, scored on a five-point Likert-type scale (1=strongly disagree; 5=strongly agree). Self-efficacy, Stress, and Academic Success in College Scale (Zajacova, Lynch, & Espenshade, 2005) was used to identify the students' self-efficacy. To fill in this self-efficacy scale, the respondents were asked to indicate their degree of their self-efficacy to the statements provided, and scored on a 10 range scale (1= strongly unsure; 10=strongly confident). A descriptive statistics was used to identify the level of the student engagement in learning, coefficient correlation was used to analyze the relationships between variables, and multiple regression analysis was used to predict the contribution of students' perceived of lecturer meaning support in learning toward student engagement.

RESULTS

Table 1 displays the respondents' level of student engagement. The data shows that most of the respondents have a moderately high learning engagement with a percentage of 66% ranging from 2.5 – 3.49, while 33% of respondents have high learning engagement ranging from 3.50 – 4.00. The remaining 1% has moderately low learning engagement ranging from 1.50 – 2.49. None of the

respondents are in the low level category of learning engagement.

Table 1 Level of Student Engagement

Levels of Student Engagement	Frequency	Percent (%)
Low (<1.49)	-	-
Moderately low (1.50 – 2.49)	3	1
Moderately high (2.50 – 3.49)	165	66
High (>3.50)	83	33

Mean = 3.38; Minimum = 1; Maximum = 5; Std.Deviation = 0.35

Table 2 presents correlation between students' perceived of lecturer meaning support in learning, intrinsic motivation, self-efficacy on student engagement. As we see from the table, correlation between students' perceived of lecturer meaning support in learning and student engagement ($r = 0.43$, $p = 0.000$) was quite strong and almost reach the

correlation between self-efficacy and student engagement ($r = 0.59$, $p = 0.000$). The correlation between students' perceived of lecturer meaning support in learning and student engagement ($r = 0.43$, $p = 0.000$) was even slightly stronger than the correlation between intrinsic motivation and student engagement ($r = 0.35$, $p = 0.000$).

Table 2 Correlation Matrix between Students' Perceived of Lecturer Meaning Support in Learning, Intrinsic Motivation, and Self-Efficacy on Student Engagement

	1	2	3	4
Student engagement	1.00			
Students' perceived of lecturer meaning support in learning	0.43**	1.00		
Intrinsic motivation	0.35**	0.20*	1.00	
Self-efficacy	0.59**	0.33**	0.32**	1.00

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

From Table 3 and Table 4 it can be seen that the multiple regression model with all three predictors produced $R^2 = .416$, $F = 56.303$, $p < .001$. Student's engagement can be explained by three predictors

which are lecturer's meaning support in learning, intrinsic motivation, and self-efficacy. Those three variables contribute 42% to the variance of learning engagement and 14% was predicted by lecturer's meaning support in learning respectively.

Table 3 Estimation of Standard Error Deviation Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.373a	.139	.135	.819	.139
2	.473b	.223	.217	.779	.084
3	.645c	.416	.409	.677	.193

a. Predictors: (Constant), Students' Perceived of Lecturer Meaning Support in Learning

b. Predictors: (Constant), Students' Perceived of Lecturer Meaning Support in Learning, Intrinsic Motivation

c. Predictors: (Constant), Students' Perceived of Lecturer Meaning Support in Learning, Intrinsic Motivation, Self-efficacy

Table 4 Variation Analysis of Research Variables

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	25.882	1	25.882	38.557	.000 ^b
	Residual	160.433	239	.671		
	Total	186.314	240			
2	Regression	41.602	2	20.801	34.210	.000 ^c
	Residual	144.713	238	.608		
	Total	186.314	240			
3	Regression	77.530	3	25.843	56.303	.000 ^d
	Residual	108.784	237	.459		
	Total	186.314	240			

a. Dependent variable: Student Engagement

b. Predictors: (Constant), Students' Perceived of Lecturer Meaning Support in Learning

c. Predictors: (Constant), Students' Perceived of Lecturer Meaning Support in Learning, Intrinsic Motivation

d. Predictors: (Constant), Students' Perceived of Lecturer Meaning Support in Learning, Intrinsic Motivation, Self-efficacy

CONCLUSION AND DISCUSSIONS

This study intends to examine the relationship between students' perceived of lecturer's meaning support in learning on student engagement. From the data presented above, we can draw the following conclusion: three of the student engagement indicators, namely students' perceived of lecturer's meaning support in learning, intrinsic motivation, and self-efficacy are significant predictors for student engagement as the dependent variable. Descriptive analysis showed that most freshmen of social studies from Universitas Indonesia have quite high learning engagement and students' perceived of lecturer's meaning in learning as well. The fact that correlation between lecturer's meaning support in learning and student engagement was quite high showed that the students' need for meaning making in learning was salient for their learning activities. The more lecturer support the students' needs for meaning in learning, the more the students engage in learning.

Multiple regression analysis revealed that the most powerful correlation and contribution occurred between self-efficacy and student engagement, as previous researches ascertained (Bandura, 1997; Deci & Ryan, 2000; Zimmerman, & Cleary, 2006).

Important findings found in the correlation and contribution of students' perceived of lecturer's meaning support in learning and student engagement. The seven basic psychological needs namely needs for autonomy, needs of competence, need for relatedness, self-actualization needs, spiritual/meaning needs, self-esteem, and pleasure stimulation, which was constructed based on SDT (Deci & Ryan, 2000), are students' needs should be fulfilled in order to get students engage in their learning activities.

From this study, specifically for freshmen of social studies from Universitas Indonesia, the need for autonomy is not enough to drive them to be motivated intrinsically in the learning activities. On top of the SDT three basic psychological needs (Deci & Ryan, 2000), the need of meaning making in learning along with intrinsic motivation and self-efficacy determined their engagement in learning.

Although there is much work remains to be done, this present study generates important findings in the student engagement research. In other words, there were some limitations of this study. The primary limitation of the present study was that lecturer meaning support variable that consists of seven basic psychological needs need to be tested through

factorial analysis. Therefore, the concept of lecturer meaning support in learning would be clearer. In addition, because only freshmen of social studies in Universitas Indonesia were used in the study, the applicability of these findings to the larger populations remains untested.

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GENDER EQUALITY: THE NEED FOR ENFORCEMENT OF LEGISLATION IN NIGERIA

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Abstract

This paper studies the struggle for gender equality in Nigeria and findings indicated that despite the ratification by the Nigerian Government on the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) in 1985 and the Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa in 2005; the lives of Nigerian women are yet to attain a commensurate level of improvement, as Nigerian women rank lower than men in all indices of development in the country. The paper also observes that the rights of women enshrined in the Nigerian Constitution are consistent with the ideals of humanism. But unfortunately, the rights and ideals have remained paper tigers, mere theoretical postulations without any practical bearing on the lives and conditions of the Nigerian women. Other findings revealed that despite some positive actions taken by the Nigerian government in promoting gender equality as showcased by adoption of a gender policy in 2007 and establishment of women development centers in all states in Nigeria amongst other credible initiatives; there were salient failures as discovered in the current patriarchal structure of the Nigerian society; and failure of the national assembly to pass the gender and equal opportunity bill. The paper recommends series of concrete strategies that should be adopted to acculturate gender equality in Nigeria, which should be anchored on legislation of laws, both at federal and state level that premise on promoting gender equality.

Keywords: women, legislature, equality, gender, law, Nigeria

INTRODUCTION

Nigeria ratified the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) in 1985, and the Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa in 2005 (Africa union, 2010). The protocol was adopted on 11 July 2003 by the AU to strengthen the promotion and protection of women's rights in Africa. By virtue of the Protocol, Nigerian women are guaranteed the right to dignity; the right to life, integrity and security of their persons; freedom from harmful practices which negatively affect the human rights of women; equal rights in marriage; the right to equal protection and benefit of the law; the right to participate in political and decision making process; the right to education and training; equal opportunity in work and career advancement; the right to health, including sexual and reproductive rights; the right to a positive cultural context; widow's rights; the right to equitable share in

inheritance; and a right of remedy to any woman whose right or freedom has been violated (Omoyemen, 2010). Furthermore, 1999 Constitution of Nigeria prohibits discrimination on the grounds of sex, religion and political beliefs

From the aforementioned, the opposite is the reality in the life of Nigerian women. For the fact that Nigeria is a federal republic, each state has the authority to draft its own legislation and the combination of federation and a tripartite system of civil, customary and religious law makes it very difficult to harmonize legislation and remove discriminatory measures. Coupled with the patriarchal nature of Nigerian society gender inequality has been established, maintained and grounded in the country.

But then why did the Nigerian government endorse these international human rights concerning elimination of discrimination against women? Is this a mere formality to show that the country too belongs

to the international communities that has seen the evil of inequality suffered by women? Could this be connected to the reason for the rejection of Gender and Equality Opportunity Bill by Nigeria National Assembly? The paper exposes the gender inequality as despicable, dysfunctional and therefore, detestable thing that Nigerian women have experienced in the patriarchal society. The paper concluded that the best thing that will happen to Nigeria people is the legalization of Gender and Equal Opportunity Bill.

Meaning of Equality

Equality means everyone is accorded the same rights in the society in the absence of privileges and special rights. Despite difference in physical, psychological, and capacities of individual, all human beings are to be treated equally is known as natural equality (Ghai, 2015). All are to be considered worthy of enjoying all human rights and freedoms. The equal right for all is in line with the fact that all men are born equal and free, therefore they have to be treated and rewarded equally. These rights will allow the individuals to develop their talents to the highest level that they can attain without interference. Ghai had argued that equality does not mean absolute equality. The natural and absolute equality of all cannot be realized and acceptable in the real world. For in reality men are neither equal in respect of their physical features nor in their mental abilities. Some people are stronger than others, while some are more intelligent and capable than others, therefore they can never be treated equally. As such equality of treatment and rewards cannot be guaranteed. Rewards essentially depend upon the actual capabilities and work done.

