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Dr. Subodh Kesharwani
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General Data Protection Regulation (GDPR) is an Important Phenomenon in EIS Privacy Parameter

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GLOBAL JOURNAL OF ENTERPRISE INFORMATION SYSTEM

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कर्म:Society

Kedar Amar Research and Academic Management Society

Karam Society

Kedar Amar Research and Academic Management Society known for it's acronym KARAM Society has been established in the year 2009 keeping in dream the empowerment and comprehensive expansion needs of society. The society has been established as a "Not for Profit" Company under the societies registration act, 1860 with a Registration no. S/65067/2009. In the present state -of-affairs, the KARAM Society engaged in the advancement of medical knowledge and provision of assistance to medical students and professionals.

The mandate behind KARAMS is to make certain transparency, accountability and adherence to corporate governance norms. Recently KARAM Society had put it's ware bouts in an online publishing and collaborated with Open Journal Inc. and Publishes two hard core empirical research journal on information systems (www.gjeis.org) and in medical science (www.agems.in). Both the Research journals are now available in a Brick-&-Mortar mode also with an ISSN and eISSN Numbers respectively. The rationale of the KARAM Society is to promote empowerment and inclusive development with an emphasis on social, digital and financial inclusion; strengthening of delivery systems and participatory democracy for bringing about a systemic change to help meet development objectives better. During the past two decades founder members of KARAM Society have travelled transversely the country to learn critique and encourage social, digital, medical and financial inclusion. In the process, knowledge repositories have been created on what works—the most excellent practices—actively engaging all stakeholders from policy makers and civil society to ordinary citizens. The KARAM will allocate this knowledge for progression and nation-building all the way through e-learning modules and virtual platform for practitioners and publishing video documentaries on our portals. Recently it had started new portal http://open-journal.com which is backed by the gamut of great academician from different part of the world.

In the last few years KARAM Society conducted numerous health camps in a charitable mode in a various districts of Haryan, Rajasthan, Uttarpradesh, New Delhi, etc. which are organized with support from corporate, civic bodies, the government, NGOs and individual volunteers. KARAMS has conducted over 75 general health camps till date and has benefitted more than 25, 000 people directly. In line with the policy to provide healthcare services to the community around our facilities, KARAM Society has started a Mobile Medical launched Mobile Medicare Unit (MMU hereafter) to address the health concerns of older persons living in urban slums. Technical aids are provided to the poor elderly that could improve their quality of life and make them independent. Eye camps are organized every year now and then to screen beneficiaries for cataract. Awareness about diseases and healthy living is an important component and constant effort by KARAM Society is being made in this direction. The team of KARAM SOCIETY India consists of a medical doctor, a community health mobilizer, a pharmacist and a social protection officer. The team will not only provide curative medical services but will also raise public awareness on preventive and promotive aspects through awareness generation and multi-disciplinary medical camps, etc.

KARAM Society best practices have been documented as information cards, video case studies, policy and white papers that are consistently shared with group of people at great, so that it can become a wider learning process. Having done all the above driven by individual enthusiasm and excitement, the members now felt the need to create an institutional framework that not only takes this work forward and emerges as a key expansion institution but also helps in facilitating implementation mechanisms such that the benefits of wide-ranging development are actually received by society.

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Volume 10, Issue 1, January-March 2018

Contents

Contents

Research Thought

Homage

Biographical Note of a Luminary in an area of EIS

Call For Papers

Global Journal of Enterprise Information System

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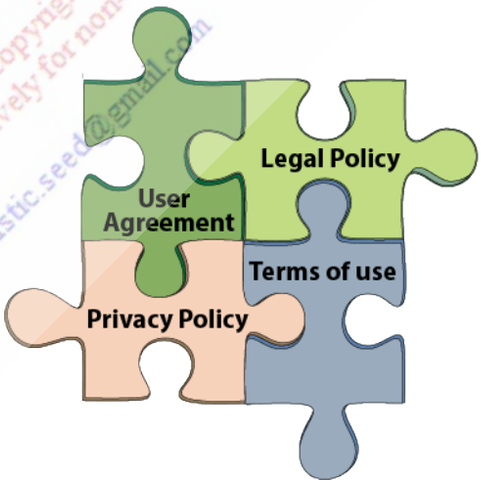
Tinge Instigate from Editor's Offset

General Data Protection Regulation (GDPR) is an Important Phenomenon in EIS Privacy Parameter

The great Quote "*When the things get tough, the tough gets going*" which I had learnt and remember during the preparation of my MBA (GD & PI) in the year 1996. There were lots of my colleague and few other batch mates who all had visualized for launching start-ups which could either be a venture or enterprise or journal or any other creative initiatives but the important part which one need to take care is a sincerity and dedication that signifies the killing instinct. But statistics shows a different picture and raise a question that "what would be a success ratio amongst them"? the answer is clear and simple "How much pain you had taken"?. GJEIS which formulated in the year 2009 is one of the journals which had been sustained from this hurricane. We want to share a very special celebration: the first 10 years of GJEiS with your support and had acknowledged from you and from many other colleagues from all over the globe, this sparkle would not have come without the contributors support and assistance. This volume is landmark in several ways. First, it marks the beginning of our 10th year of publication, in which we have glimpse how GJEiS had grown-up from underneath to pinnacle. Second, we are about to embark into our first new decade, under the banner of our new publisher, Scholastic Seed Inc. (www.scholasticseed.in) originated as a think-tank and an Out-of-Box service provider of periodicals online platform tool and had developed digital state-of-art periodicals software exclusively for the magazines, scholarly journals, newspapers, annual reports and newsletters. In the present scenario these publications are published at regular intervals and required lots of digitization and contemporary thought to flourish online.

A data governance strategy is a recognized set of guidelines for ensuring the appropriate management of an organization's digital information. Such guidelines can engross policies for business process management (BPM) and enterprise risk planning (ERP), as well as safety measures, data superiority and solitude. After four years of grounding and deliberation the GDPR was in conclusion permitted by the EU Parliament on 14th April, 2016. With an enforcement date: 25th May 2018 the EU General Data Protection Regulation (GDPR) replaces the Data Protection Directive 95/46/EC and was designed to match up data privacy laws across Europe, to look after and authorize all EU citizens' data privacy and to redesign the manner organizations across the globe move toward data privacy.

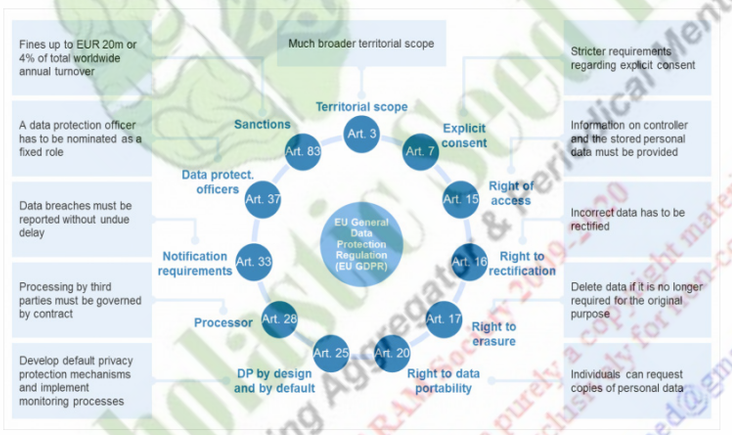


Companies that bring together data on citizens in European Union (EU) countries will require complying with severe new rules around protecting customer data. GDPR is expected to locate a new typical for consumer rights regarding their data, but companies will defy as they put systems and processes in position to meet the terms. Conformity will origin some concerns and new expectations of security teams. For example, the GDPR takes an extensive view of what constitutes personal identification information. Companies will require the equivalent level of protection for things like an individual's IP address or cookie data as they carry out for name, address and Social Security figure.

*Author for correspondence

Source: https://www.eugdpr.org

GDPR significantly increases the existing data protection requirements by extending the territorial scope, the rights of individuals and the specific obligations of financial institutions:



Source: https://www.bankinghub.eu/banking/finance-risk/gdpr-deep-dive-implement-right-forgotten

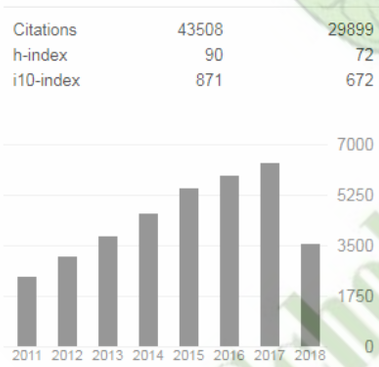
Thus the GDPR is now recognized as law across the EU. Member States have two years to ensure that it is fully implementable in their countries by May 2018. The timeline below contains key dates and events in the data protection reform process from 1995 to 2018. The timeline also contains highlights of some of the ways that the GDPR strengthens your right to data protection.

I would like in person thank KARAM Society for having the vision to back our young journal and see it through to adolescence. I've been fortunate to toil with some magnificent community, who helped an inexperienced editor, as we urbanized a periodical with a very dissimilar look and feel to most others in the countryside. As we go into the next phase of our growth, I'm looking forward to working with Scholastic Seed Inc. originated as E-publishing Aggregator & Periodical Mentor & Informatics Ltd. http://www.informaticsjournals.com/index.php/gjeis, a journal publisher which is rapidly expanding in the area of publication. The back bone of any journal is its editorial board as which not only promote the journal but strengthen in making more muscular editorial boards in many ways. Perhaps the most widespread gathering of the board is to endow with high-quality reviews for articles where you may be struggling to find peripheral reviewers. Board members can also act as a third, or trusted "tie-breaker" reviewer on articles where you have received split opinions from the other referees. We had fashioned a new pedagogy from 2018 to strengthen and bring transparency.

The editorial board (sometimes known as an advisory board) typically consists of a group of prominent people in the journal's field. Having an editorial board is very significant: they act as ambassadors for journals. To some extent the quality of a journal is judged by the members and scholastic credentials of its editorial board. Aside from providing prestige, the role of the editorial board is to advise and support the editor. Functions may include:

- Identifying new topics for commissions, special editions and advising on direction for the journal—giving feedback on past issues and making suggestions for both subject matter and potential authors
- Provide content by writing occasional editorials and other short articles
- Approaching potential contributors
- Peer review; also help to identify peer reviewers and provide second opinions on papers (i.e. where there is a conflict between reviewers)
- Identify appropriate conferences for editors to attend
- Endorse the journal to authors, readers and subscribers and encourage colleagues to submit their best work.

In inspection of the precision that it has started its publication has contemplate on issues concerning science, management, engineering and technology in various leading circumference areas of research, development and its connotation. Since GJEIS which addressed as an academic journals are not sustain economically by institution but supported by KARAM Society a Research and Academic Management conglomerate and professional organizations, who in the backdrop plot a route. The GJEIS as a scholastic journal facilitates debonair with its research initiatives and meticulous blind and peer review process the journal is currently at present listed in almost fifty directories in the globe, equipped with Digital Object Identifier (DOI) from Cross-ref USA http://www.crossref.org. It also had an average impact factor of 2.31 from the various impact factors rating agencies.



Source: https://scholar.google.com/citations?user=S47TtNkAAAAJ&hl=lv

Source: GJEIS Similarity Index http://www.informaticsjournals.com/index.php/gjeis

Recently as per the Google scholar it h-index is 90 and i-10 index is 871 from 2009–2018. From 2018 onwards as per the instruction given by the international listing agencies which provide ratings to the journal, we had started putting a similarity index at the end of an article to give more transparency and creditability.

Hope that this kind of initiatives can definitely give journal an edge and create a niche. The journal with its present volume-10 Issue-I had a mandate to popularize the thought of Enterprise, Information and System in business and remote business. It is designed to make graspable to community that harmonization of three words is not just a economic idea, but is more omnipresent, that is why we have to get transversely what the academics and the peers are doing and saying about scientific showground in creating a recess. We have fabricated an across-the-board cluster to make GJEIS genuineness with RAC.

Research & Analytics Consortium (RAC)

A **consortium** is an association of two or more individuals, companies, organizations or governments (or any mixture of these entities) with the purpose of participating in a widespread commotion or pooling their resources for accomplishing a worldwide aspiration. Research and Analytics Consortium (RAC) is a move in this direction. It had been formulated by a people from corporate and academia.

We had started a new category from 2018 called "Homage"- A feudal ceremony by which a man acknowledges himself the vassal of a lord. Which is in real sense a tribute to the luminary who had contributed enormously to the information society? At this moment at a new portal from preliminary of 2018 to http://www.informaticsjournals.com/index.php/gjeis/index with intent to underpin GJEIS more pragmatically and research direction. We had moreover at the present made the Subscription based access. On the other hand the dedicated page in Face book created in order to fiddle with the GJEIS alliance https://www.facebook.com/GJEiS. The GJEIS website has been moving to a new contemporary Google-hosted JavaScript service which label the length of population curate online directory, helps in indexing and smooth the development of in providing access to peer-reviewed articles. It is also equipped with search engine optimization and web analytics for statistical analysis and citation. GJEIS is also been placed at UGC Approved List of Journals at S. No. 27981 https://www.ugc.ac.in/journallist

To commemorate this anniversary we want to publish a Special Issue that collects your impressions in the form of review, original article, letter to the editor, opinion or perspective article, etc., which include a paragraph with congratulation to GJEiS's 10th Anniversary or a personal reflection on *what has GJEiS influenced in my work as a researcher? Why do I like to publish in GJEiS? or what do I think GJEiS has contributed to the field?* I on behalf of GJEiS grab this opening to eloquent indulgence to the complete personnel of KARAM Society and community from Informatics for their enthusiasm and relish in bringing out this fast-moving volume/issue. I would in tot up be affectionate of to authenticate confirmatory feedback to our society staff at the periodical office, for their well judged and meticulous effort.

Dr. Subodh Kesharwani
Editor-in-Chief, GJEiS
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MetaSoundex Phonetic Matching for English and Spanish

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Abstract

Researchers confront major problems while searching for various kinds of data in large imprecise databases, as they are not spelled correctly or in the way they were expected to be spelled. As a result, they cannot find the word they sought. Over the years of struggle, pronunciation of words was considered as one of the practices to solve the problem effectively. The technique used to acquire words based on sounds is known as "Phonetic Matching". Soundex was the first algorithm developed and other algorithms such as Metaphone, Caverphone, DMetaphone, Phonex etc., are also used for information retrieval in different environments. The main contribution of this paper is to analyze and implement the newly proposed MetaSoundex algorithm for fixing ill-defined data in English and Spanish languages. The newly developed MetaSoundex algorithm addresses the limitations of well-known phonetic matching techniques, Metaphone and Soundex. Specifically, the new algorithm provided results that are more accurate compared to both Soundex and Metaphone algorithms and has higher precision compared to Soundex, thus reducing the noise in the considered arena.

Keywords: Information Retrieval, Metaphone, Metasoundex, Misspelled Words, Phonetic Matching, Soundex

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Editorial Board Excerpt: *Initially at the Time of Submission (ToS) submitted paper had a 19% plagiarism which is an accepted percentage for publication. The editorial board is of an observation that paper had a subsequent surveillance by the blind reviewer's which at a later stages had been rectified and amended by an authors (Koneru and Varol) in various phases as and when required to do so. The reviewer's had in an initial stages comment with minor revision with a following remark which at a short span restructured by an authors. The comments related to this manuscript is extremely noticeable both subject-wise and research wise by the reviewers during evaluation and further at blind review process too. All the comments had been shared at a variety of dates by the authors' in due course of time and same had been integrated by the author in addition. By and large all the editorial and reviewer's comments had been incorporated in this very paper at the end and further the paper had been earmarked and decided under "Empirical Research Paper" category as its highlights and emphasize the pure and first hand information in relation to MetaSoundex Phonetic Matching for English and Spanish.*

1. Introduction

Information deterioration is an intensive problem for organizations in the present era. With the increase in the amount of information saved day by day, there is a desperate need for locating the mistyped data. Organizations are facing great challenge to maintain the quality of data in information systems with various sources of data damage. Whenever the data is assimilated from multiple sources, it is a challenge to recognize the duplicate information due to the existence of misspelled data for the same record. As a result, the information of organization always ends up at risk. To address these challenges, techniques such as string matching, phonetic matching, and data linkage have been used. Apart from other techniques that depend on variations in letters, phonetic matching is mainly contingent on variations in sound to identify the misspelled data. As a result, the misspelled data from multilingual sources can also be identified using phonetic matching.

Soundex was the naive algorithm proposed and other algorithms like Metaphone, Caverphone, DMetaphone, Phonex etc., are also used for retrieving nearest matches for misspelled data. As per the research[15], it was clearly observed that there is no concrete technique for retrieving nearest matches. Soundex has high accuracy than other algorithms but has huge overhead due to its high false positives. Metaphone has high efficiency in spite of its low accuracy, due to its low overhead. Hence, this paper mainly involves the proposal, implementation, and analysis of a hybrid algorithm, *MetaSoundex*. It is observed that MetaSoundex has an accuracy of 84.5% for a real-life dataset, which is improved over Soundex (80%) and Metaphone (58%).

The rest of this paper is structured as follows. Differences between string matching and phonetic matching are discussed in next section. Section three describes background of phonetic matching algorithms. Section four explains in detail about Soundex, Metaphone, and MetaSoundex, which is the initial contribution of this paper. Section five defines the evaluation

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Table 1. String matching *vs* phonetic matching[26,29]

	String Matching	Phonetic Matching
Matching	Matches data based on patterns of substrings	Matches data based on the similar pronunciations
Involves	Addition, Deletion or Substitution of Letters	Conversion of data to phonetic patterns
Applications	Applied in Search Engines, Bio-Informatics, spell checkers, digital forensics etc.	Used in name retrieval in enquiry lines, record linkage and fraud detection. Gaining its importance in spell checkers and; search engines.
Prominence	Mainly used for matching names and nouns from English Language	Can be used in multi-lingual environment, where diversities in pronunciation or writing styles may be present.

The study in this paper particularly focuses on phonetic matching because:

a. It is not explored as much as string matching and still relies on old techniques.
b. Of increase in the voice-to-text translation applications, where phonetic matching plays a crucial role.

metrics and describes the experimental setup used in this study. The main contribution of this paper is presented in section six in which the results of newly proposed MetaSoundex are analyzed and compared with the existing algorithms. Finally, this paper is concluded and future work is pointed out in section seven.

2. String Matching *vs* Phonetic Matching

Phonetic matching is one of the important techniques that plays a major role in variety of fields such as digital investigation involving voice memos and voice mails, transcriptions, and voice apps such as 'Siri', 'Google' voice etc.[3] to provide suggestions for misspelled words. Phonetic comparison meticulously identifies the words that are most likely to sound similar. It obtains the quantitative analysis of pronunciations[32] between speech forms and spellings of words, whereas, string matching mainly involves insertion, deletion, and substitution of letters to find the near matches[26,29]. Table 1 describes the most common differences between string matching and phonetic matching.

3. Phonetic Matching Algorithms

Information retrieval is one of the major viewpoints of data mining application areas[28]. However, the information may not be consistent over the considered arena due to various causes. The different sources of variations can be spelling variations (typographical errors, substituted letters or by addition or omission of letters), phonetic variations (discrepancies in phonetic structure of words), double names or double first names (names having more than one word), change of name[27] (individual undergoes change of name).

Of the different criteria mentioned above, the research in phonetic variations led to the development of phonetic matching algorithms, which obtains worthwhile approximate matches to the misspelled words.

3.1 Evolution of Phonetic Matching Algorithms

The evolution of phonetic matching has come into frame when there is a hardship in the retrieval of information[5]. The main goal of phonetic matching algorithms is to encode homophones to the same representation so that they can be matched despite of minor differences in spelling[1,10]. The technique of obtaining words using sounds was used in the US census since the late 1890's, but a concrete solution to this was first proposed and patented by Robert C. Russell in 1912 as Soundex algorithm[27]. The background of various phonetic matching algorithms is discussed.

3.1.1 Soundex

The earliest algorithm in the literature is Soundex developed by Odell and Robert C. Russell in 1912, which generates a four-digit code retaining its first letter. The authors patented the algorithm in 1918[22]. The process mainly encodes consonants while a vowel is not encoded unless it is the first letter. Arguably, Soundex is one of the most widely known of all phonetic algorithms. It is used as a standard feature in applications like mySQL, oracle, etc. Because of the few disadvantages like dependency on the first letter, failure of detection of silent consonants, limit to the four characters of encoding, and high overhead in the retrieved matches, Soundex can only be used in applications where high false positives and false negatives can be tolerated[27].

3.1.2 Beider-Morse Phonetic Matching (BMPM)

Beider and Morse implemented an improvement to Soundex to reduce the number of false positives and false negatives, known as Beider-Morse Phonetic Matching (BMPM). Beider, *et al*, has also mentioned that the algorithm is extended to languages other than English, with the application of some generic rules to obtain the phonetic codes[5]. Varol, *et al*, discussed BMPM as a hybrid technique with a 6-letter encoded code in which the percentage of

irrelevant matches can be abated by 70%[33]. A set of tables representing the pronunciation rules for specific languages are designed for BMPM, where the language of the word can be recognized from its spelling. The design includes nearly 200 rules to specify the language in this technique. If the language cannot be determined, special kind of generic rules are used to encode the word.

3.1.3 NYSIIS

NYSIIS algorithm was developed in 1970 as a part of New York State Identification and Intelligence System project headed by Robert L. Taft, which produces a canonical code similar to Soundex[13]. Unlike Soundex, NYSIIS retains the information regarding position of vowels in the encoded word by transforming them all to 'A'. It generates only alphabetic code and is extensively used in record linkage system[4,12,30].

3.1.4 Daitch Mokotoff Soundex

Daitch Mokotoff Soundex System was developed by Randy Daitch and Gary Mokotoff of the Jewish Genealogical Society (New York) in 1985. The algorithm is mainly used for determining the near matches with Eastern European surnames, which include Russian and Jewish names. Similar to Soundex, the algorithm also encodes into digits by extending it to a complete 6-digit code. The conversion rules of Daitch Mokotoff Soundex are much complicated than Soundex as they involve groups of characters for encoding (2016)[31].

3.1.5 Phonex and Phonix

Phonex is a technique of encoding words after pre-processing. In order to overcome defects of Phonex, Phonix has been introduced with a number of transformations in the beginning, ending, and in the middle of the word[33]. Phonix is considered to be the variant of Soundex, where a prior mapping involves nearly 160 letter-group conversions to normalize the string. For example, X is converted to 'ECS', PSv is converted to Sv (where 'v' is any vowel) if it occurs at the start of string. Phonix also produces a four letter code like Soundex, which is highly useful when an exact index search is required but, due to the truncation of code, it is not beneficial when the complete string matching should be assessed[34].

3.1.6 Metaphone

In 1990, a new technique considering diphthongs (combination of two or more letters) of words was developed by Lawrence Philips, known as Metaphone[18]. It indexes the original word based on the pronunciation rules in English. It retains more information than other variants of Soundex as the letters are not defined into groups[21]. The final code of Metaphone includes 16 consonant letters but retains the vowels, if present at the beginning of the word. Bhattacharjee, *et al* had stated that the technique is mainly used for data cleaning in the text files to remove erroneous data[6]. Pande, *et al* detailed that Metaphone has its extended usage in stemming, which improves performance in Information Retrieval (IR)[23]. David Hood cited that though the algorithm is sensitive to combination of letters like 'TH', it is not subtle enough with the vowels especially at the postvocalic L and R[13].

3.1.7 Double Metaphone

Double Metaphone, popularly known as DMetaphone, is an enhancement to Metaphone algorithm by Lawrence Phillips in 2000. It is distinctive from other algorithms as it generates two code values – one representing the basic version and other representing the alternate version[24]. Unlike Soundex, DMetaphone encodes groups of letters called diphthongs according to a set of rules[33]. The encoding process involves rules, which consider the words from different origins such as Eastern European, Italian, Chinese and other languages.

3.1.8 Caverphone

In pace, the specified algorithms are not suitable for a particular database, named Caversham, which is mainly used for data source linkage. The algorithm, known as Caverphone, which is analogous to Metaphone with some rules subsequently applied, was enforced by David Hood in 2002 to encode the data of Caversham database[23]. The algorithm was later improvised in 2004 to Caverphone 2.0, to increase its accuracy and efficiency by applying more set of rules. David Hood[13] also stated that the algorithm is efficient by giving precise matches when compared to Soundex and Metaphone algorithms for linking data sources[7].

3.1.9 Spanish Soundex

In 2012, Am´on *et al* had proposed an improvement to Soundex algorithm by including Spanish letters making it feasible to obtain phonetic codes for Spanish words[2]. The encoding also removes the dependency on the first letter by converting all the letters into digits. As a result, Spanish Soundex is more accurate than the original Soundex in finding near matches for Spanish words. In 2014, Angeles, *et al* had improvised the algorithm to make the encryption code resizable[10].

3.1.10 Spanish Metaphone

Alejandro Mosquera[19] had developed Metaphone algorithm for Spanish language by adapting the techniques from the algorithm used for English Language[19]. Unlike Spanish Soundex, Spanish Metaphone retains the information related to vowels. The encoded word results in groups of characters.

In spite of many phonetic matching algorithms, there is still a need to develop a proper algorithm to achieve higher data quality as every algorithm has its own disadvantages[27]. Soundex is one of the prominent algorithms having high accuracy but it has very low precision due to the large overhead. Metaphone is a well-known phonetic matching algorithm comprising of rules involving vowels and sounds of diphthongs but has less accuracy. The major contribution of this work is to overcome such shortcomings and propose a new algorithm, MetaSoundex, in Engliash and Spanish, where the encoding process includes both the vowel and diphthong sounds. As these sounds are reflected, the number of false positives is reduced.

4. Methodology

Complication in the recovery of data is the result of type errors, misspelled words, inconsistent expression habit, and different formats. With typographical errors, often there would be interchanging of letters or misspelling of words. Such problems can be addressed by phonetic matching algorithms such as Soundex, Metaphone, and Caverphone, etc. In this section, we are going to discuss in detail about the existing Soundex and Metaphone algorithms of English and Spanish languages and describe the functionality of newly proposed MetaSoundex algorithm.