Ghai further asserted that equality which should mean absence of all unnatural and unjust inequalities do not exist in the society. But what exist are two types of inequalities, natural inequalities and man-made inequalities. The former means natural differences among individual persons. These have to be accepted by all. The latter known as man-made inequalities are those formed by some socioeconomic conditions and discriminations. These occur due to the operation of the social system such as in patriarchal society. This is where inequality women suffer is instituted. The discrimination and inequality against women in the society is a man made, accepted by all include the women.

Conley on his part has postulated that equality can occur by opportunity as "the idea that everyone has an equal chance to achieve wealth, social prestige, and power because the rules of the game, so to speak, are the same for everyone"(Conley, 2013). This concept can be applied to society by saying that no one has a head start. This means that, for any social equality issue dealing with wealth, social prestige, power, or any of that sort, the equality of opportunity standard can defend the idea that everyone had the same start. It views society almost as a game and any of the differences in equality are due to luck and ability of the player. Conley compared this to the game of monopoly to describe society. He claims that "Monopoly follows the rules of equality of opportunity" by explaining that everyone had an equal chance when starting the game and any differences were a result of the luck of the dice roll and the skill of the player to make choices to benefit their wealth. His argument does not tally with that of Ghai. The game of opportunity would have been the wonderful theory of equality if it can be applied in real world. In the real world people do not have equal start, especially women.

Equality and Women

Gender equality entails the concept that all human beings, both men and women, are equal and free to develop their personal abilities and make choices without the limitations set by stereotypes, rigid gender roles and prejudices. This means that the different behavior, aspirations and needs of women and men are considered and valued equally. It does not mean that women and men have to become the same, but that their rights, responsibilities and opportunities will not depend on whether they are born male or female. This concept may be taken to primarily refer to the full equality of men and women to enjoy the complete range of political, economic, civil, social and cultural rights, with no one being denied access to these rights, or deprived of them, because of their sex(Wikipedia,)

In relation with this gender equality is gender equity. Gender equity on the other hand is the process of allocating resources, programs and decision-making fairly to both males and females. It does not necessarily mean making the same programs and facilities available to both males and females. It

requires that girls and women be provided with programs that meet their needs, interests and experiences (CAAWS). It has narrower and strongly economic implications. But in many cases this is not how many societies are structured. History reveals that economic and political power enables those groups and individuals who hold it to maintain their domination and exploitation of others, promote inequality and discrimination (Appadorai, A. 2001). This could elucidate the reason why women are subjected to inequality because they are in a disadvantage position.

The discriminations and inequalities are societal structures that are instituted against women. Only a few organized societies where women's rights are recognized and respected, apply the principle of gender equality and equity. Gender inequality index data indicator of 2010 available for 138 countries indicated that the world average score on the Gender Inequality Index was 0.56, reflecting a percentage loss in achievement across the three dimensions (of reproductive health, empowerment and labor market participation) due to gender inequality of 56 percent. Regional patterns reveal that reproductive health is the largest contributor to gender inequality around the world – women in Sub-Saharan Africa, with a massive 99 percent loss, suffer the most in this dimension (wiki Gender index 2010). From the data presented above Nigeria is amongst the Sub-Saharan Africa countries where inequality is very high.

Gender inequality in Nigeria

Gender inequality in Nigeria is expressed in the following dimensions:

Inequality in marriage: the forms of marriages recognized and officially instituted in Nigeria are Customary, Christian, and Islamic and Court or Registry marriages. Upon marriage, all of a woman's property became her husband. Her personal property (jewelry, clothes, cash, etc.) become his absolutely; he could do what he wants with it. She is authorized to use her husband's property, but cannot dispose of it as her own. (Imasogie, 2010).

The situation of women marriage under customary marriage is worst with regard to property rights. As Nigerian cultures vary so also the treatment of women in customary marriage varies. For instance

the Orokam people in the Ogbadibo Local Government of Benue State, a woman married under the customary law belong to the husband in totality- all she owes and herself are the property of her husband. Her properties and her wealth can be disposed of by her husband if he is in need of money without her consent. She cannot take a legal and monetary discussion without the husband authorization. Upon divorce, all she earns in the duration of the marriage are seized by the man; even the dowry paid on her head is returned to him. Many divorce women are denied custody and access to their children, nothing is left for her and she goes out of the marriage empty handed. This is the major reason why divorce is rare in this community. The women prefer to endure the marriage whatever condition they find themselves. If she is widowed, her life is miserable, she is left in the mercy of male relations of her late husband who will deal with her as they please. She is forced into marriage with one of them, on rejection of this marriage she may be sent away in dejection.

Among those under Islamic law, child marriage is still prevalent. Many of these girls are married out without their consent. According to Baobab Women's Human Rights is not considered, the rights to choose one's partner were not granted to these girls. Girls are often married between the ages of 9-14.

The law gave men power over women in marriage under the doctrine of coverture gave men legal rights while depriving women of their rights; at the same time, the law does little or nothing to protect women from abuses by their husbands. Coverture is described [Blackstone, 1765] as making husband and wife legally one person- the husband but legal existence of the woman is suspended during the marriage because her legality is incorporated into that of the husband, under whose protection and cover she does everything. The practical effects of coverture is that a woman could not make contracts or take legal actions in her own name, could not bring cases against her husband because legally, that would be bringing case against herself. She did not have rights over her children or even her own body, and could not control her own property. A man who raped another man's wife or committed adultery with her would be offending against the husband's property rights

(Imasogie, 2010). This applies only to court or registry marriage.

Assaults and violence against Women: violence against women has existed time immemorial. This violence comes in different shapes and forms. It could be physical, mental or psychological violence. These included cases of women's rights violation such as murder, rape, widow abuse, and physical assaults. Unfortunately, it is only extreme cases that are violent against women which results in death or permanent disability that gets the media attention and the appropriate authorities. Similarly, in Nigeria, laws to protect women from violence are pathetic. For example, marital rape is generally not recognized as an offence in any system of law in Nigeria, even when the wife is wounded in the course of forced sexual intercourse. Formal mechanisms to seek redress in cases of domestic violence or rape, through police investigation followed by a court proceeding, are often ineffective (Salaam, 2003). Moreover, the victims of domestic violence hardly report to the law enforcement agencies. Under the discriminatory laws, it has been pointed out that Section 55(1) (d) of the Penal Code for the 19 states of northern Nigeria permits a man to beat his wife for insubordination and the purpose of correcting her, provided that the result does not amount to the infliction of grievous hurt.

Inequality in Labor Matter: women are mostly discriminated in the area of employment. Issues of inequality confronting women in the economic sector are enormous. This is why women are predominant in the micro-economic sector due to lack of technological and managerial skills. Unequal payment met to women even where they do the same job as men, women are cultural stereotype discrimination against. This is mostly finding in unskilled labor job that may involve male and female. Even if they performed the same work as men, women are paid less because of the belief that men are physically stronger than the women. (Imasogie, 2010).

In some public organization, women are highly discriminated against. For instance, discrimination is found in the Police Act Regulation 118 provides that a woman desirous of joining the police force must be unmarried. Under Regulation 124 of the law, a

woman police officer wanting to get married must first apply in writing to the Commissioner of Police of the Police Command in which she is serving, requesting for permission to marry, and must submit the name, address and occupation of the man she intends to marry. Approval will be granted for marriage if the proposed husband is of good character and the woman officer has served in the force for a period of not less than 3 years. It should be noted that the same provision does not apply to male police men. Also under Regulation 127 of the Police Act, the employment of a woman police is not secured, as she is automatically discharged from the force upon getting pregnant. She can only be re-enlisted with the approval of the Inspector General of Police. This practice explains why the Police Force is predominantly filled with men. In the same vein, the Air Force Act is also discriminatory against female.

Discriminatory law against women: The Section 39(3) of the constitution allows men to confer citizenship on their foreign spouses but does not allow the reverse in case of Nigerian women married to foreign men.

Discrimination in politics and education: women face restrictions or barriers in politics in Nigeria, a country where only seven of the 109 senators are women. Mrs. Aisha Al-Hassan, the Minister of Women Affairs observed that in Nigeria, women represented 49 per cent of the population, yet they occupied less than six per cent of parliamentary seats at the national level. In the educational sector in spite of Nigeria's long exposure to Western education, more than 50 percent of Nigerian women are still said to be illiterates due to preference given to the education of boys.

Obnoxious code legislations against women: this includes denial of women's right to the custody of their children after divorce, violation of women's right to inheritance of their husband's/father's properties but permits the son or the brother of a deceased person to inherit his property to the exclusion of his female children. Under this code the denial of women's right to exist as a separate legal entity, and others.

The Need for Enforcement of Legislation of Gender and Equality of Opportunity Bill in Nigeria

The Gender and Equal Opportunity Bill has the following objective:

- To give effect to the chapter II and IV of the Constitution of Federal Republic of Nigeria;
- The international Covenants on Human Rights which affirms the principle of non-discrimination and proclaims that all humans are born free and in dignity and rights, and that everyone is entitled to all the rights set out without distinction of any kind including distinction base on sex; and
- The domestication of certain provision of the Convention of Elimination of All Forms of Discrimination against Women and the protocol to African Charter on the Rights of Women in Africa and National Gender Policy.