Soundex

To obtain Soundex code following steps should be followed. Let the input word be **w**. Convert all letters into upper case. Retain the first letter in the word **w.**

Algorithm: Soundex
set A = {*A, E, H, I, O, U, W, Y* }, **B** = { *B, F, P, V* }, **C** = { *C, G, J, K, Q, S, X, Z* }, **D** = { *D, T* }, **E** = { *L* }, **F** = { *M, N* }, **G** = {*R*}
set i = 0
while i >= 1 ***and*** i < **w**.*length*
  if w.*charAt*(i) ∈ **A**
    w.*charAt*(i) = **0**
  end
  else if w.*charAt*(i) ∈ **B**
    w.*charAt*(i) = **1**
  end
  else if w.*charAt***(i)** ∈ **C**
    w.*charAt***(i) = 2**
  end
  else if w.*charAt***(i)** ∈ **D**
    w.*charAt***(i) = 3**
  end
  else if w.*charAt***(i)** ∈ **E**
    w.*charAt***(i) = 4**
  end
  else if w.*charAt***(i)** ∈ **F**
    w.*charAt***(i) = 5**
  end
  else if w.*charAt***(i)** ∈ **G**
    w.*charAt***(i) = 6**
  end
end

From word **w**, all pairs of same digits and zeroes are removed. The first four characters of word **w** are considered to be Soundex code[7,22].

Spanish Soundex

The Spanish Soundex algorithm is similar to Soundex in generating the encoded word. The following steps should be followed for obtaining the code. Let the input word be **w**. Convert all letters into upper case.

Algorithm: Spanish Soundex
set A = {*A, E, H, I, O, U, W* }, **B** = { *B, V* }, **C** = { *F, H* }, **D** = { *D, T* }, **E** = { *S, G, Z, X* }, **F** = { *Y, LL, L* }, **G** = { *N, Ñ, M* }, **H** = { *Q, K* }, **I** = { *G, J* }, **J** = { *R, RR* }
set i = 0
while i >= 0 ***and*** i < **w**.*length*
  if w.*charAt*(i) ∈ **A**
    remove w.*charAt*(i)
  end
  else if w.*charAt*(i) = ***P***
    w.*charAt*(i) = **0**
  end
  else if w.*charAt*(i) ∈ **B**
    w.*charAt*(i) = **1**
  end
  else if w.*charAt*(i) ∈ **C**
    w.*charAt*(i) = **2**
  end
  else if w.*charAt*(i) ∈ **D**
    w.*charAt*(i) = **3**
  end
  else if w.*charAt*(i) ∈ **E**
    w.*charAt*(i) = **4**
  end
  else if w.*charAt*(i) ∈ **F**
    w.*charAt*(i) = **5**
  end
  else if w.*charAt*(i) ∈ **G**
    w.*charAt*(i) = **6**
  end

```
        else if w.charAt(i) ∈ H
                w.charAt(i) = 7
        end
        else if w.charAt(i) ∈ I
                w.charAt(i) = 8
        end
        else if w.charAt(i) ∈ J
                w.charAt(i) = 9
        end
    end
```

From word **w**, all pairs of same digits are removed. Unlike Soundex, the resultant code is independent of first letter of the word[2].

Metaphone

To obtain Metaphone code following steps should be followed. Let the input word be **w**. Convert all letters into upper case. Drop all the duplicate letters from **w** except *C*.

Algorithm: Metaphone

set A = {*K, G, P*}, **B** = {*CIA, CH* }, **C** = {*SCH, C* }, **D** = {*CI, CE, CY* }, **E** = { *DGE, DGI, DGY* }, **F** = { *GH, GN, GNED*}, **G** = {*GI, GE, GY, ^GG* }, **H** = {*A, E, I, O, U* }, **I** = { *CK, Q* }, **J** = { *PH, V*}, **K** = { *SH, SIO, SIA* }, **L** = {*TIAO, TH, TCH*}

```
set i = 0
while i >= 0 and i < w.length
    if w.charAt(i) ∈ A and w.charAt(i + 1) == N
      w.charAt(i) = N
    end
    if w.charAt(i) == A and w.charAt(i + 1) == E
      w.charAt(i) = E
    end
    if w.charAt(i) == W and w.charAt(i + 1) == R
      w.charAt(i) = R
    end
    if w.charAt(w.length-2) == M and w.charAt
    (w.length-1) = B
      w.charAt(i) = B
    end
end
    if w contains B
      replace with X
    end
    if w contains C
      replace with K
    end
    if w contains D
      replace with S
    end
    if w contains E
      replace with J
    end
    set i = 0
    while i >= 0 and i < w.length
    if w.charAt(i) == G
    w.charAt(i) = K
    end
    if w.charAt(i) == D
      w.charAt(i) = T
    end
end
    if w contains G
      replace with J
    end
while i >= 0 and i < w.length
    if w.charAt(i) == H and (w.charAt(i-1) ∈ H or
    w.charAt(i+1) ∈ H)
      remove H
    end
    end
    if w contains I
      replace with K
    end
    if w contains J
      replace with F
    end
    if w contains K
      replace with X
    end
    if w contains L
      remove T
    end
    if w.charAt(0) == W and w.charAt(1) == H
      remove H
    end
set i = 0
while i >= 0 and i < w.length
    if (w.charAt(i) == W or w.charAt(i) == Y) and
    w.charAt(i+1) ∉ H
      remove w.charAt(i)
    end
    if w.charAt(i) == Z
      w.charAt(i) = S
    end
end
```

From word **w**, all vowels are removed and the obtained output is considered as Metaphone code[18].

Spanish Metaphone

Let the input word be **w**. Convert all letters into lower case.

Algorithm: Spanish Metaphone

set A = {*A, E, I, O, U* }, i = 0

```
while i >= 0 and i < w.length
    if w.charAt(i) == á
      w.charAt(i) = A
    end
    if w.charAt(i) == c and w.charAt(i+1) == h
      w.charAt(i) = X
       remove w.charAt(i+1)
    end
    if w.charAt(i) == Ç
      w.charAt(i) = S
    end
    if w.charAt(i) == é
      w.charAt(i) = E
    end
    if w.charAt(i) == í
      w.charAt(i) = I
    end
    if w.charAt(i) == ó
      w.charAt(i) = O
    end
    if w.charAt(i) == ú or w.charAt(i) == ü
      w.charAt(i) = U
    end
    if w.charAt(i) == ñ
      w.charAt(i) = N
      w = w.substring(0,i) +"Y"+w.substring(i+1, w.length)
    end
    if w.charAt(i) == g and w.charAt(i+1) == ü
      w.charAt(i) = W
      remove w.charAt(i+1)
    end
    if w.charAt(i) == b
      w.charAt(i) = V
    end
    if w.charAt(i) == l and w.charAt(i+1) == l
      w.charAt(i) = Y
      remove w.charAt(i+1)
    end
end
w.toUpperCase() //convert all letters to uppercase and remove duplicate letters except C
set i = 0
while i >= 0 and i < w.length
    if w.charAt(i) == C and w.charAt(i+1) == C
      w.charAt(i) = X
    remove C
    end
    if w.charAt(i) == C and (w.charAt(i+1) == E or w.charAt(i+1) == I)
      w.charAt(i) = Z
      remove w.charAt(i+1)
    end
    if w.charAt(i) == G and (w.charAt(i+1) == E or w.charAt(i+1) == I)
      w.charAt(i) = J
    remove w.charAt(i+1)
    end
    if w.charAt(i) == H and w.charAt(i+1) ∈ A
      remove H
    end
    if w.charAt(i) == Q and w.charAt(i+1) ≠ U
      remove K
    else
      remove w.charAt(i) and w.charAt(i+1)
    end
    if w.charAt(i) == W
      w.charAt(i) = U
    end
    if (w.charAt(i) == S or w.charAt(i) == X) and w.charAt(i+1) ∈ A
      w = "E" + w;
    end
    end
```

The obtained w is the encoded Spanish Metaphone code[19].

4.1 MetaSoundex Algorithm

Though Soundex and Metaphone are naïve algorithms being used in different applications as embedded tools, each of them have their own disadvantages. Soundex mainly depends on the first letter of the word. It has a high overhead in retrieving the near matches and it does not consider the phonetic sounds of vowels. In spite of the fact of addressing the above problems in Metaphone algorithm, it only has less accuracy in obtaining the proper matches to the misspelled word. To overcome the limitations in both algorithms, a new algorithm is developed, namely, MetaSoundex. The schematic design of MetaSoundex algorithm is shown in Figure 1.

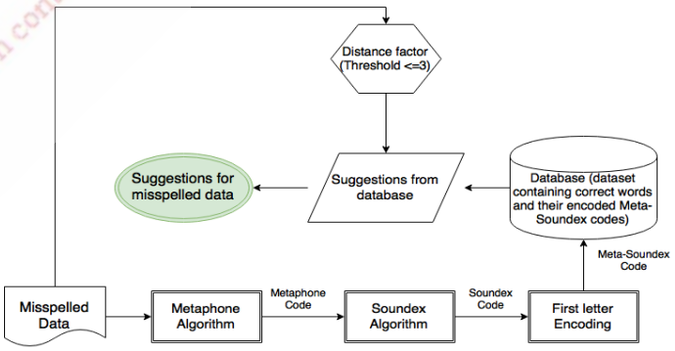

Figure 1. Schematic design of suggestions retrieval for MetaSoundex algorithm.

Table 2. Phonetic codes – English and Spanish.

Language	Word	Soundex Code	Metaphone Code	MetaSoundex Code
English	CAPABLE	C114	KPBL	5140
Spanish	CINEMÁTICA	46634	KNMTK	76637

The schematic design shows the retrieval of suggestions for the misspelled data using MetaSoundex algorithm. As shown in the Figure 1, the misspelled data is given as input to the Metaphone algorithm to obtain the Metaphone code. As a result, the phonetic sounds of vowels and diphthongs are retained. This Metaphone code is given as input to Soundex algorithm, which converts the existing groups of characters to numbers. The generalization of characters to numbers improves the accuracy for retrieving suggestions. But, the obtained code retains the dependency on first letter due to Soundex encoding. To remove this dependency, the first letter is encoded using transformations in Daitch-Mokotoff Soundex algorithm. The obtained MetaSoundex code is sent to database to retrieve the suggestions of the misspelled data. To further reduce the unnecessary overhead, a distance factor using Levenshtein Edit Distance (LED) is applied on retrieved suggestions, which is further detailed in section 4.2. The database shown in the Figure 1 comprises of correct words and their corresponding MetaSoundex codes for both English and Spanish languages.

MetaSoundex

MetaSoundex algorithm is a hybrid algorithm of Soundex and Metaphone as discussed earlier. The step by step encoding of MetaSoundex algorithm is detailed below. Let the input word be **w.**

1. Convert all the letters of the word **w** to upper case.
2. Encode the word using Metaphone to retain the vowel sounds and diphthong combinations.
3. Encode the obtained string using Soundex algorithm.
4. If the language is English, then the first letter is encoded using transformations in Daitch Mokotoff Soundex algorithm to remove the dependency on first letter.

The pseudo code of the MetaSoundex algorithm is discussed below:

```
Algorithm: MetaSoundex
set A = {A, E, I, O, U}, B = { J, Y }, C = { D, T }, D = { S, Z, C },
        E = { X, G, H, K, Q }, F = { N, M }, G = { B, F, V, P, W },
        H = { L }, I = { R }
set i = 0, language        //either English or Spanish
w = Metaphone(w)
w = Soundex(w)
if language is English
    while i >= 0 and i < w.length
    if w.charAt(i) ∈ A
      w.charAt(i) = 0
    end
    else if w.charAt(i) ∈ B
        w.charAt(i) = 1
    end
    else if w.charAt(i) ∈ C
        w.charAt(i) = 3
    end
    else if w.charAt(i) ∈ D
        w.charAt(i) = 4
    end
    else if w.charAt(i) ∈ E
        w.charAt(i) = 5
    end
    else if w.charAt(i) ∈ F
        w.charAt(i) = 6
    end
    else if w.charAt(i) ∈ G
        w.charAt(i) = 7
    end
    else if w.charAt(i) ∈ H
        w.charAt(i) = 8
    end
    else if w.charAt(i) ∈ I
        w.charAt(i) = 9
        end
    end
end
```

Table 2 shows the exemplary phonetic codes generated using Soundex, Metaphone, and MetaSoundex for both English and Spanish words.

4.2 Distance Factor for Filtering Retrieved Approximate Matches - MetaSoundex

The generated MetaSoundex code can be used to obtain the approximate matches for the given misspelled data. After the approximate matches are retrieved, the distance factor between the misspelled word and the retrieved matches is calculated using LED method[9] to reduce the unnecessary overhead. The threshold of the distance is set to 3, as the maximum number of errors in the synthetic data is less than 3, whereas for real-world data the distance factor is mostly observed to be 3. If LED is less than or equal to 3, then the word is filtered to be nearest match for the misspelled word. For example, the MetaSoundex code of the misspelled word "PROBLMS" is 7614. The retrieved suggestions from the database for the given MetaSoundex code

are "PROBLEMS", "PROVOLONES", and "PROPYLS" each having the distance factor of 1,5,3 respectively, from the given misspelled word. After applying the distance factor, the final suggestions are "PROBLEMS", "PROPYLS", which reduced the unnecessary overhead.

5. Testing

In this work, the accuracy of the MetaSoundex is compared with the existing algorithms in both English and Spanish languages. In English, the proposed algorithm is compared with five algorithms – Soundex, Metaphone, Caverphone, DMetaphone, NYSIIS, whereas in Spanish, the proposed algorithm is compared with Spanish Soundex and Spanish Metaphone. The evaluation metrics, experimental setup, and preparation of pre-processed datasets used to compare the accuracy and efficiency of the algorithms are discussed below[14].

5.1 Evaluation Metrics

The performance of phonetic matching algorithms used for information retrieval is evaluated by calculating precision, recall and F – measure.

Precision gives the total number of true positives obtained over the total number of suggestions for the obtained true positives.

$$p = \frac{\sum p}{\sum Number\ of\ suggested\ words\ for\ each\ corrected\ word} \quad (1)$$

where, $P = \begin{cases} 1, \text{ if the word is corrected} \\ 0, \text{ if the word is not corrected} \end{cases}$

$p = cumulative\ precision\ of\ an\ algorithm$

Recall provides the total number of relevant words over the total number of suggestions. It can also be referred as accuracy.

$$R = \frac{Number\ of\ corrected\ words}{Total\ number\ of\ misspelled\ words} \quad (2)$$

where, R = *recall or accuracy of an algorithm.*

The F – measure is calculated based on precision and recall and is defined as the harmonic mean of precision and recall. It is given by,

$$F = \frac{2 \times P \times R}{P + R} \quad (3)$$

Where, $F = F - measure\ of\ the\ algorithm$.

5.2 Experimental Setup

The design of the experimental analysis supports two languages, English and Spanish. Two input files - one with correct data indicated as "reference data file" and other with ill-defined data represented as "incorrect data file" are used to retrieve approximate matches from Spanish dictionary and English dictionary for both Spanish and English languages, respectively.

The simulator generates phonetic codes by executing respective phonetic matching algorithms of the corresponding language, for the errant data. These codes are compared to the phonetic codes present in database and the matched word lists are retrieved as the approximate suggestions. These matched words are evaluated by comparing with the reference file to calculate precision and recall, which would symbolize the better algorithm.

5.3 Dataset Preparation

Data pre-processing is considered to be an important phase in data mining because the data that is collected from various sources lacks consistency, which makes it unsuitable to directly apply data processing algorithms[35]. The raw data can also be incomplete with missing values of some attributes. In some cases, we can encounter noisy data with some unwanted values to a given attribute. As a result, we preprocess the data into a suitable format to apply different algorithms.

5.3.1 Reference Dataset Preparation

Until now, various experiments were conducted on finding phonetic matches for misspelled words of personal names[27]. But there is only little exploration in finding the phonetic matches for dictionary words using these algorithms. Hence, in this project we mainly concentrated on obtaining the phonetic matches for misspelled words of English and Spanish diction, which are considered as reference datasets.

The reference datasets for the experiment are prepared as follows. For the English dictionary dataset, all the words are extracted from the reference[17] and a list is formed. This list comprises of 267,750 correct, non-duplicate words. Phonetic codes are generated for each of these words, by applying the algorithms discussed in section 3. A dataset is created with these English words and their corresponding phonetic codes. This dataset is used as a reference dataset for obtaining the suggestions for misspelled English words.

Similarly, Spanish wordlist is extracted from the reference[8]. The list consists of 95,487 correct words. Phonetic codes are generated using Spanish phonetic matching algorithms. Another dataset, having these Spanish words and their corresponding phonetic codes are created to use as reference for retrieving suggestions to misspelled words.

5.3.2 Synthetic Dataset Preparation

According to Kukich[16], nearly 80% of problems of misspelled words can be addressed either by addition of a single letter, or replacement of single letter or swapping of letters. Therefore, synthetic datasets are generated by executing addition, deletion, swapping, and replacement of letters.

From the above mentioned correct word list of English language, different pairs of synthetic ill-defined datasets are generated by randomly selecting the words. Each pair consists of correct words as reference data and their corresponding manipulated words as misspelled data. The generation of synthetic datasets is shown in Figure 2.

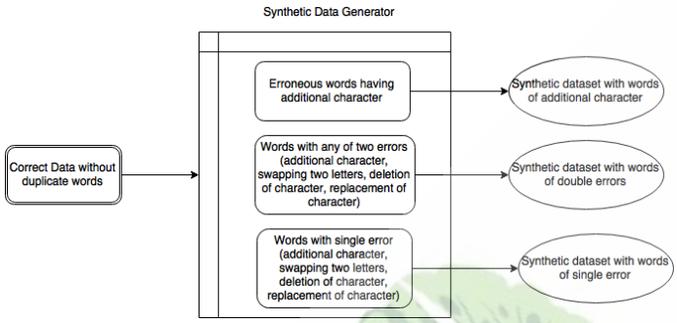

Figure 2. Synthetic datasets generation for analysis of various algorithms.

While creating the manipulated data, words with three types of errors are generated - words with additional character, words having single error (replacement or substitution of character or swapping of two characters), and words having double errors (two single errors). The generated words are accumulated into datasets of size 800. Four datasets are generated for each type of error. Hence, a total of twelve pairs of correct and manipulated datasets are generated. By the same token, twelve pairs of correct and manipulated datasets are generated with data size of 800 for the Spanish language.

5.3.3 Real-World Misspelled Data

Apart from the synthetic data, the performance of the algorithms is also analyzed on real-world data. For English, the misspelled data is referred from[11] having nearly 4,200 misspelled words along with their corresponding correct words. In the same way, the Spanish data is retrieved from[25]. As there is only little research in the field of misspelled words in Spanish language, the data size of misspelled words is only about 100.

6. Results and Discussion

The work in this paper illustrates the performance of different algorithms on datasets of particular size having various types of errors - single error, double error, and additional character.

6.1 Analysis on Synthetic Data – English and Spanish

The values of recall and precision for different algorithms tested on synthetic data are shown in Table 3 and 4 for Spanish and English languages, respectively.

From the above experimental data, it can be clearly observed that the state-of-the-art MetaSoundex algorithm has highest accuracy, whereas, Metaphone has the lowest accuracy of all the algorithms. It can also be observed that the value of recall is highly dependent on the type of error. The recall value is low for the wordlist having two errors in each word irrespective of language. From the results, it can be stated that the precision

Table 3. Precision and recall values of different algorithms for synthetic data - Spanish

Algorithm	Additional Character		Double Error		Single Error	
	Precision	Recall	Precision	Recall	Precision	Recall
Soundex	0.029	0.1	0.019	0.02	0.026	0.127
Metaphone	0.18	0.05	0.3	0.01	0.17	0.07
NYSIIS	0.055	0.15	0.0305	0.025	0.013	0.187

Table 4. Precision and recall values of different algorithms for synthetic data - English.

Algorithm	Additional Character		Double Error		Single Error	
	Precision	Recall	Precision	Recall	Precision	Recall
Soundex	0.003	0.45	0.0034	0.27	0.0038	0.37
Metaphone	0.05	0.21	0.095	0.09	0.17	0.162
MetaSoundex	0.016	0.53	0.021	0.328	0.023	0.408
DMetaphone	0.0033	0.40	0.004	0.223	0.005	0.331
Caverphone	0.02	0.33	0.04	0.128	0.057	0.204
NYSIIS	0.01	0.337	0.0157	0.05	0.013	0.23

of Soundex is least for any type of error in both the languages due to the retrieval of high false positives while the precision of Metaphone is high in all the cases.

For English, Soundex shows its high recall value in the second place, followed by DMetaphone, NYSIIS and Caverphone in succession. Analogous to English, in Spanish Soundex shows its high recall value in the second place, followed by Metaphone.

The performance evaluation for different algorithms on the synthetic dataset of English and Spanish words is shown in Figure 3.

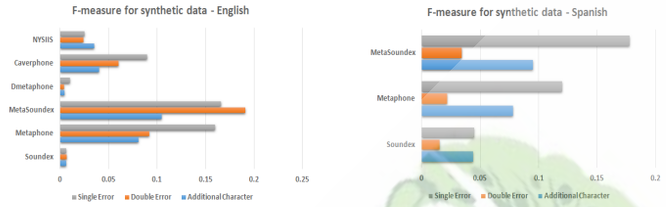

Figure 3. F-measure of different algorithms on synthetic data for English and Spanish languages.

Figure 3 indicate a substantial increase in the efficiency of MetaSoundex algorithm over Soundex and Metaphone. Though Metaphone has high precision, it is less efficient than MetaSoundex due its low accuracy. From the experimental analysis, it can be clearly stated that MetaSoundex has better accuracy than all other algorithms for any data size and type of error, reducing the number of false positives and noise in the retrieved suggestions.

In English language, the highest value of F-measure of MetaSoundex is followed by Metaphone and Caverphone. Soundex and DMetaphone show the highest unnecessary overhead in all the considered arenas. Though DMetaphone has noticeable recall values, it has low precision similar to Soundex due to retrieval of suggestions for both the primary and secondary codes.

MetaSoundex has reduced unnecessary overhead along with the high recall value ensuring that the algorithm reduces noise and can be used in various applications where count of false positives plays a major role. For the synthetic data, based on the type of error, MetaSoundex shows high efficiency for the erroneous list having two errors, while it reflects low value for the words having additional character. Figure 3, it can also be inferred that all other algorithms show average F-measure for double errors for English words.

In the same way, in Spanish language, it can be observed that the results are dependent on type of errors. All the three algorithms show least performance for the words with double errors while highest performance for the words with single error.

6.2 Analysis on Real-World Data – English and Spanish

In addition to the analysis on synthetic dataset, the experimental analysis is also conducted on the real-world ill-defined data to check the efficiency of the algorithms. The data size of the real-world English dataset is 4200 but for the Spanish language the size is nearly 100. The recall and precision values of different algorithms for English and Spanish languages are shown in Table 5.

From the above, it can be stated that the MetaSoundex has the exceptional recall value showing its high accuracy on the real-world data followed by Soundex while Metaphone has the lowest accuracy rate in correcting the misspelled words. The F-measure for different algorithms on the real-world dataset of English and Spanish words is shown in Figure 4.

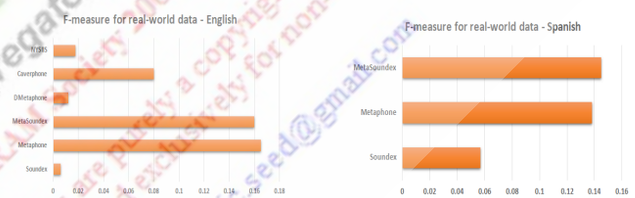

Figure 4. F-measure of different algorithms on real-world misspelled data for English and Spanish languages.

As shown above, for English language, Metaphone shows highest efficiency with a miniature difference to the MetaSoundex algorithm. In spite of low recall Metaphone shows better efficiency

Table 5. Precision and recall values of different algorithms for real-world data – English and Spanish.

Algorithm	English		Spanish	
	Precision	Recall	Precision	Recall
Soundex	0.003	0.8	0.033	0.2
Metaphone	0.096	0.575	0.136	0.14
MetaSoundex	0.012	0.845	0.103	0.24
DMetaphone	0.006	0.75	–	–
Caverphone	0.046	0.62	–	–
NYSIIS	0.009	0.69	–	–

due its high precision, reducing unnecessary overhead. The efficiency of MetaSoundex has an exceptional increase over Soundex, showing that the state-of-the-art MetaSoundex has achieved high precision over Soundex. Though Caverphone has low recall, it shows a better F-measure due to its decent value of precision, which is followed by NYSIIS, DMetaphone, and Soundex.

By the same token, for the real-world data of Spanish language, Meta-Soundex has the highest F-measure compared to other algorithms reducing the unnecessary suggestions. In spite of its high precision, Metaphone has the lowest accuracy of all the three compared algorithms. Soundex has the least efficiency as the precision is very less compared to other algorithms.

From the above analysis on synthetic data and real-world data, it can be clearly stated that MetaSoundex has better values of recall and precision. The accuracy of MetaSoundex is observed to be improved over Soundex as the dependency on the first letter is removed in the MetaSoundex algorithm. Also, the high precision of MetaSoundex is due to the reduced false positives as the algorithm retains the sounds of vowels and diphthongs by the application of rules in Metaphone. As a result, the improved accuracy over existing algorithms and the improved precision over Soundex (which is considered as one of the more accurate algorithms) made MetaSoundex more balanced and efficient than other algorithms.

7. Conclusions

In this paper, we presented an overview of various phonetic matching algorithms in English and Spanish languages. We explained how newly developed MetaSoundex algorithm is different from the existing phonetic matching algorithms. The functionality of different phonetic matching algorithms for both English and Spanish language is illustrated. Then, we justified the need to implement the state-of-the-art MetaSoundex algorithm. The main purpose of the proposed approach is to improve the recall and precision over the existing algorithms, thus increasing accuracy and reduce the noise in retrieved suggestions for misspelled words from various sources.

To improve the recall and precision, a new hybrid algorithm, MetaSoundex, is proposed, whose implementation is mentioned in detail. The efficiency of this algorithm is evaluated and compared with the existing algorithms such as Soundex, Metaphone, DMetaphone, Caverphone, and NYSIIS. The analysis is performed on different datasets having three types of errors, namely, additional character, single error (substituted letter, missing of a letter), and words with double errors (more than one single error) along with the real-world misspelled data. From the experiments, it can be clearly affirmed that MetaSoundex has improved recall and precision over existing algorithms. Also, the implementation of distance factor in MetaSoundex algorithm facilitates to improve the precision over other phonetic matching algorithms.