The bill is to ensure promotion of equality, full development and advancement of all persons; adoption of temporary special measures to eliminate discrimination - in political and public life, in the field of education, employment and health; elimination of discrimination on the ground of marital status and on socio-economic ground. It is also to grantee the rights to choice of indigene-ship and identity, in matters relating to marriage and family relation and of persons in rural communities. Furthermore, it is to ensure the provisions relating to marriage and matrimonial causes and to offence and sentencing including damages and compensations. And lastly, the establishment of gender and equality opportunity commission (<http://www.aacoalition, 2011>)

Nigerian lawmakers on Tuesday, March 15, 2016, vote against the passage of this important bill that will affect the life of every Nigerian. Those who

opposed the bill cited cultural and religious views of Nigerians. A male colleague argued in support of those who oppose the bill opined that the passing of the bill will work against the people from the core northern region of country due to their culture and religion which restrict women in so many ways. For instance, a national job which may require equal number of men and women to fill their quarter as federal character demands, the core north will be disadvantaged because they will not have enough women to fill their quarter. He asserted that gender parity will not be supported because it will not favor the northern cause. Another reason for non-passage of the bill might be the adoption of the bill would a threat and a challenge to the existing patriarchal institution. Any woman on the street knows that Nigeria men see women equality as a threat to their liberty. The National Assembly has men as the majority who cherishes their liberty and the patriarchal institution of inequality of women and men and would not want women to have share of it. So they quickly threw out the bill on its second reading.

When the bill was thrown out, many people cried in the social media

The bill is important because everyone knows one woman at least who has experienced injustice, discrimination at the office, child marriage, or has been cheated out of her inheritance. At least I know one, I know more than one. Many women across Nigeria daily go through these injustices that make life miserable and I have shared in their pain and if possible, I would help be the solution and I believe that is what Senator Biodun Olujimi is fighting for. What every woman should be fighting for and what the men who love them should be fighting for because we can't make it work without the support of all, men and women.(Abike Dabiri-Erewa 2016)

The bill if passed sought to end questionable and unpleasant stereotype practices that motivate discrimination based on gender and ensure liberty and equality. Liberty and equality are two most valuable rights of the people which no tradition and constitution should work against. These constitute two basic pillars of democracy that spur all men and women to contribute to the development of their society through participation in the formation and

implementation of policies that affect their life (Ghai, 2010). It would have brought a significant leap in the advancement of women in Nigeria in conformity to UN Convention and the Protocol of African Charter of rights of African Women and other related instruments on the rights and development of women.

CONCLUSION AND RECOMMENDATION

This paper has successfully demonstrated that in equality of gender in Nigerian is expressed-in marriage, in labor matter, assaults and violence against women, discriminatory law against women, discrimination in politics and education and obnoxious code legislations against women. Nigerian women are being marginalized as the result of inequality in political and decision-making process, employment, economic and opportunities. The study revealed that inequality has done a prodigious harm to the development of women who form half of the population and impaired their contribution to the economy of this great country. We conclude that the Nigerian women to get out of this awful situation the Gender and Equality opportunity must be passed into law.

Therefore the following strategies should be adopted to acculturate gender equality in Nigeria:

The equality clause of the Nigerian Constitution must be amended to give better protection to Nigerian women.

Modification of socio- cultural practices- agency of government, both public and private institutions and other social entity including educational institutions shall have the responsibility to modify the social and cultural patterns of conduct of men and women, with a view of achieving the elimination of gender stereotyping, prejudices, and customary and all other practices which are based on the idea of the inferiority or the superiority of either of the sexes, or the roles for men and women.

Women have immense potential for self-development in all aspects of life, when given the opportunity. It is their lack of opportunity and exposure that impedes their self- realization. Interaction among women in an environment free from family distractions will help them to open up their minds, which will lead to development thinking. This will engender the

women's awareness of their human rights and obligations as citizens of Nigeria and to fight for their rights.

A key strategy in promoting women's empowerment and gender equality has to be adopted for constructive action that will correct the age-long gender imbalance in Nigerian societies. The positive Action strategies have to become political instruments for meeting the needs of the women who have been unethically shut out of mainstream development and societal system.

Men are invited to take up the gender equality seriously. "Gender equality is your issue, too", says Emma Watson. She further stressed that men are being imprison by gender stereotypes. "But I can see that they are, and that when they are free, things will change for women as a natural consequence," emphasized Emma. She argued that if men don't have to be aggressive in order to being accepted as men, women won't be compelled to be submissive; and if men don't have to control, women won't have to be controlled. Nigerian men should borrow a leave from this girl's advice.

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STUDY OF INNOVATION IN LEARNING STYLES OF STUDENTS IN DIFFERENT SECONDARY SCHOOL BRANCHES

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Abstract

Learning, creativity, and innovation are considered as the axis of the activities of all educational and entrepreneur-based institutions. Learning style of students as one of the factors effective in learning and academic progress has always been taken into consideration. By identifying the learning style and rate of creativity of individuals, each style can be a more appropriate teaching method adopted by teachers and also a more correct method of learning by learners.

Accordingly, the main goal of the present article is to identify the differences of learning styles of individuals in different academic majors and the rate of the creativity of individuals in each learning style. The present methodology employed in this research is of descriptive-correlational research design. The statistical population consists of all the last-year students at the high school level in the city of Ghaen. The statistical sample consisted of 115 girls and 117 boys selected by classified sampling. Kolb's learning style inventory and Abedi creativity were used to collect the required data. These two tools are standardized, therefore their validity is verified. On the other hand, the reliability of the Kolb's inventory and that of Abedi's creativity were 0.74 and 79.5, respectively. To analyze the data obtained by Chi-square tests, one-way analysis of variance, Pierson covariance, and stepwise regression were employed.

The results show that there is a meaningful difference between the creativity of the students with diverging and assimilator learning styles. Learning styles of students of different branches are also different. Creativity of the students of Mathematics is more than that of the Humanities and there is also a meaningful negative relation between concrete experiential learning methods and creativity ($r=0.702$ and $p<0.01$).

Keywords: Learning style, Creativity

INTRODUCTION

Due to their important and serious role in educating the future-making generation, educational institutions are considered as one of the important and fundamental institutions in society. One of the main preoccupations of educational system is to transfer knowledge to the future generation. Increasing production of knowledge and information; extensive cultural, social, and economic development and changes along with new problems and consequently new expectations for educational system have

resulted in teaching the manner of learning and methods of creativity and innovation instead of the transfer of a collection of knowledge and information to individuals. In the present age, students should apply creative thought skills and correct learning methods to make appropriate decisions and solve the problems of society to cope with changes. Skinner believes that an effective educational system is based on appropriate learning and teaching methods for students (Mehyary, 2009). Creativity and innovation can also prepare the background for the growth and realization of talents as well as the self-prosperity of people. Of the most important places where talented

people can grow are educational environments and teachers are of the group of people who can bring about creativity in students or inhibit creativity by the application of inappropriate methods (Kazemi, 2009). Most people can learn the manner of realizing creativity. The key to creativity is the development of some basic skills and abilities. All people are equally and potentially creative. Creative people are endowed with special skills. Every person can learn these skills, speed up the creativity process, and guide it. With regard to the role of the educational centers in fostering creativity and appropriate methods of teaching for better learning, it is therefore required to address this critical issue. In examining domestic and foreign literature, the researcher did not find any document regarding a study performed on the relation between learning style and rate of creativity in people. This research therefore intends to compare the rate of creativity of the subjects in each of the styles in addition to determining the learning style of each of the educational groups (experimental sciences, mathematics, and humanities) and inform the educational programmers of better teaching methods at the beginning of the academic year so as to help them to have access to more qualified strategies for the acquisition of science and knowledge.

Individual factors are considered as the integral components of creativity of people in most viewpoints and have been emphasized by researchers (Saadet, 2007). Of the most important individual-level variables effective in creativity, one can refer to capability, personality features, cognition style, intelligence, and challengeable personality of people (Craft, 2001). In continuation, several examples of the researches performed in the area of learning styles and creativity are pointed out.

A research performed by Mehryar et al. showed that A) There was a meaningful relation between the learning style and problem solving of university students. B) There was a meaningful difference among the learning styles of the students majoring in basic sciences, humanities, and technical-engineering disciplines, so that the students majoring in technical-engineering disciplines preferred sensory, general, active, and visual learning style, while those majoring in basic sciences preferred verbal, sequential, intuitive, and contemplative learning style, and on the

other hand, students majoring in humanities mostly employed active learning style (Mehyary, 2009).

Rezai et al. studied the learning style of the students of Arak School of medicinal Sciences. With regard to the dominant assimilator and convergent style of learning among the students, it was suggested that lectures and self-study along with reading materials, demonstration, and use of diagrams, teacher's handwriting, and one-to-one teaching be adopted. It was also suggested that the communication skills of the students of medicinal sciences be reinforced, since the assimilators and also convergent show less interest to subjects entailing cooperation with others (Rezai, 2008).

Sharifi et al. studied and compared the effect of three methods of fostering creativity on the enhancement of creativity in students. The results showed that regardless of the teaching method, creativity teaching helped the growth and fostering of creativity in students (Sharifi, 2008).

A research was also performed by Yazdi to study and compare the methods and styles of learning of the students at different colleges of Al-Zahra University. The results showed that the students at different colleges employed different methods and styles of learning. The students at the college of arts mostly employed concrete experiential method and divergent—accommodator styles; the students at the technical college used reflective observation, abstract conceptualization, and assimilator styles; those at the psychology college used active experimentation, abstract conceptualization, and convergent styles; and the students at the college of basic sciences also used abstract conceptualization and convergent styles (Yazdi, 2009).

Ross (2003) studied the learning styles and methods of problem solving. The goal of this research was to study the levels of motivation related to tourist industry and marketing experience. The results showed that those who avoided running tourist management enjoyed less creativity to trust preparation as a method for learning method, but they relied more on distance learning (Mehyary, 2009).

Sternberg performed a research on the effect of creativity on the performance of 110 students and concluded that the rate of the effect of creativity

training stems from the cognition and personality traits of students (Sternberg, 2001).

The researches performed in relation to learning styles have shown that if individuals are trained with regard to their styles of learning and they know about their own style of learning, their learning will improve. (Mori, 1980; Spears, 1983; Settle, 1989; Clavass, 1994; and Lovelase, 2002 quoted by Ali Abadi, 2005).

METHODOLOGY

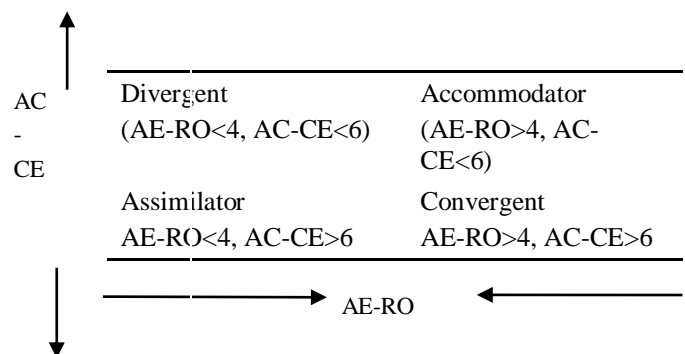
The present research is of correlational type in terms of both applicability and methodology. The variables of this research consist of different Kolb's learning styles (convergence, divergence, accommodative, and assimilator) as the predictor and incentive variables for the creativity of the students at high school level are the criterion variables. The present statistical population consists of all the last-year high school students (majoring in experimental sciences, humanities, and mathematics) in the academic year of 2013-2014. The classification method and Morgan Table were also employed for the selection and determination of the sample size, respectively. Then, the simple random method was used for the selection of the sample. Therefore, 115 girls and 117 boys were selected as the sample size. Kolb's learning style and Abedi's creative questionnaires were also used for the execution of the test.

The goal of Kolb's learning style questionnaire is to describe the manner of learner's learning and not to evaluate the learner's ability. There is no correct and incorrect answer in this questionnaire and all the choices are equally acceptable. The questionnaire consists of twelve questions classified into four sections of concrete experience (CE), reflective observation (RO), abstract conceptualization, and active experimentation (AE); each evaluating a part of the individual's ability. Since each of the learning styles is a combination of the above four learning methods, therefore justification of the type of learning style is based on the sum of these four scores representing four styles of learning specifying the individual's learning style. By the two-by-two subtraction of these styles, i.e. subtraction of abstract conceptualization from concrete experience and active experimentation from reflective observation,

two scores are obtained. These two scores are then put on the coordinate axis. One is the vertical axis of AC-CE (concrete experience—abstract conceptualization) and the other is the horizontal axis of AE-RO (reflective observation—active experimentation) forming four quadrants of a square. These four quadrants of the square of the coordinate show the learning style of an individual (Gibbs, 2010). The validity and reliability of this tool has been verified in numerous researches including the present research. Therefore, the reliability of the present research based on Cronbach's alpha method shows a high coefficient.

Active experimentation, abstract conceptualization, reflective observation, and concrete experience were 0.83, 0.74, 0.71, and 0.69, respectively. On the whole, it was estimated to be 0.74.

Diagram 1. Manner of determining Kolb's learning style type



Abedi test was devised on the basis of the theory and definition of creativity by Torrance. The test is made up of four sub-tests of fluency, elaboration, originality, and flexibility. Each question consists of three choices. The choices reflect low, medium, and high originality with scores of 1, 2, and 3 for low, medium, and high originality, respectively. The sum of the scores acquired in the four sub-tests (fluency, elaboration, originality, and flexibility) show the overall score of creativity.

The validity of this questionnaire was checked by factor analysis and correlation with similar tests (Torrance); its reliability was checked by re-testing and Cronbach's alpha. The reliability of this test was also verified by the use of Cronbach's alpha in the present research. The flexibility, originality, elaboration, and fluency were 0.88, 0.74, 0.81, and

0.75, respectively. On the other hand, in several researches including (Shahni et al, 2005) and (Sohrabi, 2002), the validity and reliability of this test were also verified by factor analysis, re-testing, and Cronbach's alpha.

FINDINGS

Research question: are there meaningful differences among learning styles of students majoring in different branches?

Table 2: contingency table of the variables of two learning styles and students of different branches

total	Value	Learning styles					branches
	χ^2	contingency	Assimilation	convergent	divergent	Learning style branch	
74	2.25	11	24	22	17	mathematics	
85	*4.60	23	10	20	19	humanities	
73	3.85	16	40	16	11	Experimental Sciences	
---	---	*15.68	4.32	3.25	*5.5	Value of χ^2	
219	---	82	72	86	72	Total	

$$\chi^2 = 89.69 \text{ df} = 6$$

$$p < 0.01 *$$

The above Table shows that the observed value of χ^2 (89.69) is larger than that of χ^2 the Table at $p < 0.01$ level, i.e. it can be said that there is a difference among the learning styles of the students and different majors at a confidence level of 99%. Also, calculating the linear and columnar values of χ^2 , it was observed that the value of the linear χ^2 was meaningful at a confidence level of 99%, i.e. the learning style of humanities was meaningfully different and the most observed frequency was at the contingency style, but in calculating the columnar χ^2 , it was observed that the value of the χ^2 of the

convergent (3.25) and contingency (15.68) styles were significant at a confidence level of 99%. With regard to the frequency of learning styles of the students in different majors, it can be said that most of the students in experimental branch used the convergent style and those in humanities used contingency style more than those in other majors.

Research question 2: is there any meaningful difference between the rates of the creativity of the students at high school level with regard to their learning styles?

Table 3. One - Way ANOVA

Sources of changes	Sum of squares	Df	Df	F ratio	α
intergroup	1181.613	2	393.871		
intragroup		217	111.982	3.517	0.016
total	23130.000	218			

With regard to the results obtained from data analysis, it is observed that the calculated F ratio for the purpose of comparing the creativity scores of the students on the basis of their learning styles is greater than that of the Table (at the error level of 0.05). It can therefore be concluded that there is a meaningful

difference between the creativity rates of the students based on their learning styles. This ratio is only indicative of creativity difference in learning styles, but it does not identify where these differences are?

Therefore, for the purpose of studying the meaningfulness of the mean difference of each group compared with that of another group, it seems necessary to perform a post-experimental or Tukey

post-hoc test (HSD). The results obtained from the computation of the above test are presented in the following Table:

Table 4. Test-Tukey

Statistical indices		Mean differences	Standard error	Significance level (α)
Learning styles				
Convergent	Contingency	0.0707	2.912	0.195
	divergent	5.026	1.965	0.054
	assimilator	-0.762	1.889	0.978
Contingency	convergent	-0.707	2.912	0.495
	divergent	4.318	2.924	0.453
	assimilator	-1.470	2.873	0.956
Divergent	convergent	-5.026	1.965	0.054
	contingency	-4.318	2.924	0.453
	assimilator	*-5.789	1.906	0.014
Assimilator	convergent	0.762	1.889	0.978
	contingency	1.470	2.873	0.956
	divergent	*5.789	1.906	0.014

Mean difference at 5% significance level

With regard to Tukey test, it is observed that there is a meaningful difference between the creativities of the students in the two styles of assimilator and divergent, in other words the creativity of the students employing the assimilator learning style is higher than those who use divergent learning style. Furthermore, with regard to the results obtained from the above Table, there is no meaningful difference between the creativity of the students in any other learning styles.

Research question 3: is there a meaningful relation between the learning styles of the students (concrete experience, reflective observation, abstract conceptualization, and active experimentation) with their creativity? To study the relation between learning styles and creativity of students, Pierson correlation test and stepwise regression were employed.

Table 4-A. Pierson correlation coefficient between learning styles and creativity

Learning Components creativity	Concrete experience	Reflective observation	Abstract conceptualization	Active experimentation
Correlation coefficient	0.74	0.68	0.81	0.59
Significance level	0.000	0.000	0.000	0.000

Table 4-B. results of multivariable correlation between learning styles and creativity

Statistical index Variable	N	Multivariable correlation coefficient R	Determination coefficient R^2	Multivariable correlation coefficient Statistical validity	Significance level α
Concrete experience learning style	200	0.702	0.49	8.466	0.004
Reflective observation learning style					
Abstract learning style					
Active learning style					
Creativity					

With regard to the results of the above Table, it is observed that the multivariable correlation coefficient between different learning styles and creativity score is 0.720 which is larger than the correlation coefficient of the Table at the confidence level of 0.01. Therefore, there is a meaningful relation between learning styles (concrete experience, reflective observation, abstract conceptualization, and active experimentation) and creativity of the students.

Furthermore, the computed value of (R^2) is 0.49 indicating that 49% of the creativity scores is related to the learning styles (concrete experience, reflective observation, abstract conceptualization, and active experimentation) and the remaining 51% depends on factors outside the model. Since the computed correlation coefficient might be due to sampling error or random sampling, computation of F ratio seems necessary. It should be specified whether the observed multivariable correlation coefficient after the computation of F is meaningfully different from null hypothesis or not. By computing the value of F ,

it is observed that it is equal to 8.466, greater than that of the Table at the confidence level of 0.01. Therefore, the null hypothesis is rejected and the result is in conformity with the result obtained from the multivariable correlation coefficient. So, there is a meaningful relation between the learning styles (concrete experience, reflective observation, abstract conceptualization, and active experimentation) with creativity. From among the four styles (concrete experience, reflective observation, abstract conceptualization, and active experimentation), the

concrete experience learning style enjoyed the most correlation with creativity, with a correlation coefficient of 0.702 which is larger than that of the Table at the significant level of 0.01. So, there is a meaningful relation between the learning style of concrete experience with creativity (by deleting reflective observation, abstract conceptualization, and active experimentation).

Table 5. Regression equation for the components of learning with creativity

Statistical index	Non-standard coefficients		Standard coefficient β	Statistical validity of correlation coefficient t	Significant level α
	B	Standard deviation			
Constant	131.97	3.58	---	37.624	0.000
Concrete experience	-0.400	0.138	0.202	-2.910	0.004

As it is observed, the regression coefficient for the variable of concrete experience learning styles is equal to -0.4 according to the Table, while the result of the t-test shows the meaningfulness of this coefficient. The computed t is larger than the t_{of} the Table at a significant level of 0.01; therefore, the null hypothesis is rejected. Therefore, there is a negative (reverse) meaningful relation between the concrete experience learning styles with creativity which is in conformity with the result obtained from correlation. In this analysis, the regression equation for the creativity of the students is: **(concrete experience) $131.971 - 0.4 = \text{creativity}$** .