In this paper, the analysis is performed on English and Spanish languages as both of them are most widely spoken languages across the globe (35)[20]. The development of phonetic matching algorithms and the application of MetaSoundex can also be extended to other languages based on the requirement, which can be considered as future work as it would require more observance and experimental analysis.

8. Acknowledgments

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Annexure-I

MetaSoundex Phonetic Matching for English and Spanish

ORIGINALITY REPORT

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Influence of Gender on Travel Motivation

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Abstract

Our society is a vibrant system and it is sprouting incessantly. Men and women form two pillars of the society and harmonize each other. In past days owing to the character of work primarily domestic responsibilities taken by women they were left behind in the main stream and became restricted to house. This compartmentalization became so strapping to the extent that people did not pay attention to their edification, wellbeing and other things and they were being subjugated. Then women became conscious and fought for their empowerment. Now they are at par with men, are self-governing and thriving in almost all the careers. Due to this paradigm shift there has been an impact on diverse areas of society counting law, policies, working culture, gender ratios at work places, shopping patterns, product development and travel also did not remain unaffected. The impact witnessed by travel is in the form of high increase in women travelers. The industry has impulsively tried to tap this forthcoming niche by responding to their explicit needs. This study is an effort to ascertain whether the travel motivation is affected by gender or not. Modest study has been done in this vicinity though in profundity researches on women preferences of transport, transport patterns, transport comfort, position of women in tourism are extensively available.

Keywords: Destination, Destination Attributes, Motivation, Perception, Outlook, Tourism, Travel Behavior, Travel Pattern

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Editorial Board Excerpt: *At the Time of Submission (ToS) submitted paper had a 06% plagiarism which is a good sign as far as originality description is concerned and fall under an accepted percentage for publication. The editorial board is of an scrutiny that paper co-authored by arvind, shweta and manohar had a subsequent surveillance by the blind reviewer's which in a while had been set right and amended by an author in a variety of phases as and when essential to act so. The reviewer's had in a preliminary stages comment with minor revision with a following observation which at a short span restructured by an author. The comments related to references, abstract and body text is perceptible both subject-wise and research wise by the reviewers during assessment and further at blind review procedure too. All the comments had been shared at a variety of dates by the authors' in due course of time and same had been incorporated by the author in accumulation. By and large all the editorial and reviewer's comments had been incorporated in a paper at the end and further the paper had been earmarked and decided under* ***"Empirical Research Paper"*** *category due to it's research inclination. The research paper emphasize the work in relation to Influence of Gender on Travel Motivation.*

1. Introduction

Tourism is precisely defined as a phenomenon linked with human nature to explore which has evolved into a major industry of the world. It is not a complete activity in itself but has a set of inter related activities. It is a whole interlinked chain comprising of primary and secondary components which put together creates an experience called TRAVEL. The importance of tourism can be accessed by a mere fact that we have UNWTO coordinating for it at an international level and almost each country and state has a tourism ministry. Nearly every institution defines "Tourism" differently. But as essential term, we can sum it up as follows; "Tourism is a collection of activities, services and industries which deliver a travel experience comprising transportation, accommodation, eating and drinking establishments, retail shops, entertainment businesses and the hospitality services provided for individuals or groups traveling away from home". "The sum of the phenomena and relationships arising from the interaction of tourists, business suppliers, host governments and host communities in the process of attracting and hosting these tourists and other visitors" Macintosh and Goeldner.

Travel information specify that women travelers impel the travel market of the world and are influencing travel industry to a great extent as they are earning more, spending more and this segment is evolving as a great niche in travel industry. Nikhil Ganju, Country Manager TripAdvisor, has a view that the

*Author for correspondence

augment in women traveler for business purpose is quite obvious and is the result of the increase in the number of working women. But the significant increase in Indian women opting to travel solo on holiday is a factual astonish.

Study has revealed that nearly 78 percent respondents prefer to stay on a women exclusive floor in hotel or wants to stay in an all women's hotel. These phenomena appeared when women are traveling all-alone.

Travel and tourism associated behavior is an important factor for deciding tourism industry growth, demand and supply chain and international tourist flow pattern. Travel and tourism behavior has been conceptualized on basis of tourist behavior prior to, during and subsequent to traveling. It is generally termed at Pre–travel, During Travel and Post Travel. Based on this Google has released a study that explains five stages of travel that people go through while planning and making travel (Figure 1).

Source http://johnmaclang.com/2017/03/14/five-stages-travel/

Figure 1. Five stages of travel: A study by Google.

However they can further be combined into three stages as – Dreaming, Planning and Booking are the components of the pre travel stage. Experience form the actual feel which are a consolidated result of all the attributes of a tourist destination. This also forms the basis of the third stage that is sharing which is post travel and totally depends on the travel experience.

This study is an attempt to discover whether the travel motivation is affected by gender or there is no significant relation between gender and travel motivation. Modest study has been done in this vicinity though in depth researches on women preference of transport, transport patterns, transport comfort, position of women in tourism are widely available.

2. Research Question to be Tested

1. Is Travel Motivation influenced by gender?
2. Is there a difference in travel behavior of men and women and if yes what are the areas where they differ?

3. Hypothesis to be Tested

Hypothesis (*H1*): Travel Motivation is influenced by gender of the person, and

Null hypothesis (H_o): Travel Motivation is not influenced by the gender of the person.

4. Objectives of the Study

- To study the travel motivation of men and women,
- To find out the attributes that men and women look for while selecting travel destination,
- To study the importance level of various factors related to tourism for men and women, and
- To analyze opinions of men and women and test them for significant difference or similarity.

5. Rational of the Study

Women comprise 50% of the total world population and form an equally large market segment. To tap this segment we need to understand their needs and behavior but there have been limited studies on this subject. The inability to acknowledge, embrace, accept and understand female qualities poses a hindrance to win over the female target market. Various fields have conducted studies to understand female market segment and are being benefited by them. Travel and tourism advertisers and marketing agencies are conscious due to certain differences between men and women choice pattern and associated behavior. Men are convinced by facts and data and weigh the options bases on concrete information. For women, on the other hand however comprehensive data may be, has to be combined with emotional connect and past experience.

The increasing women traveler in leaps and bounds has made this study necessary as this is surely an evolving niche segment in tourism. To leverage the hidden potential of women travelers it is necessary to know what they look for while travelling and how they are different from their counterparts.

6. Research Methodology

An empirical survey was conducted in Pune (India-Maharashtra) in the month of September 2017. A questionnaire was developed by analyzing related preceding research studies and the questions asked were related to destination attributes, demography and motivation. The questionnaires were distributed to both males and females. A total of 150 questionnaires were distributed electronically using survey monkey, what's up, circulating on social media and by sending to various work groups, art groups and office groups. Out of this 124 were complete in all respects and found suitable for data analysis. Sampling of this survey was based on convenient sampling.

7. Research Instrument

The research instrument used was the self-administered questionnaire which consisted of demographics/parameters related to the destination and travel motivation which were to be rated as per their perceived importance and also included the question on effectiveness and availability of the seven pillars of Indian tourism. All the questions were structured and the respondents were required to rate or choose. The questionnaire comprised of initial section having ten questions about the demographics. This was followed by the question on travel behavior, factors affecting the choice of destination, preference of Travel Company, frequency of travel, travel motivations and essential attributes looked upon in a destination. This section was followed by questions on five A's of tourism – accessibility, accommodation, amenities, attractions and activities and attributes related to the form of tourism.

The demographics form an important part of this research as the study revolves around behavior which is the outcome of the sum total of a person's personality which in turn is formed by the person's background, occupation, gender, age, education and various other factors compounded together along with the experiences and show up as a behavior.

8. Findings of Research

8.1 Demography of Respondents (Tabl 1-18 and Chart 1-9)

(A) Gender

Table 1. Gender-wise demographics

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Female	60	48.4	48.4	48.4
Male	64	51.6	51.6	100.0
Total	**124**	**100.0**	**100.0**	

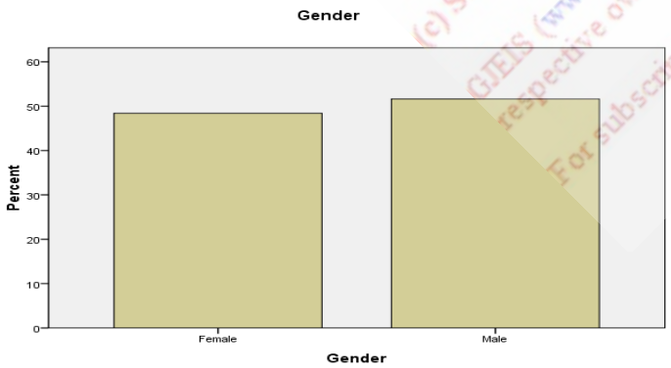

Chart 1. Gender-wise demographics.

(B) Marital Status

Table 2. Gender-wise marital status

Marital Status	Frequency	Percent	Valid Percent	Cumulative Percent
Divorced	2	1.6	1.6	1.6
Married	112	90.3	90.3	91.9
Significant others	1	.8	.8	92.7
Single	9	7.3	7.3	100.0
Total	**124**	**100.0**	**100.0**	

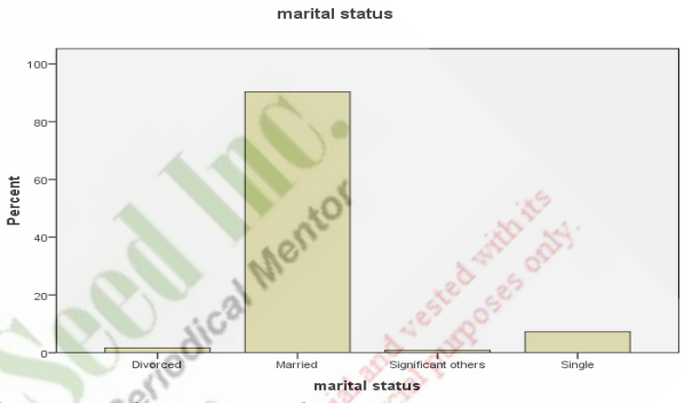

Chart 2. Gender-wise marital status.

(C) Number of Kids

Table 3. Gender-wise number of kids

No of kids	Frequency	Percent	Valid Percent	Cumulative Percent
	5	**4.0**	**4.0**	**4.0**
1	46	37.1	37.1	41.1
2	57	46.0	46.0	87.1
more than 2	1	.8	.8	87.9
not applicable	15	12.1	12.1	100.0
Total	**124**	**100.0**	**100.0**	

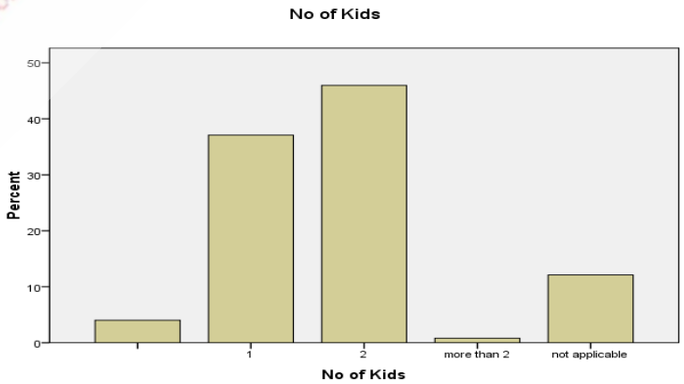

Chart 3. Gender-wise number of kids.

(D) Age

Table 4. Gender-wise age

Age bracket	Frequency	Percent	Valid Percent	Cumulative Percent
21 to 30 yrs	12	9.7	9.7	10.5
31 to 40 yrs.	64	51.6	51.6	62.1
41 to 60 yrs	43	34.7	34.7	96.8
more than 60 yrs.	4	3.2	3.2	100.0
Total	**124**	**100.0**	**100.0**	

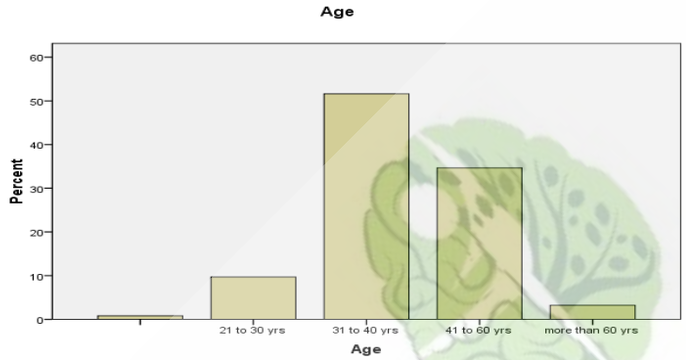

Chart 4. Gender-wise age.