Research question 4: is there a meaningful difference among the creativity of the students of different majors (mathematics, humanities, and experimental sciences)?

To answer this research question, the one-way analysis of variance (ANOVA) was used. The results are presented in the following Table.

Table 6. Variance test

Significant level	df 2	df 1	value
0.269	217	2	1.344

The results of the above Table show that statistically there is no meaningful difference among the variances of creativity of the students of different majors in the comparison test among the variances ($p\text{-value} > 0.05$). But, the results of Table 7 show that there is a meaningful difference among the creativity means in different majors.

Table 7. Regression equation of learning components with creativity

Sources of changes	Sum of the squares	df	Sum of squares df	F ratio	Significant level α
Intergroup	39.139	2	19.570		
Intragroup	197007.638	217	907.869	2.534	0.002
Total	197046.777	219			

With regard to the data analysis, it is observed that the F ratio computed for the purpose of comparing the creativity scores of the students in different majors (2.534) was greater than the Table F (at 0.05

levels). Therefore, it can be concluded that there is a meaningful difference among the rates of the creativity of the students of different majors. The results obtained from the computation of the post-experimental or Tukey post-hoc test (HSD) are presented in the following Table:

Table 8. Tukey Test

Statistical index Major		Mean difference	Standard error (SE)	Significant level (α)
mathematics	humanities	*0.2200	0.05382	0.000
	experimental	0.1200	0.05444	0.124
experimental	humanities	0.0700	0.05002	0.500
	mathematics	-0.1200	0.05444	0.124
humanities	mathematics	*-0.2200	0.05832	0.000
	experimental	-0.0700	0.5002	0.500

With regard to the Tukey test it is observed that there is a meaningful difference between the creativity of the students in humanities and mathematics majors.

In other words, the mathematics students enjoy more creativity relative to those in humanities. But, there is no meaningful difference between the creativity of the students majoring in experimental and humanities

as well as students majoring in experimental and mathematics.

DISCUSSION AND CONCLUSION

Question 1) the results show that there is a meaningful difference between the students learning styles and their majors. This difference stems from humanities. With regard to the abundance of styles in different branches, it can be said that most of the students majoring in experimental sciences use the convergence style and those in humanities use the contingency style more than other majors, while those majoring in mathematics use the assimilation style. These findings are similar to those of Yazdi (2001) and Masoumifard (2010).

Question 2) the results of the research witness the fact that there is a meaningful difference between the creativity mean of the students on basis of learning styles and this difference results from the creativity score of the students in two styles of assimilation and divergent; in other words, the creativity of the students who use the assimilation learning style is more than those using divergent learning style. The findings are consistent with those of Lorgani (1998), Miranssari (2000), Rezai(2008), and Anderson (1998). Since different styles of learning affect the creativity and academic achievement of students, it is therefore required that teachers be aware of the manner and types of learning so that they can help their students in optimal use of different learning styles (Seif2000). Schneider also believes that since individuals are different, we should therefore recognize their differences and coordinate ourselves with them. Also, according to Kolb's theory, those who use the assimilation style enjoy higher ability for acquiring information, memorizing, and saving it in their minds. These people enjoy the ability to combine information in a justified and logical manner and pay more attention to the logic of a theory.

Question 3) the results confirm that there is a meaningful relation between the scores of learning style (concrete experience, reflective observation, abstract conceptualization, and active experimentation) with the creativity of the students. The findings of this research are consistent with the findings of (Rahbar, 2005), Talebi (2002), Amirkhani (2003), and Barari (2008). According to Kolb and

Fry, the learner requires four types of abilities to function effectively: concrete experience, reflective observation, abstract conceptualization, and active experimentation. That is, the learner should be able to completely, willingly, and without bias involve himself with experiences; he should be able to observe these experiences from different viewpoints and reflect on them. He should be able to create concepts and merge his observations with logically right theories. He should be able to use these theories to make decisions and solve problems.

Question 4) results show that there is a meaningful difference among the rates of creativity of the students in different majors and this difference results from the creativity of the students majoring in humanities and mathematics. Therefore, the students majoring in mathematics enjoy more creativity relative to the students in humanities. The findings of this research are in conformity with those of Barari (2008), Valleyzadeh(2007), and Rezai(2008).

With regard to the results, it is proposed that:

A) Educational planning and suitable teaching methods of learning styles for the students majoring in different disciplines seem to be necessary for an increase in the rate of creativity of the students and reduction of creativity difference of students in different majors.

B) Through familiarity with learning styles, teachers and educational planners can conform planning and educational methods to the learning styles of the learners.

C) Teachers should accept the fact that each student might adopt a special style of learning for different subjects, so they have to adopt an appropriate style and method of learning for each student.

D) Informing the individual of his learning style can prepare his background knowledge to adopt optimal methods for learning.

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MYTHS & BELIEF IN SRI LANKAN SOCIETY & THEIR EFFECTS ON WOMEN

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Abstract

Beliefs are born within the people of a community, society or a country. Beliefs can be both, true or false. People cling on to beliefs as they want to make themselves happy and satisfied. In The case of Sri Lanka, beliefs are tied to specific religions –Buddhism and Hinduism. Myths on the other had come down generations and tend to be tied to historical incidents. Different types of beliefs are harbored within individuals, from different areas within the same country. They are passed down generations and change from area and community.

Migration for commerce and improved opportunities means more people populate the Western province now than before. In typical patriarchal societies that are usually found in most Asian countries some traditional practices are based on beliefs and myths, and are both harmful and degrading towards women.

How does age-old thinking affect the women of today? The paper looks into common beliefs, myths and traditional practices of Sri Lanka and how they affect the progress of girls into womanhood. The study links beliefs, myths and traditional practices to the lives of women from both rural and urban settings, to understand how they shape the image of a ‘woman’ in Sri Lankan society.

Keywords: Myths, Beliefs, Traditional Practices, Women, Asian Cultures, Sri Lanka

INTRODUCTION

Woven on the loom of traditional and historical experiences is a complex fabric of conventions, beliefs, values, attitudes and prejudices that wind through levels of Sri Lankan society.

Women brought up in traditional or orthodox family milieus, especially middle-class believe that such sentiments are natural phenomena and are unable to see them as attributes of their social-economic background. Many women have defined their lower status as their destiny, because it is inscribed in their religious beliefs. HemaGoonatilake explains this as a struggle against accepted customs, values, attitudes and prejudices arising from various historical experiences. Women are taught to accept certain institutions as ‘natural’ while the man-made codes of

behavior provide the seeming rational (Goonatilake, 1976).

Despite recent achievement of been recognized as a Middle- income country progressive social and political development in Sri Lanka over the couple of years, Sri Lankan women continue to occupy a subordinate status. Entering public and private sector one might think that women share equal opportunities and wages as there are so many working in banks, hospital, schools and government institution. Many misinterpret this as an indicator of the status of women in Sri Lanka and argue that women are indeed better off compared with to women of other South Asian countries. However the hidden reality is that on the whole women hold minor positions with low status and pay in the workforce (S Jayaweera, 2007). Instead they are often subject to many discriminatory processes and forces in the work milieu, such as

sexual harassment and glass ceiling ((Hewamanne, 2008)(Jayathilaka, 2006). Many adverse structures and forces such as patriarchal social structures, women's role in the family, traditional values, rituals and myths, the division of labour and unequal pay and women's lack of participation in politics contribute to the continuing subordination of the Sri Lankan women(Herath, 2015). In patriarchal settings most important family decisions are made by males.

Wives seldom enjoy decision making power. After marriage almost all of them are taken to the bridegroom's house which may be the house of the father and mother –in law. One such practice of patriarchal practice that disadvantages women economically is the distribution of the family estate. Since the era of kings, estates have been inherited along the patriarchal kinship line. Daughters receive a dowry while sons enjoy the family estate, although the Kandyan Law clearly accepts women's property law(Ponnambalam, 1982). The Hindu Dowry system has taken a firm place in Sri Lankan society. Dowry where the property given by the bride's parents to the groom becomes the groom's property. However the Sinhalese system of the '*Dayade*' is falling back. A system where the property of the remains in her ownership. Even among the Muslims there is a Dowry system preferred over the 'Islamic Bride Price' where the groom has to pay the bride.

In this context a widow too is expected to be very meek and mild, calmly bearing her worries and agonies. As in the case of many war widows of the North, in most women-headed household are unemployed even though they are compelled to head families.

The reality the traditional beliefs, attitudes, social practices have kept women in subordinate roles in society is explored in the following sections.

Myths & Beliefs and Attitudes

Major impediments to women's progress in life are the paradigms endangered by myths, blind beliefs and patriarchal concepts that hinder their independence and dignity. Many examples could be quoted in folklore in this regard: 'Women are born with weak intelligence', 'the brain power of a woman is spoon's length long', 'Women are the weaker sex' and 'Women are ever changing and therefore not trust

worthy'(Herath, 2015). The present understanding of the present Sri Lanka is that these fallacies and negative ideas about women are found in the villages but this is not the case.

According to Obeyesekere(1984), Sinhala children are socialized into practices of shame-fear (*lajjabaya*) to be ashamed to subvert norms of sexual modesty and proper behavior and to fear the social ridicule that result from such subversion from a young age. Notions of superior morals and undisturbed traditions that village women are naive, innocent (sexually ignorant), timid are unadulterated bearers of Sinhala Buddhist Culture. Men too desired '*pure*' women who as supposedly ideal women were ignorant of all things sexual.