(E) Educational level

Table 5. Gender-wise educational qualification

Education level	Frequency	Percent	Valid Percent	Cumulative Percent
Graduate	29	23.4	23.4	23.4
Other (please specify)	7	5.6	5.6	29.0
Post graduate	70	56.5	56.5	85.5
Profession	18	14.5	14.5	100.0
Total	**124**	**100.0**	**100.0**	

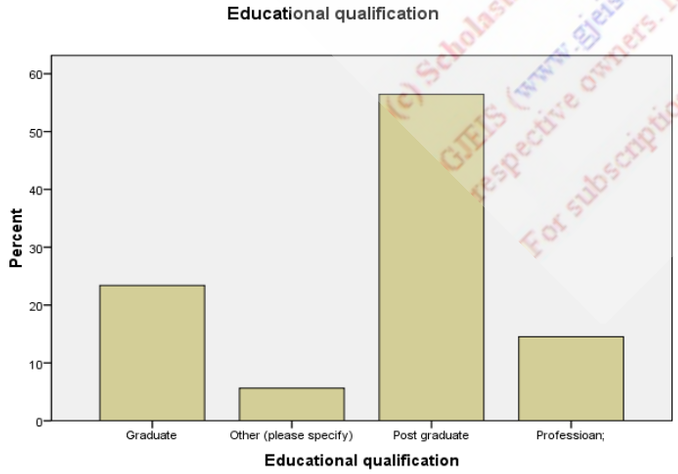

Chart 5. Gender-wise educational qualification.

(F) Occupation mix

Table 6. Gender-wise occupation mix

Occupation	Frequency	Percent	Valid Percent	Cumulative Percent
Home maker	22	17.7	17.7	18.5
Other (please specify)	10	8.1	8.1	26.6
Own Business	6	4.8	4.8	31.5
Professional	85	68.5	68.5	100.0
Total	**124**	**100.0**	**100.0**	

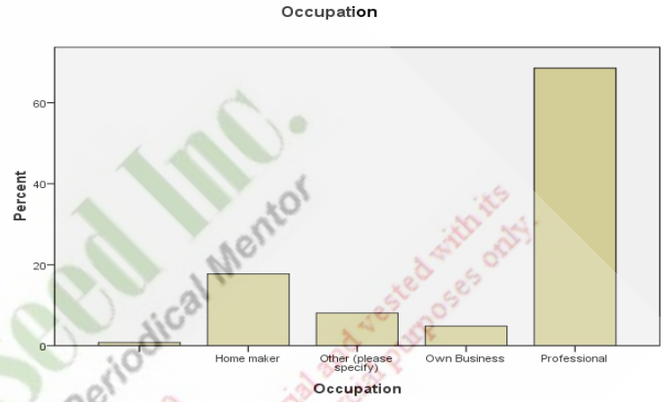

Chart 6. Gender-wise occupation mix.

(G) Income

Table 7. Gender-wise income

Income	Frequency	Percent	Valid Percent	Cumulative Percent
less than 30000	8	6.5	6.5	73.4
30000 to 70000	26	21.0	21.0	33.1
70000 to 1.5 lakh	42	33.9	33.9	66.9
more than 1.5 lakh	33	26.6	26.6	100.0
Don't want to disclose	15	12.1	12.1	12.1
Total	**124**	**100.0**	**100.0**	

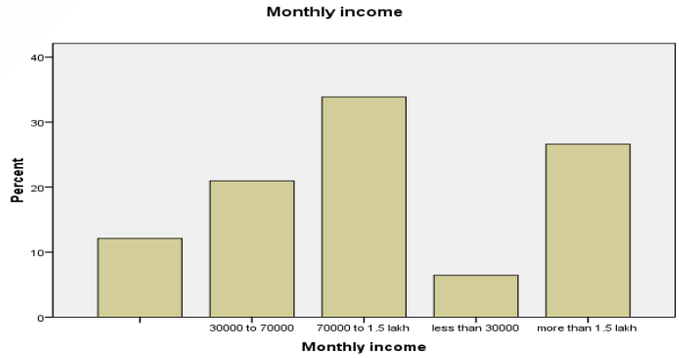

Chart 7. Gender-wise income.

Being a comparative study of males and females an effort was made to search out equal number of responses however the male's responses were more than female responses. Of the total data of 124 respondents 60 were females and 64 were males. Of the total data collected 90% respondents were married with a small proportion of single and divorced respondents. About 46% of the total married respondents had two kids followed by 37% who had single kid. The respondents belonged to an age bracket ranging from 30 year to 60 years. This is supposedly an active time span of persons life time in which he is almost settled and is involved in travel.100% of the respondents were educated with 57% of the people with post graduate degrees. This is also important as the travel is not a necessity and is still privilege of educated and financial secure people. Majority respondents were professionals with small number of homemaker and business persons. The income ranged from 30,000 per month to 1.5 lakh per month and around 26% of the respondents were in the still higher bracket.

To ensure the uniform distribution within the male and female respondents the cross tabulation of data was dome on the demographics. Majority males and females were either married or single. Both married males and females either have 1 or 2 kids. The major educational spectrum lied between graduate to post graduate within the age bracket of 30 years to 60 years. In the same way there was uniformity in income and occupation of males and females.

Table 8. Status and gender cross tabulation

Status and Gender Cross tabulation

			Gender		Total
			Female	Male	
	Divorced	Count	1	1	2
		% within Status	50.0%	50.0%	100.0%
	Married	Count	52	60	112
		% within Status	46.4%	53.6%	100.0%
	Significant others	Count	1	0	1
		% within Status	100.0%	.0%	100.0%
	Single	Count	6	3	9
		% within Status	66.7%	33.3%	100.0%
Total		Count	60	64	124
		% within Status	48.4%	51.6%	100.0%

Table 9. Gender and no. of kids cross tabulation

Gender and No of Kids Cross tabulation

			No of Kids					Total
				1	1	more than 2	not applicable	
Gender	Female	Count	5	22	27	1	5	60
		% within Gender	8.3%	36.7%	45.0%	1.7%	8.3%	100.0%
	Male	Count	0	24	30	0	10	64
		% within Gender	.0%	37.5%	46.9%	.0%	15.6%	100.0%
Total		Count	5	46	57	1	15	124
		% within Gender	4.0%	37.1%	46.0%	.8%	12.1%	100.0%

Table 10. Gender educational qualification cross tabulation

Gender* Educational qualification Cross tabulation

			Education qualification				Total
			Graduate	Other (please specify)	Post graduate	Professioan;	
Gender	Female	Count	13	3	35	9	60
		% within Gender	21.7%	5.0%	58.3%	15.0%	100.0%
	Male	Count	16	4	35	9	64
		% within Gender	25.0%	6.2%	54.7%	14.1%	100.0%
Total		Count	29	7	70	18	124
		% within Gender	23.4%	5.6%	56.5%	14.5%	100.0%

Table 11. Gender age cross tabulation

Gender* Age Cross tabulation

			Age					Total
				21 to 30 yrs	31 to 40 yrs	41 to 60 yrs	more than 60 yrs	
Gender	Female	Count	0	6	30	23	1	60
		% within Gender	.0%	10.0%	50.0%	38.3%	1.7%	100.0%
	Male	Count	1	6	34	20	3	64
		% within Gender	1.6%	9.4%	53.1%	31.2%	4.7%	100.0%
Total		Count	1	12	64	43	4	124
		% within Gender	.8%	9.7%	51.6%	34.7%	3.2%	100.0%

Table 12. Gender occupation cross tabulation

Gender* Occupation Cross tabulation

			Occupation					Total
				Home maker	Other (please specify)	Own Business	Professional	
Gender	Female	Count	0	22	3	3	32	60
		% within Gender	.0%	36.7%	5.0%	5.0%	53.3%	100.0%
	Male	Count	1	0	7	3	53	64
		% within Gender	1.6%	.0%	10.9%	4.7%	82.8%	100.0%
Total		Count	1	22	10	6	85	124
		% within Gender	.8%	17.7%	8.1%	4.8%	68.5%	100.0%

Table 13. Monthly income gender cross tabulation

Monthly income* Gender Cross tabulation

			Gender		Total
			Female	Male	
Monthly income		Count	15	0	15
		% within Monthly income	100.0%	.0%	100.0%
	30000 to 70000	Count	15	11	26
		% within Monthly income	57.7%	42.3%	100.0%
	70000 to 1.5 lakh	Count	13	29	42
		% within Monthly income	31.0%	69.0%	100.0%
	less than 30000	Count	6	2	8
		% within Monthly income	75.0%	25.0%	100.0%
	more than 1.5 lakh	Count	11	22	33
		% within Monthly income	33.3%	66.7%	100.0%
Total		Count	60	64	124
		% within Monthly income	48.4%	51.6%	100.0%

Table 14. In case working gender cross tabulation

In case working* Gender Cross tabulation

			Gender		Total
			Female	Male	
In case working		Count	20	3	23
		% within In case working	87.0%	13.0%	100.0%
	Consultancy	Count	3	0	3
		% within In case working	100.0%	.0%	100.0%
	Government Job	Count	0	2	2
		% within In case working	.0%	100.0%	100.0%
	Other (please specify)	Count	2	1	3
		% within In case working	66.7%	33.3%	100.0%
	Private service/MNC	Count	31	55	86
		% within In case working	36.0%	64.0%	100.0%
	Self Employed	Count	4	3	7
		% within In case working	57.1%	42.9%	100.0%
Total		Count	60	64	124
		% within In case working	48.4%	51.6%	100.0%

Cross tabulation showed uniformity in the sample of males and females with respect to age, income, educational background which is necessary as this is a comparative study. Any strong deviations and differences may affect the final outcome of the research.

An Important aspect of the travel is related to frequency of travel and the company with which a person likes to travel. As the trend shows there has been an increase in solo travelers and backpackers and the family travel which earlier used to be for VFR is not at exotic places and meant for spending quality time, fun and recreation. This shift in the mentality and outlook towards travel has contributed immensely towards the growth of tourism and its form as we see today. The study revealed that almost 46% people travelled once a year and this is followed by another big chunk of 36 percent which travel twice a year.

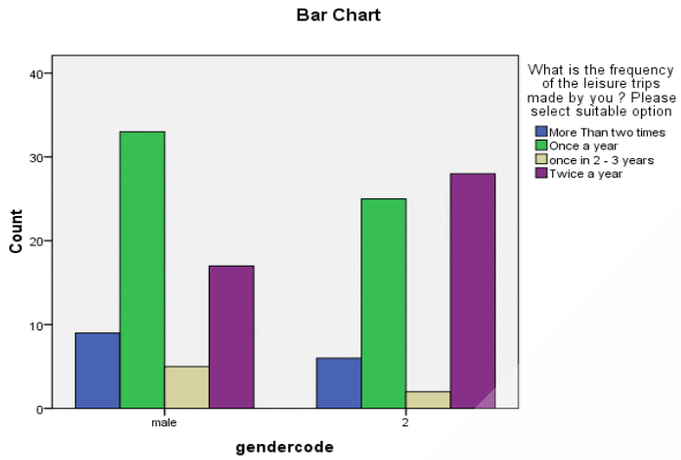

Chart 8. Frequency of the leisure trips.

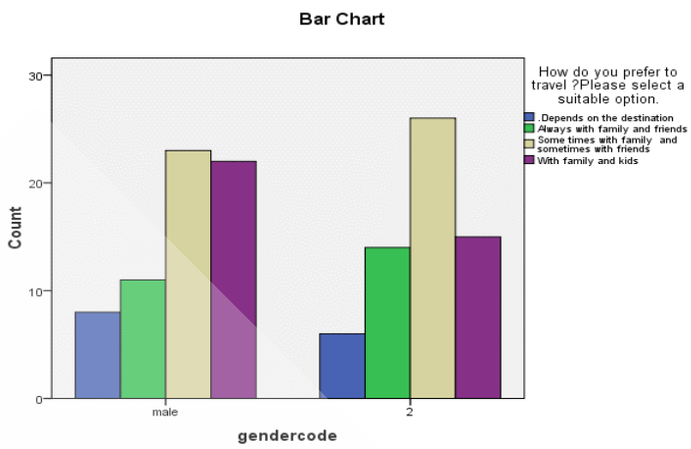

Chart 9. Travel preferences.

Table 15. Frequency of the leisure trips

Gender	What is the frequency of the leisure trips made by you? Please select suitable option				Total
	More Than two times	Once a year	Twice a year	once in 2 — 3 years	
Female	6	25	27	2	60
	10.0%	41.7%	45.0%	3.3%	100.0%
Male	9	33	17	5	64
	14.1%	51.6%	26.6%	7.8%	100.0%
Total	15	58	44	7	124
	12.1%	**46.8%**	**35.5%**	**5.6%**	**100.0%**

Table 16. Travel preferences

Gender	How do you prefer to travel? Please select a suitable option				Total
	Depends on the destination	Always with family and friends	Some times with family and sometimes with friends	With family and kids	
Female	6	13	26	15	60
	10.0%	21.7%	43.3%	25.0%	100.0%
Male	8	11	23	22	64
	12.5%	17.2%	35.9%	34.4%	100.0%
Total	**14**	**24**	**49**	**37**	**124**
	11.3%	**19.4%**	**39.5%**	**29.8%**	**100.0%**

Table 17. Mean and standard deviation

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Freedom, fun and enjoyment	Male	64	2.45	1.708	.214
	Female	60	2.33	1.217	.157
self actualisation and fulfillment	Male	64	4.22	1.386	.173
	Female	60	3.50	1.837	.237
Adventure and exploration	Male	64	2.91	1.388	.174
	Female	60	3.78	1.805	.233
enhanced experience and learning	Male	64	4.17	1.316	.165
	Female	60	4.08	1.266	.163
Increased adaptability and exposure	Male	64	4.62	1.609	.201
	Female	60	4.47	1.408	.182
relaxing and refreshing	Male	64	2.62	1.475	.184
	Female	60	2.83	1.699	.219

Table 18. t- Test

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
Freedom, fun and enjoyment	9.371	.003	.447	122	.656
			.452	113.983	.652
self actualization and fulfillment	10.228	.002	2.470	122	.015
			2.448	109.550	.016
Adventure and exploration	9.344	.003	−3.044	122	.003
			−3.019	110.712	.003
enhanced experience and learning	.000	.990	.381	122	.704
			.382	121.915	.703
Increased adaptability and exposure	3.822	.053	.582	122	.562
			.584	121.440	.560
relaxing and refreshing	.710	.401	−.730	122	.467
			−.727	117.074	.469

Majority of the people travel with family and friends here also there is a change in trend. Earlier the travels were a family affair and now the trend is towards travelling with friends and solo.