There are beliefs related to most of the events of a person's life in Sri Lanka. As people living in different areas have practices that vary, and it can be seen in the rituals for the same event. A common example for this can be seen in the rituals done in child birth. People in Kandy make it a habit to take the newborn child especially if it's a boy to the Temple of Tooth and make an offering in the name of the child. People in some areas in the North-Western province have a habit called '*pinidiyapanam wen kireema*'. To a vessel containing coconut oil is added saffron and sandal wood. It is taken to a *devale* with the newborn child and an offering is done for the child by the *adura* in the *devale*.

Even today the birth of a girl is not celebrated in the same way as that of a boy, although this attitude is changing in the urban setting. While the dowry system may be influencing this attitude many still believe that a girl is born as a result of a sin committed in the past births. Therefore the common belief is that one must cultivate more merits during this life to earn the reward of rebirth as a male in the next.

In providing education and developmental skills, the tendency is to bestow these in the male children of the family as they would most probably be providing aging parents with the necessary economic support. A woman may be consoled by having a daughter as an assurance of being cared during their old age. During the course of their upbringing, rural girls are often denied opportunities to make decisions about their

life. Such a child born equal but raised in a confined environment, may be considered simple and 'backward', not because she is retarded, or physically deformed or psychologically weak but because she has never been given the chance to develop her abilities. A girl brought up in a family holding traditional values will be taught to be polite, innocent, bashful and feminine (Jayawardena, 1994).

Beliefs & Myths in Legends

Women's subordinate roles in society is repeated several times over in the annals of history and she is portrayed as one who is incapable of making decisions affecting her life. The use of 'horoscopes' to make predictions of a woman's destiny is highlighted in one of the earliest legends of Lanka. The legend of Prince Vijaya and Kuweni gives evidence to the prevalence of beliefs from ancient times. According to the Mahawansa Kuweni's horoscope had said that she would one day marry a foreigner. It is said that Kuweni had three breasts and the horoscope had also said that when she meets her destined mate the abnormality will disappear. Kuweni believed this. And when Kuweni met Prince Vijaya, the prediction came true. The Mahawansa says that Kuweni, without first going to see Prince Vijaya and his crew in her true appearance, had disguised herself into that of a bitch of five colours and went towards them. Keeping with the prediction she married and had two children by Prince Vijaya. But Prince Vijaya was not faithful to her, and their marriage failed due to the lack of trust.

Including these folktales in social studies texts for school children and repeated reference to Kuweni (considered a woman of different race than King Vijaya) influence the thinking of both boys and girls. These myths and beliefs may well be leading to the idea that men are privileged while women are subjugated to serve.

Another legend that is historically linked to Sri Lanka and mentioned at least in fifty places across the country is the legend of Ravana, King of Lanka. Ravana is the primary antagonist in the Hindu epic, the Ramayana. He is depicted as a Rakshasa (demon). In the Ramayana, Ravana kidnaps Rama's wife Sita to exact vengeance on Rama and his brother Lakshmana for having cut off the nose of his sister Shurpanakha.

Although modern times are changing reference to many such legends, myths and beliefs at religious and cultural locations, through illustrations, songs and literature we bring about a culture that promotes unequal power and lack of understanding of the women's position in society.

Beliefs & Traditional Practices

When a girl reaches puberty, according to Sinhalese and Tamil traditions there is a common belief that she should not be seen by male until a purification ceremony is performed at an auspicious time matching her horoscope to bring her out of the room she has been isolated. Rituals involve breaking of a coconut, dressing the girl in white cloth for purity and getting a woman of a lower caste (the '*dhobi*' or laundry woman) to bath the girl are considered important for the occasion. The occasion is celebrated after two weeks of her first menstruation and 'bathing ceremony' and many presents mainly gold jewelries and nice clothes are gifted at a function where men folk also attend. While predictions given by the *Gurunnanse* (respected teacher) based on the horoscope reading is expected to guide the girl's life through womanhood the party itself advertises the availability of a girl who is ready to get married.

Menstruation is considered impure (*killi*) and girls and women are isolated during religious performances in Kovil and Devale. These beliefs have been an influence on Buddhist ceremonies as well which is one of the reason men are given precedence over women to perform religious rights during all night *pirith* chanting, *bana* (reciting of damma) and *dana* (offering of meals to Buddhist monks). Generally the pollution (*killi*) caused by death lasts three months, by child birth one month, by a maid attaining age fourteen days and by monthly turn of women till she bathes.

People who believe in materialistic sciences may show uncertainties about the beliefs. But still almost everyone engages in auspicious activities in functions like the inauguration of building a house. People believe that there are *bahirawas* (deity) living in the ground and that by building a house in a place, they are capturing their habitats. As an excuse and an offering is common practice to hold a *bahirawapooja*, before building a house. It relieves the minds of the

doers, that no one is angry over the building of the house in that place. The story about the building of Ruwanwelisaya (Buddhist Chaitya in Anuradhapura) in a place where a '*ruk devathawa*' (a goddess living in a tree) resided and naming the stupa following her name is a famous example for offerings done before building on a land.

The case of Sriyani of Ihala Madurangala, Badureliya illustrates the importance attributed to such traditions:

Sriyani Padmini (42) of Palindanuwara is a woman of a woman-headed household and member of a low-income family. She was fortunate that a few philanthropists combined to support her in putting up new house in order to provide security for the aged mother and two adolescent children. Before work could commence on construction the woman spend part of the money give for the house to conduct the traditional *bahirawapooja* in the presence of the village people. 'Partly this is considered a norm in the area' commented Wanigatunga, a civil society leader 'and to a great extent their ignorance and fear of the unknown in villagers. What you don't see you believe!'

Beliefs can be true or false. People cling on to beliefs as they want to make themselves happy and satisfied. Another example of people's attempt in safeguarding things they value highly is the traditions followed when a new vehicle is bought. People in Sri Lanka commonly belief that '*aswaha, katawaha*' (evil eye, evil words) can be warded off by tying chilies and limes strung with a piece of wire on the front buffer of the vehicle. They also go to the Kataragama devale and tie a *pandura* (coin) to obtain protection. However everybody understand that neither the vehicle nor the passengers are actually safer because of this yet the practice continues.

Nishani Jayampathy (28) is an educated youth residing in urban Piliyandala, a Business Executive in a leading corporate. His comment on this ritual explains how people in urban settings feel about performing rituals.

'When I bought my first car a Nissan March I was so proud of my achievement even though it was purchased with the help of a small loan from my office. My parents insisted on me taking it to the *devale* and tying a *padura* (offering) and performing a

pooja for blessing on the new possession. I did all these and never had any issues regarding my car.'

We could assume that motivated by ritualistic actions people are more careful of the usage of material things they value and hence look after what has received with blessing for protection with meticulous care.

Healing Rituals & Traditional Practices

There is a strong belief among ritual dance performers that there is a massive transformation in them both mentally and physically, a kind of a trance when they wear a ritual mask and dance, to the tune of the drums. Both, the patient afflicted by the evil spirits and the *Kattadiya* are also under a trance in the height of the ritual performances. The blasting sounds of drums, the burning of incense and of numerous verses create a bizarre atmosphere suitable for the ritual. It is a common experience of those who have watched the *Gam Madu* ritual performed annually in many parts in Sri Lanka that even onlookers could be seen in ecstasies.

Even today Sri Lankans accept, both the native system of treatment and healing rituals as effective ways of curing ailments. Mostly in the rural sector *Thovil* the healing rituals are practiced. It is evident that mask carving and mask dancing coexisted with exorcism and Ayurveda since very ancient times.

During the elaborate procedure numerous verses are recited and the silence of the whole area from evening to dusk is disturbed by the deafening sound emanating from the beating of drums. Kolam dance performance is comprised of numerous episodes and diverse characters perform their roles representing the traditional rural setting of Sri Lanka in addition to their sufferings under the colonial administration. Members of the traditional hierarchy of Sri Lankan royalty and all categories of servants appear on the stage where the Kolam dance is performed. Before the arrival of the King and Queen the Headman, the Chief of the district, the Mudali, Arachchi, the King's Guard and the soldiers make suitable arrangements on the stage for the arrival of the royalty.

There is a popular myth related to the origin of Kolam dance. The consort of the imaginary King

MahaSammatha had been affected by pregnancy craving to see a mask dance but in that era nobody in his kingdom had seen or heard anything of mask dances. Day after day the condition of the Queen became worse. Realizing the plight of the Queen, God Sakra requested God Visvakarma who was considered as the divinity of arts and crafts to invent masks and the lyrics for the mask dance to satisfy the desire of Queen Mahasammatha.

The following morning masks and lyrics for Kolam dance form were found in the royal garden. King Mahasammatha ordered his kingsmen to study the lyrics and perform the Kolam dance. Queen Mahasammatha was happy and satisfied after watching the Kolam dance and her pregnancy cravings disappeared. In Sri Lanka wherever Kolam dances are performed this mythical origin has been highlighted by the arrival of the pregnant Queen towards the stage. All verses used in the Kolam Dance form are full of sarcasm and punning on words by the characters and the masks worn by them are rich enough to make the audience hilarious throughout the performance.

Although Kolam dances and masks worn during ceremonies add to the rich cultural heritage of Sri Lanka, as with legends and common beliefs is contributing to the prevailing social norms and attitudes that negatively portray women in society. While exorcisms and a limited number of supernatural powers are granted on women, in general it is the men (*kattadiyas*) who perform rituals and Kolam dances, and this has been the tradition right throughout. Two examples drawn from the scripts of Kolam dances are given below to illustrate the portrayal of women:

Gama Kathawa (village story): A pregnant woman narrates how she became pregnant in one of the episodes of Kolam dance full of humour. In this episode, the village headman abusing his powers made amorous advances towards a married woman known as Ethna Hani. There were two foolish brothers in the village and the elder brother got married to Ethna Hani. In order to get rid of her husband the village headman said that the King had ordered to send the two brothers every night to look after some far away fields.