We are engulfed by consumerism. In this era of Artificial Intelligence and Algorithms we are continuously bombarded with information. But we selectively receive it. Only if one is looking or in the process of planning their holiday will the advertisements attract their attention. The research revealed that even in the current times which are literally driven by Google the top most factors that affect the choice of travel destination is recommendation of family and friends followed by world renowned destinations. This is true both for males and females. This is followed by information on web and special offers and discounts. It can also be said that 'both males and females think in the same line' or there are no significant differences in the thinking of males and females as far as Choice of a destination is concerned

The man by nature is an explorer .Travel is the result of the motivation which can range from a sport, pilgrimage, meeting friends, adventure, love for nature, relaxation exploration etc. Each of these individual motivations has developed into a type of tourism. To know the difference in travel motivations of males and females the respondents were asked to rank their travel motivations and their Responses were analyzed, mean was calculated and then t-value after comparison of mean scores/(Level of Significance = 0.05 or 5%) was taken. The result is shown in the table above. The p value is shown by Sig. (2-tailed), the table

above clearly indicates that the opinion for choice of a destination is affected by the Gender of the respondent. In majority cases – like Freedom, fun and enjoyment, enhanced experience and learning, Increased adaptability and exposure and relaxing and refreshing both the genders share the same opinion as the p value is greater that the level of significance. However on parameters of self-actualization, fulfillment and Adventure, exploration the p value is less than .05 hence we can say there is a significant difference in the travel motivations.

9. Conclusion

The reason of significant difference corresponding to self actualization and fulfillment and adventure and exploration can very well be related to the changing economic and gender placement in the society. The women have come a long way and now form an active part of the society. They have broken all the traditional ties wherein they were restricted with the household chores and living for other throughout their lives. In all this they used to forget their real self their existence and their happiness. Now a day's women though still a pivotal anchor of the family is no longer guilty to think about herself her joy her wellbeing her interest and her happiness. She has evolved and understands only if she is happy from within can she nurture and hold a happy family. Many researches revealed that women look for self-actualization as during travel they are away from their daily routine jobs and see this as an opportunity to be herself, do what she likes and this gives her a feeling of fulfillment and makes her feel worthy of existence. It is a great time to rejuvenate and live the "Me" life. This is the reason women group and solo travelers have increased in multiples. Women take pride in leaving their families for little time and going on holiday with friends or solo.

Annexure-I

Influence of Gender on Travel Motivation

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Impact of Working Capital Efficiency on Firms' Profitability: A Study on Manufacturing Sector in India

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Abstract

The study highlights the efficiency of manufacturing companies in India in managing their day to day requirements for capital which may have an impact on the profitability of a concern. The concept has been studied before by many academicians. However, the set of study has not been performed for the selected time period and with the sample companies. S&P BSE Stocks as per their market capitalization have been taken from 2009-16. The conversions of sale into cash and profit margins have been incorporated in the study. Using Panel data regression analysis in STATA, results have been interpreted showing significant impact of efficiency in management of operating capital vis-a-vis profits in the firm. The cash conversion cycle of sample companies has significantly affected their net profit margin. It may be deduced from the results that the short term capital managerial efficiency is an important variable and has the capacity to influence profit margins in case of manufacturing units.

Keywords: Gross Operating Cycle, Net Operating Cycle, Net Profit Margin, Profitability, Working Capital Management

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1. Introduction

Working Capital is required by a firm for meeting its day to day requirements. The efficiency in managing this capital may impact the liquidity position thereby also profitability of a concern. The day to day requirements for capital varies from firm to firm due to the size of the company, business context, length related to operations, offering credit to customers along with pricing policy among many others. The present paper focuses upon a common issue which may be faced by all the manufacturing companies in managing their operations. Thus, the study aims to locate the influence of efficiency in managing day to day funds by the firms on their profit segments. In other words, the study intends to analyze the relationship between the operating cycle of these companies and their profitability. This phenomenon in the present paper has been extended to manufacturing sector of India which operates majorly on credit basis.

One of the most significant contributors to India's growth chart is its manufacturing sector. The combined Compounded Annual Growth Rate (CAGR) of these sectors has been reported at 7.32% by Central Statistics Office during the years 2012-2017. This is majorly due to the policy initiatives like "Make in India" initiated by existing set up which has led to a gain in the importance of these sectors for the overall development of the economy. By 2020, India is expected to become the fifth largest manufacturer in the world in an attempt to place India as a manufacturing hub and gain global recognition in the world economy. The current contribution to GDP of these sectors is 16% which is expected to expand to 25% by 2022.

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The bubbling effect by the latest revolution in taxation system of the country (Goods and Services Tax) may further enhance the growth of this sector. The foreign direct investment is on the rise due to liberalized norms adopted by the Government. Business conditions may continue to be favourable as the popular giants like Siemens, GE, Toshiba, Apple Inc., Dabur India, Volvo India; Coca Cola are in the process of expanding their plants in India.

Thus, the study investigates management of day to day funds with profit proportion of sample firms. On one hand, the investment made in the form of receivables, inventory and such other current assets to maintain working capital of an organization is a necessity for survival. On the other hand, it is a cost of liquidity which may have a bearing with profits. Theoretically also it is said, "more the liquidity, lesser would be the profits".

The gross operating cycle is the basis to examine the short term funds which may be blocked in financing working capital. In addition to this, the credit which is allowed by suppliers to the firm also acts as an important determinant in computing working capital requirements.

Thus, the difference between these two variables (gross operating cycle and average payment period which together constitute Cash Conversion Cycle (CCC)) may impact margins for a firm. It may be a case of various indicators for evaluating profitability of a company e.g. ROA, RONW, NPM, OPR. The study has limited its scope to net profit margin as it may be regarded as the most important among all these indicators.

Remaining text has been presented in further sections; second segment in the paper narrates earlier empirical work, third segment explains methodology adopted whereas the fourth section depicts the statistics followed by conclusion last segment.

2. Empirical Work (Prior Literature)

2.1 Managing Operating Funds and Profitability

Found effect of managing day to day funds on profits[1,3,6,9,11]. The relationship between ICP, ACP, APP, CCC and ROA has been established with correlation and regression analysis thereby applying t-test and ANOVA. An insignificant positive relationship had been found between ICP and profits along with ACP. But, the relationship with APP and CCC has been found to be negative. These studies concluded a significant impact of managing day to day funds on profits. A study also depicted a weak opposite correlation.

2.2 Return on Total Assets as an Indicator of Profitability

In study[2,4,13,16] have seen impact of variables from Indian FMCG companies (age of debtors, inventory, creditors) on return on total assets from 2000-2009 using Pooled OLS as well as fixed effect model. The later studied from 2001-2006 selected 2628 companies in Tehran stock exchange by making use of regression. These studies concluded opposite effects.

2.3 CCC: An Estimator for Operating Cycle

Examined business[8,11] cycles and managing of day to day funds for 18 years with sample of registered firms. The study documented that CCC may be a significant indicator in evaluating managing of day to day funds relationship with profitability. It also concluded that business cycles play a significant role in influencing portability of companies. Both studies used CCC and concluded strong association between variables.

2.4 Using Instruments for Day to Day Funding

Studied[12,15] 58 firms with small capitalization in Mauritius using Panel Data Analysis. It documented a rising scenario towards funding regular capital in an aggressive manner. It also reflected using regression that there has been lower profitability for firms which had high investments in stocks and debtors. Both studies used Panel Data and narrated importance of managing operating capital *vis-a-vis* their impact on profit margins.

2.5 Day to Day Funding Strategy (Aggressive/Conservative)

Tested[14] relationship of managing regular funds in an aggressive set up with its profits from 1998-2005 using Panel Data Analysis and Tobin's q ratio. 204 firms were used as a sample and from regression input it was indicated that a negative association between aggressiveness of variables.

3. Research Design

3.1 Selection of Sample

The initial sample of 141 S&P BSE listed manufacturing companies had been taken from www.moneycontrol.com. However, during observation it was found that a classification of companies as per their market capitalization may give better results. Thus the firms streamlined into three segments: large, mid and small as per their capitalization. This stratification helped to collect the data giving equal weight-age to all three groups of companies.

Final sample after the stratification comprised of 65 companies sub-divided into 23 from large cap, 20 from mid-cap and 22 from small cap. The annual reports of these companies were taken from their official websites from 2009-2016 (leaving the recession year 2008 as it may not depict normal data). The data collected was uniformly available for 22 companies out of 65 selected during grouping data into different strata. The data obtained was used to compute the variables explained in the next segment.

3.2 Variables Used for the Study

The indicators for liquidity and profitability may be divided into various categories. Liquidity may be elucidated by the short term funds which have been invested by firms to arrange for day to day transactions. It may be observed from the investment in inventory, receivables etc. The time which represents the blockage in inventory may be classified further into RMSP, WIPCP and FGSP. It can be a relevant indicator in the analysis of cycle of operations because of which profit margin may change.

Another component of cycle is the money parked in debtors/receivables which takes credit period allowed to customers to convert them into liquid assets. Arrangement of liquidity during such time period becomes a necessity for a firm due to which it may have to bear the opportunity cost of earning somewhere else. On the other hand, the factor which carries a negative impact on operating cycle is the time allowed by suppliers to firm for making payments. This reduces the liquidity requirements of a company thereby allowing it time to delay the payments. The sum of inventory conversion and debtor's collection period is known as gross operating cycle. The deduction of creditor's payment period results into net operating cycle i.e. CCC (assumed to be independent variable in the study).

On the other hand, profitability indicators could be ROA, RONW, ROCE, NPM etc. However, NPM may be the core of explaining profit shifts in a firm. This acts as a relevant indicator of profitability for firms.

The relationship between the above two mentioned variables have been established in the present study. The data of 22 firms from manufacturing sector in India is involved to compute CCC and NPM from 2009-2016.

3.2.1 Gross Operating Cycle

The gross operating cycle for the study in particular has been defined as the combination of RMSP, WIPCP, FGSP and ACP In short, the formula applied for computing gross operating cycle is given below:

$$GOC = ICP + ACP \quad (1)$$

where,

ICP = RMSP+WIPCP+FGSP

GOC = Gross Operating Cycle

RMSP = Raw Material Storage Period

WIPCP = Work in Progress Conversion Period

FGSP = Finished Goods Storage Period

ICP = Inventory Conversion Period

ACP = Average Collection Period

3.2.2 Raw Material Storage Period

The RMSP means time period blocked in the store where it may not be put to production and thus blocking of material takes place. The formula to compute RMSP is given below:

$$RMSP = \frac{\text{Average Raw Material}}{\text{Consumption of Raw Material (Annual)}} \times N \quad (2)$$

where,

Average Raw Material = Average of Opening and Closing Raw Material

Consumption of Raw Material= (Opening Stock of Raw Material+ Purchases- Closing Stock of Raw Material)

N= Number of days in a year taken as 360

3.2.3 Work in Progress Conversion Period

The work in progress conversion period refers to the time involved in converting raw material to finished goods. It has been calculated with the following formula:

$$WIPCP = \frac{\text{Average Work in Progress}}{\text{Cost of Production}} \times N \quad (3)$$

where,

Average Work in Progress= Average of Opening and Closing Work in Progress

Cost of Production= (Opening stock of WIP + Consumption of Raw Material+ Manufacturing Expenses + Depreciation- Closing Stock of WIP)

N= Number of Days in a year taken as 360

3.2.4 Finished Goods Storage Period

FGSP refers to time lag between actual sale and ready production for sale. This may be with expressed with the following formula:

$$FGSP = \frac{\text{Average Finished Goods}}{\text{Cost of Sales}} \times N \quad (4)$$

where,

Average Finished Goods= Average of Opening and Closing Finished Goods

Cost of Sales= (Opening Stock of Finished Goods + Cost of Production+Selling, Distribution & Administrative Expenses + Excise

Duties-Purchases - Closing Stock of Finished Goods)

N= Number of Days in a year taken as 360

3.2.5 Inventory Conversion Period

ICP may be defined as the time period involved in conversion of stock into sold out goods. This lag can be calculated with the formula mentioned below:

$$ICP = \frac{\text{Average Inventory}}{\text{Cost of Goods Sold}} \times N \quad (5)$$

where,

Average Inventory= Average of Opening and Closing Stock

Cost of Goods Sold= Opening Stock + Purchases + Manufacturing Expenses - Closing Stock

N= Number of Days in a year taken as 360

3.2.6 Average Collection Period

This period may be explained as the time period allowed to receivables in order to make payment after sale takes place. It can be calculated by the formula below:

$$ACP = \frac{\text{Average Receivables}}{\text{Credits Sales}} \times N \quad (6)$$

where,

Average Receivables= Average of Opening and Closing receivables

Credit Sales= All sales assumed to be on credit

N= Number of days in a year taken as 360

3.2.7 Average Payment Period

This period refers to the time allowed by vendors/suppliers for payment of dues related to raw materials. This can be computed with following formula:

$$APP = \frac{\text{Average Payables}}{\text{Credit Purchases}} \times N \quad (7)$$

where,

Average Payables= Average of Opening and closing payables

Credit Purchases= Total purchases assumed on credit

N= Number of days in a year taken as 360

3.2.8 Cash Conversion Cycle

Cash conversion cycle in the present study has been taken to be the net operating cycle calculated with an adjustment of average payment period in the gross operating cycle. The following formula has been used to compute this cycle:

$$CCC = GOC - APP \quad (8)$$

where,

GOC= Gross Operating Cycle

APP= Average Payment Period

Net Profit Margin has been taken as an indicator of profitability in an attempt to investigate day to day funds management efficiency *vis-a-vis* profit of different manufacturing companies. Its computation process has been discussed below:

NPM refers to a key indicator for a company to assess its profitability. This has been used as one of the measures in the study. It has been computed with the help of following formula:

$$NPM = \frac{PAT}{NS} \times 100 \quad (9)$$

where,

NPM = Net Profit Margin

PAT = Profit after tax

NS = Net Sales

3.3 Statistical Software

STATA software (ver.12.0) is used for studying effect of day to day fund management by companies and its bearing on profits of firms.