One day when they were guarding the fields these two foolish brothers mistook moonlight as sunlight and came home thinking it was morning. Ethna Hani did not open the door at once but first covered her lover the Village Headman with a cloth. Next she covered herself with the cloth to cover up her identity. She pretended to be mad and an exorcist who happened to be a friend of the Village Headman appeared to drive away the evil spirits. During the ritual the Village Headman appeared disguised as a demon and frightened the two brothers who ran away from the scene. Later Ethna Hani and the village headman started dancing together.

The story behind a second Kolam dance is given below.

In **BadadaruKolama** (Pregnant woman's story) a pregnant woman appears on the stage crying and complaining of pregnancy pains. *Kariyakaravana* (narrator) asked her to stop her crying. She responded saying that all men in the audience were responsible for her condition. They promised to give her clothes and jewelry wishing to marry her but they never kept to their promises. *Kariyakarawana Rala* (narrator) admitted that she had been cheated by the men and her suffering was also due to their misbehavior. Arrangements were made to get down a midwife who helped her to give birth to a child. She appeared once again on stage this time with the new born baby in hand.

As Hewamanne (2008) explains the beliefs among garment factory girls in the FTZ rural Sri Lankan women desired marriage and sincerely believed that their relationships with their boyfriends (soldiers) would end up in marriage. Although they firmly held that their boyfriends were not bad men, workers knew these relationships could result in misery and even tragedy. Given the dominant culture expectations of staying a virgin until marriage and the taboo on premarital sex, women frequently talked about men having sex with women and then abandoning them as a crime (*aparadayak*). Ironically the same word is used for the actions of a man in the case of rape, murder or any crime. Leaving the victim to battle with the trauma of the violence meted and the stigma that follows survivors of rape.

The Temple of the Tooth in Kandy is well known for the religious and cultural value that has stood for time immorial since when the place was erected to host the 'tooth' of the Buddha. The annual *Perahara* during August marks an important cultural event for Sri Lankans and tourists alike. The final of the *Kandy Esala Perahera* is marked by the *Walli Yak Mangalya* at the *Maha Vishnu Devale*, which is performed for seven consecutive days. At the end the performance *Gara Yaka* appears at the *Maha Vishnu Devale* where he has been called by the performing dancers and seeks a prey to depart in peace. During this period of seven days, those villagers who know the existence of the ritual come to offer vows and also make vows. These vows are tied on the 'tail' of the *Yakdessa's* headgear and not at the *devale* proper. Those who come, redeem the vows they have made the previous year which have been successfully granted, and go back satisfied.

It is no secret that young women are brought by their mothers to tie vows in search of their future husbands, and in numerous instances these have come true. Again and again traditional practices are making women in our society take on subordinate roles and enter into marriages which seems to be set on god's favour, dowry or due to the girl's beauty and acquired feminine qualities that was described earlier.

Three sources of superhuman influence from which the Sinhalese peasantry expects good or ill are (1) the spirits of disease and poverty (2) tutelary spirits of various grade and (3) planetary spirits. According to Arthur Perera there are several important spirits of disease such as *Mahasona Yaka*, *Riki Yaka*, *Kalu Kumara Yaka* and *Sanni Yakka*. *Mahasona* inflicts disease like Cholera and Dysentery and presides over graveyards and where three roads meet.

According to folklore in ancient times two giants Jayasena and Gotimbhara met in single combat and the latter knocked off the head of Jayasena. The God Senasura tore off the head of a bear and placed it on Jayasena's body who rose up alive as the demon *Mahasona*. (Perera, 1917). The study of traditional practices and beliefs in the rural villages in Kalutara district showed that people are reliant on favour from these spirits to solve day to day problems such as sickness, delayed marriage of girls, blocks in the progress of attainments in education, social status and

business. The *Kattadiyas* who perform these rituals seem to be exploiting their fears and taking advantage of their despaired situation to earn money. As one leader in of a civil society group in Palindanuwara, Kaluthara, Wanigatunga said "people's beliefs and traditional practices is one of the contributors to their perpetuation of poverty".

The book on Sinhalese Folklore. Arthur Perera (1917) illustrates the character and capabilities of the four spirits in this manner:

Kalu Kumaraya is a young devil of dark complexion who is seen embracing a young woman; he delays conception, child births and causes puerperal madness. There was once a Buddhist monk who was *Arhath* with super natural power of going through the air. In one of his aerial travels he saw a beautiful princess, falling in love with her lost at once his super powers dropped down dead and became the demon *Kalu Kumaraya*.

Riri Yaka a monkey faced demon that carries a cock in one hand, and a club in the other with a corpse in his mouth is present at every death bed and haunts fields causes fever, flux of blood and loss of appetite and has a crown of fire on his head.

Sanni Yaka has cobras twisting around his bodies with a pot of fire near him, holds a rosary in his hand and holds a trinity with *Oddi Yaka* and *Huniyam Yaka*. He was a son of a queen put to death by her husband who suspected she was unfaithful to his bed. As the queen who was pregnant was being executed she said, that if the charge was false the child in her womb will become a demon and will destroy the King and his city. Her corpse gave birth to *Sanni Yaka* who inflicted mortal disease on his father and depopulated the country.

When any of these devils have inflicted a human the prescribed form of exorcism is a devil dance. The ceremony consists of a series of brisk dances by the exorcist and his men, in the presence of the patient to the accompaniment of chants (*kavi*) giving the life history of the devil with a twirl of blazing torches. This lasts from evening till dawn till the exorcist lie on his back and calls on the devil to cure the patient (*yadinna*), incantations follow (*mantra*) and the sacrifices follow. For *Riri Yaka* a cock which has been placed under the altar or tied to the foot of the patient

is killed and thrown into the jungle. For *KaluYaka* an earthen pot which has been placed on the altar is broken, for *SanniYaka* the offerings are conveyed in a large bag and thrown to a stream or river, for *MahaSona* the exorcist feigns death to deceive the devil and is carried with mock lamentations to a burial ground.

Kattadiya is believed to be more than just a witch-doctor, s/he is an exorcist between the worlds of human and devils and to some the answers to every problem. While all the devil dances, rituals and ceremonies make Sri Lanka a rich and interesting culture-hub, these charlatans do nothing but exploit the ignorance and fears of hapless people who don't know any better. Various intricate *tthovil* ceremonies are costly business and the Kattadiyas are enjoying a flourishing ventures while steadily draining their clients money. Both in rural and urban setting people's beliefs in the supernatural are in many cases been the barriers to realistic problem solving and progress in life.

Of the four spirit mentioned the *Kalu Kumara* is seen mostly affecting virgins. According to folklore a young girl should not walk at dusk or fry any sweetmeats also at this time lest the devil possess you. Many are the stories coming from rural villages where young girls who have supernatural bindings with this dark demon and the mothers take them to the *devaleKupuralato* get rid of the possession by spirit and to be free of its malicious grasp of the young girl. The belief in this lesser God is highly detrimental to girls who have come-of-age, as it prevents them from leading normal lives, socializing with people and restrains the development into a confident woman. As the parents especially mothers become over protective, girls who have been told that they have been possessed by the *KaluKumaraya* eventually do develop a certain repulsiveness towards males and as a result of the narrow-thinking do not mature sexually. It is no wonder that women possessed by the *KaluKumaraya* (Dark prince) is said to kick their husbands off their bed and suffer from problems in conception. It is a clear case in which not only do the beliefs affect the girl concerned but also others who partner her in life making it impossible for normal family life.

One case of a woman in Bulathsinhala, Kalutara is woman who now operates as a spiritual doctor herself. She came under influence of the *KaluKumaraya* at the age of 15 years. **TanujaPadmini (35)** said:

Her mother took her to several places to do a *gurukama*, but they failed. It was an *Adurek* (witch doctor) in Ratnapura who was able to cure her from being 'possessed', delirious and acting crazy. Prior to this she was awarded at the mental hospital in Angoda for treatment. People who get treatment at the Mental hospital are considered crazy and sometimes even cornered in society because of the fear in others that they too may become crazy and lose control.

Her beliefs and experiences later led her to be an agent dealing with spiritual and supernatural powers to bring healing in patients, making vows, and keeping vows (a Pooja when something you ask for is given), breaking of *bandana* (bindings), *dehikapanawa* (cutting of lime to remove spells). In her aid is a '*istadevatha*' a minor deity, who's often a close relative believed to be protecting help Tanuja in seeing into what has taken place and making predictions into the future ('*penakiyanawa*'). Something similar to crystal gazing is attempted by means of a betel leaf smeared with a magical oil; a female deity (*Anjanan Devi*) appears on the leaf and reveals what the gazer seeks.

For Tanuja the talent she has inherited does not give her much gain economically because she has decided to use her gift to heal people who like her were possessed by demons or came under a spell done by enemies. However visiting her home nested in a rubber estate, revealed that she now received respect from the villages. This further strengthens the belief of the village people in myths and traditions and that these are closely interwoven into the fabric of their lives, challenges and daily routines.

Tanuja had erected small pillar boxes for three minor gods and had one main *devale* built in the garden to host the five main Gods. Inside each of these places were small statues or framed pictures depicting Gods and in front of these oil lamps were lit in their honour. She meticulously sweeps and cleans the area and on the day of our visit had applied a mixture

of cow-dung and clay to purify the premises. Although the mixture smells of a few days when dried it is supposed to be having antibacterial function and serves well in areas that are frequented by many people.

Tutelary deities are of three of grades according to Arthur they are (1) Gods (2) Godlings and (3) Divine Mothers. The Gods are MahaDeviyo, NathaDeviyo, KataragamaDeviyo, SamanDeviyo and Goddess Pattini.

MahaDeviyo is identified with *Vishnu*, and is the guardian deity of the island, and is a candidate for the Buddhahood; a miniature weapon in gold or silver is placed at his shrine as a votive offering.

NathaDeviyo is the future Maitri Buddha and is now biding his time in the Tusita heaven; Kandyan sovereigns at their coronation girt their swords and adopted their kingly title before his shrine.

SamanDeviyo is the deified half-brother of Rama, who conquered Ceylon in prehistoric times, and is the guardian spirit of Adam's Peak; pilgrims while climbing the sacred hill to worship Buddha's footprint, call on him to aid their ascent. A miniature elephant in gold or silver is the usual votive offering to him.

KataragamaDeviyo is the most popular of the gods; a prehistoric deity, to whom a miniature peacock in gold or silver is the customary votive offering. He is said to be the six faced and twelve handed god *Kandaswamy* who on his homeward return to Kailasa after defeating the *Asuras* halted at Kataragama in South Ceylon; here he met his consort *Valli Amma* whom he wooed in the guise of a merchant; when his advances were scornfully rejected, his brother assuming the body of an elephant appeared on the scene and the terrified maiden rushed into her suitor's arms for safety; the god then revealed himself and she became his bride. The god *Ayiyana* invoked in the forests of Ceylon is said to be his half-brother.

Pattini is the goddess of chastity. The three eyed *Pandi Raja* of Madura had subjugated the god and was getting them to dig a pond near his royal city when, at Sakraya's request, *Pattini* who resided in Avaragiri *Parvata* became conceived in a mango fruit. After it was severed from the tree by an arrow

of *Sakraya*, it remained suspended in the air and on *Pandi Raja* looking up to observe the wonder, a drop of juice fell on the third eye in the middle of his forehead by which he lost his power and the gods were liberated. *Pattini* was found inside the mango as an infant of exquisite beauty sucking her thumb when she grew up she performed wonders and ultimately disappeared within a *Kohomba* tree (Margosa). An armlet or a miniature mango fruit in gold or silver is placed at her *devala* as a votive offering.

These deities are usually worshipped in separate *devalas* which are in charge of *Kapurala*. Since ancient times *devalas* have been inside temples due to the direct influence of Hinduism in Buddhism and the intermingling of beliefs in these two major religions. Occasionally they are found in homes and places specially setup to do witchcraft such as Tanuja's place.

Of these Gods women and girls specially seek favours from Goddess Pathini to become as beautiful and fair in complexion, to find suitable marriage partners and to have children. Another Goddess found more commonly in Hindu temples but also in Buddhist temples is Goddess Kali. She is a frightful blue skinned female deity holding weapons and corpses in multiple hands. The Goddess is used to seek revenge and engage in battle.

One woman spoken to in a village in Kalutara recalled an experience of abuse during her childhood. She said:

When I was eleven years old, a complete stranger came up behind me and put one hand down my shirt and the other between my legs. He made a sort of chirping noise, a "come on" sound like you'd make to a sluggish animal. This being prior to my current non-violent phase, I turned around and punched him in the face.

I imagine that every girl who experiences molestation or rape must have a voice (internal or external) that chirps up and says "that wasn't really rape" or "it wasn't rape enough" or it wasn't "forcible" or "it was just teasing". People even deny it could never have happened only a crazy child would lash out when she is teased - but for me it felt good to have my defense. It's hard enough to call it rape in the privacy of one's own head and heart. It is hard to face oneself in the

aftermath, much less one's attacker and detractors. Do you tell your mother? Does your faith fail you or help you forward?

I see strong-looking divine ladies that are role models to our broken selves. When we feel like a helpless child we must become the fierce mother. Kali, bristling with weapons and dripping with blood, looks like something I need to conjure in myself: a spiritual warrior to defend me from further harm.

Eve-teasing and sexual harassment is not uncommon in the country. The culture and traditional practices does nothing in support of giving a positive image of a woman. Mother in families who have adolescent sons also do nothing to groom her sons to respect and understand females but continue to spoil them because of Patriarchy the 'boy' child is always favoured.

Kem methods, are another belief used in healing diseases in humans, animals and to protect the harvest. This is described as a non- logical practice, in which the reason why and how the results are obtained cannot be sensibly explained. However *kem* methods are commonly used even nowadays and results are gained if done correctly.

Beliefs which bring misfortunes belong to the black magic type are called *gurukam*. *Diva ugurubandeema* (sore throat) is an example for this black magic where the voice and the talent of speaking is cut off by a *kattandiya*. It is said that singers and talented speakers requested the *kattandiya* not to do *diva ugurubandeema* for them, before participating in an event, in the past. Also a person doing *washi gurukam* can make a person become very sick suddenly, or make a woman fall amorously for a particular man. These spells when noticed must be terminated through the consultation of a witch-doctor.

Wisabandeema (blocking the poison) is another belief, which is done by a village *vedamahattaya* (Ayurveda doctor). When a person has been stung by a snake, and taken to a *vedamahattaya* in a different village, the *vedamahattaya* of the patient's village considers it a disgrace to him, and does *wisabandeema*, which make medications ineffective for the patient. Since this is a known fact, the patient is advised to see the village *vedamahattaya*, by the

consulted non-native *vedamahattaya*. *Kali meniyo* is considered a spirit which helps in punishing an enemy.

The third supernatural power that all Sinhalese believe in is the effects of the planetary forces. According to Arthur Perera (1917) Planetary spirits influence the life of a person according to their position in the heavens at the time of his birth. This could be found out by keeping a small amount folded on a beetle leaf and the *Gurunnanse* (Astrologer) will read the birth chart/ horoscope to foretell the future. Sri Lankans go to extremes in using this as a tactic to plan their lives like finding education avenues to pursue, suitable marriage partners and ways and means of warding off mal-effects coming from various planets. This is usually done by doing *bodhipoojas, baliya* and wearing a ring with a matching stone to counteract planetary forces.

The planetary forces are recognized as:

- Sun (*Ira*) rides on a horse entwined with cotton leaves (*Imbul*) with an emblem of good luck (*Sirivasa*) in hand and propitiated by the *Santi MangalaBaliya*; sacred to him is the ruby (*Manikya*).
- Mercury (*Budahu*) rides on an ox with a chank in hand, entwined with Margosa leaves (*Kohomba*) and propitiated by the *SarvaRupaBaliya*; the emerald (*Nila*) is sacred to this planet.
- Mars (*Angaharuva*) rides on a peacock with an elephant goad (*Unlmsa*) in hand, entwined with gamboge leaves (*Jcolon*) and propitiated by the *Kali MurtaBaliya*; the coral (*Pravala*) is sacred to this planet.
- *Rahu* rides on an ass with a fish in hand entwined with screw pine leaves (*Vetakeyiya*) and is propitiated by the *AsuraGiriBaliya*; the Zircon (*Zomada*) is sacred to *Rahu*.
- *Khetu* rides on a swan with a rosary in hand, entwined with plantain leaves (*Hemi*) and is propitiated by the *Krishna RakshaBaliya*; the Chrysoberyl (*Vaidurya*) is sacred to *Khetu*.

- Saturn (*Senasur.*) rides on a crow ; with a fan in hand entwined with banyan leaves (*Nuga*) and is propitiated by the *DasaKrodhaBaliya* ; the Sapphire (*Indranila*) is sacred to this planet.
- Venus (*Sikura*) rides on a buffalo with a whisk (*chamara*) in hand, entwined with *Karanda* leaves {galidupaarborea) and is propitiated by the *GiriMangalaBaliya*; the Diamond (*Vajra*) is sacred to this planet.
- Jupiter (*Brahaspati*) rides on a lion with a pot of flowers in hand, entwined with *Bo* leaves and is propitiated by the *AbhayaKalyanaBaliya*; the Topaz (*Pusparaga*) is sacred to Jupiter.
- The moon (*Chandra*) rides on an elephant with a ribbon in hand entwined with Wood-apple leaves (*dimbhul*) and propitiated by the *Soma MangalaBaliya*; pearls (*Mittu*) are sacred to the moon.

Horoscopes are consulted for the birth, attending-of-age, and marriage, and during bad spells of life by a woman. Those Astrologers look at a horoscope of a woman differently from a man, of a girl child differently from a boy child because traditions and culture define them in gendered roles. These interpretations of future happening can work well or adversely for a woman. Being a strong believer of this supernatural power can make a woman already who's subordinated in her role in home and office space feel helpless – which when the horoscope reader suggests seem witchcraft could salvage the situation.

Some ceremonies cost huge amounts of money. *Alsomantras* place on rings made with matching stones to counteract ill forces or *mantras*, placed inside of small metal talismans known as *Sura* although expected to lessen problems, add to the cost affairs. A woman who is waiting to get married may use most of her saving to employ tactics to find a suitable partner, a mother will spend more money on *bali* than on extra classes in supporting her children's education and an average family may spend nearly as much on consulting medical doctors as with the witch doctor in order to help someone with sicknesses.

Whether in the city, suburban or rural setting this pattern has not lessened in spite of great strides in technology and development.

Beliefs and traditional practices stand strong today as it was in the period of Arthur Perera's book on Folklore of Sinhalese (1917)

CONCLUSION

Beliefs are very important for the good maintenance of society, as they bring about a rich culture and a strong bond among people. On the other hand myths, beliefs and traditional practices in our country that is interwoven with patriarchal structures and the historical experiences are observed to be detrimental to women. Several examples of mythical stories and traditional practices explained such as *kolam*, *bali*, *thovil* and *Shanthi karma*, are portraying women in a negative light. At a time when many civil society groups and a number of noteworthy persons are attempting to share the rights and privileges equally with women, it seems age old beliefs, myths, and traditional practices are gravitating these efforts from reaching the desired goal posts.

The fact that these traditions are strongly believed by people from different levels of society and that both men and women are equally in favour of beliefs in the supernatural powers than on reality means breaking away from these milieu is a challenge ahead of us. The danger in seeking solutions using various forms of exorcism and witchcraft is that victimized women (and men) are likely to believe their fate was decided by these the gods and planetary conjunctions.

There is source of inspiration in the message given by Ligia Bolvar (1998) "The dignity of the individual is immutable; it is the same all times and in all places, and its essence transcends cultural particularities" as we attempt to give women their due place in Sri Lankan society.

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