3.4 Hypotheses Testing

H_0: "The efficiency with which companies manage their working capital does not have a significant impact on the net profit margin of the firms".

3.5 Technique Used

Panel data analysis was used to investigate influence of managing operating capital on profits of firms[5] which is a group of individuals for whom the observations are made over multiple time periods. It is also known as longitudinal data.

"A panel dataset is considered a better model than a traditional pure cross section or time series datasets. It is because of the econometric benefits that a panel dataset offers, that is being widely used by researchers in the field of finance and economics to study the cross country issues. The large of observations that are contained in a panel data is the biggest advantage that this dataset holds. Due to large number of observations more accurate and reliable estimates are produced, thus enabling us to test whether the linear regression results are robust or not. Panel data also alleviates the problem of multi-collinearity by making the explanatory variables vary in two dimensions (cross-section and time series), thus making it less likely for the variables to be highly correlated".

In this paper all three techniques of Panel Data Analysis have been applied. Along with "the common constant model (OLS regression), both Fixed Effects (FE) model and Random Effects (RE) model have also been used for exploring the impact of working capital management efficiency on profitability in the context of manufacturing concerns because the OLS regressions takes into account the country –specific effects and the FE and RE models check for the time effect".

3.5.1 The Common Constant Model

Ho: there is no difference between the constants (homogeneity), and thus, the pooled OLS technique is applied.

$$H_0: \alpha_1 = \alpha_2 = \alpha_N \quad (10)$$

But it is practically not possible. Therefore, may have it own limitations. Thus, it is important to include the fixed and random effects in the method for estimations.

3.5.2 The Fixed Effects Model

This model assumes that C is fixed over time for each group and that every group has a different constant.

This model is given as below:

$$y_{it} = \alpha_i + \sum_{k=1}^{k} x_{itk}\beta_k + \varepsilon_{it} \quad (11)$$

where,

i = 1,2,…..,N

t = 1,2,…..,T

where y_{it} represents the value of the dependent variable, i.e. net profit margin in cross-section i (twenty- two companies in our case); T is the length of time series, i.e. 2009-2016 for twenty two manufacturing companies; k is the number of independent determinants explaining the dependent variable. The term α_i denotes unobserved company- specific effects which are assumed to be fixed over time and different across companies i. x_{it} and β represent the vectors of explanatory determinants and their parameters respectively. "The subscript i indicate individual companies, while t shows different time periods. ε_{it} represents the vector of the error component which is assumed to be independently distributed across i and over t with mean zero and variance σ^2".

3.5.3 *Random Effects (RE) Model*

Random parameter is the assumption for constants in this model. Therefore, constants tend to vary and do not remain fixed over time.

In this, the model is given as below:

$$y_{it} = \mu + \sum_{k=1}^{k} x_{itk}\beta_k + \nu_{it} \quad (12)$$

where,

i = 1,2,…..,N

t = 1,2,…..,T

$\nu_{it} = \alpha_i + \varepsilon_{it}$, t = 1,. . . . , T is the composite errors

For each t, ν_{it} is the sum of the unobserved effect and an idiosyncratic error. α_i is assumed to be independently distributed across *i,* with mean zero and variance σ_α^2 and uncorrelated with X_{it}. The error term ε_{it} is assumed to be independently distributed across *i* and over *t* with mean zero and variance σ^2.

Through the excerpts from panel data analysis, when it comes to fixed effects model, it is the intercept terms for the companies that differ, however in case of random effects model the difference can be seen in the error terms of the companies.

3.6 Hausman Specification Test

If the Panel is found to be balanced, in general FE model works out well. Contrary to this, if it is found disturbed, RE shall work in a better manner. Hausman specification test (1978) provides guidance in locating the right model. Under such situation, Ho shall be:

- Null Hypothesis: H_0: Cov (α_i, X_{it}) = 0 i.e. Random Effect model is suitable, if Null Hypothesis is accepted.
- Alternate Hypothesis: H_a: Cov (α_i, X_{it}) ≠ 0 i.e. Fixed Effect model is suitable, if alternate hypothesis is accepted.

The Hausman test uses the following test statistic:

$$H = \left(\hat{\beta}^{FE} - \hat{\beta}^{RE}\right)\left[Var\left(\hat{\beta}^{FE}\right) - Var\left(\hat{\beta}^{RE}\right)\right]^{-1}\left(\hat{\beta}^{FE} - \hat{\beta}^{RE}\right) \sim \chi^2$$

with *k* degrees of freedom (13)

where,

H= Hausman Test Statistic

$\hat{\beta}^{FE}$ = Fixed Effects estimates (Vector)

$\hat{\beta}^{RE}$ = Random Effects estimates (Vector)

χ^2 = Chi- Square distribution Statistic

If p value is less than 0.05, FE shall work out.

If it is greater than 0.05, RE shall be a better model.

p = probability value of the test statistic.

In case, p-value > significance level, Ho may not be turned down. Thus, RE is a better model. But, if opposite is the case, Ho shall stand to be rejected and thus, FE shall be a better model.

3.7 Choosing the Best Model

After applying the three estimations of panel data analysis, one needs to find out which model out of the three is a model of best fit. This is done by applying various statistical tests.

First, the study checks which model among the OLS regression and FE should be used. In order to check the fixed effects, F-test is applied.

If F-statistic > F-critical value Ho may be rejected, i.e., the constants are homogeneous and hence there is no difference between the constants in both the groups and therefore FE model can be used for estimation.

Checking at the bottom of fixed effect regression (result shown in appendix), there is an F-test just below the table: "F test that all u_i = 0:".

This test is for the null that all coefficients for fixed effects are zero, i.e. a test between fixed vs. Pooled OLS. In case Ho stands rejected, FE becomes significant, so one should use them. Otherwise, just go for the Pooled OLS.

The next step is to make a comparison between FE and RE model to find out which of the two should be used. This can be done by using Hausman specification test. If p value < level of significance i.e. Ho stands rejected and the FE model can be used. Contrary to this, if p-value is more than the level of significance, there may not be enough evidence against the null hypothesis and thus it may be concluded that RE model is more suitable (Results in appendix).

Then, next is to decide among common constant model and RE model,

Breusch–Pagan Lagrange Multiplier (LM) test (1980) is computed. If statistic shows a significant difference across countries then RE model should be used. Else, general OLS model may be run.

4. Results and Analysis

Table 1 shows the maximum and minimum values obtained for variables X (Cash Conversion Cycle) and Y (Net Profit Margin). It has been observed that maximum value was for Procter and Gamble and minimum was obtained for Hindustan Unilever Limited.

Once the preliminary investigations are done, as a first step to the regression analysis, to test the stationary of both the data sets, Levin- Lin- Chu test has been applied (Table 2). Overall panel here is balanced because for all the 22 companies, i.e. 'i= 22', the time period for the selected variables under study is uniform, i.e. for all the 22 companies 't' is from 2009-2016 (8 years).

Following hypothesis is tested under the Fisher Panel test for all data sets among independent determinants and dependent variable:

- Null Hypothesis: H_o: Panels are not stationary
- Alternate Hypothesis: H_a: Panels do not have a unit root problem

4.1 Regression Analysis

After testing the stationary, in order to capture the distribution of NPM across all 22 companies over eight years period, the estimates of following equation are formed by below given model:

1. Pooled Ordinary Least Square (OLS Model),
2. FE Model, and
3. RE Model.

Table 3 analysis, it is clear that CCC is found significant at 5% level of significance. The F-statistic in above model is also significant at five per cent significance level meaning that the independent determinant is able to influence the dependent variable i.e. Net Profit Margin significantly and also that this model is of best fit. The R-square of the model is though quite low which means that this determinant is able to explain only 3.46% variation in Net Profit Margin, however, in panel data even this is well enough to explain the variations.

Once the Pooled OLS regression model is run, regression diagnostics needs to be conducted to check the problems of multi-collinearity and heteroskedasticity and then arriving at the model of best fit by removing these problems if they exist. However, since in this study, only one independent variable is included, thus there is no problem of multi-collinearity.

Breusch-Pagan/ Cook-Weisberg (test) is used Ho of constant variance in the model. Based on the p-values of B-P test, i.e. 0.0518 with the Chi- square value of 3.78, null hypothesis cannot be rejected as the p- value > 0.05. Thus, it can be said that heteroscedasticity problem is not there.

Table 1. Summarizing the data of dependent and independent variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Y	176	−15.56388	1031.459	−12732.9	1597.43
X	176	18.50385	29.24509	−100.1682	284

Table 2. Panel unit root test applying Levin-Lin-Chu Unit-root test on balanced panel

Variable	Adjusted t* Statistic	Null Hypothesis (Accepted/ Rejected)	Inference about the data series (stationary/ non- stationary)
NPM	−10.2287	Rejected	Stationary
p-value	0.0000		
CCC	−5.7203	Rejected	Stationary
p-value	0.0000		

Table 3. Pooled OLS regression model (Results)

Dependent Variable: NPM	
Independent Variable	**Coefficients with their t-statistics**
Intercept	−136.9494 (−1.51)
CCC	6.5600 (2.50)**

** denote the significance at 5% significance levels. Figures in parenthesis () represent the t- statistic.
Source: Compiled by authors

Table 4. Results of FE and RE models

Dependent Variable: NPM		
Independent Variable	**Fixed Effects Model**	**Random Effects Model**
Intercept	−89.59364 (−0.85)	−124.702 [−1.08]
CCC	4.000776 (0.97)	5.89813 [1.97]**
F- Test	{1.88}**	–
Wald χ^2	–	(3.88)**
R^2 within	0.0061	0.0061
R^2 between	0.1443	0.1443
R^2 overall	0.0346	0.0346
Hausman Test (p- value)	0.45 (0.5010)	
Breusch-Pagan Lagrange multiplier (LM) test: Var(u) = 0	-	χ^2= 4.94 Prob>χ^2 = 0.0131

Note: Parentheses ( ) and [ ] show the *t*-value and *z*-statistics, respectively. ** denotes the significance at the 5% level. The above table is author's own compilation based on computations done on STATA (ver. 12.0).

The estimation results of both the models, i.e. FE and RE are presented in Table 4.

Table 4 analysis, it is indicated FE is a better model than constant model because F test (u_i=0): where F (21, 153)= 1.88 which is found significant at 5% level of significance and therefore shows Ho (OLS) may be rejected. Hence, FE shall be suitable as compared to constant model.

The next concern is the choice between FE and RE models. To select appropriate model for the empirical analysis, Hausman specification test is conducted. The Chi-square value as per this test (0.45) is not found to be significant at 5% level of significance, suggesting that RE model is the preferred one.

Lastly, "when the RE Model is compared with the pooled OLS Model with the help of Breusch-Pagan Lagrange Multiplier (LM) test, it is observed that the Prob>χ^2 is less than 0.05. Hence, we can reject the null and conclude that random effects is appropriate, i.e. there is sufficient evidence of significant differences across companies, therefore RE model is the most appropriate model".

Therefore, the result of RE model is discussed here in the study. It is found that CCC (proxy used for working capital management efficiency) is found as a significant determinant in explaining the variation in NPM (proxy used for profitability) of manufacturing companies. The findings are well supported by the literature that exists in this context.

The between R^2 is "How much of the variance between separate panel units i.e. 22 companies in the present case does this model account for" which in this case means that only 14.43% variance between these 22 companies is explained by the determinant in this model. The within R^2 is "How much of the variance within the panel units does this model account for", i.e. 0.61% variance within each company in this case is explained with the help of RE Model which is the model of best fit and the R^2 overall is a weighted average of these two, i.e. 3.46% variation in totality between the companies and within each company together is explained by this model. The Wald Chi- square statistic is also significant at 5% level of significance making it a model of best fit.

5. Conclusion

Day to day capital is a constituent among many other important components on balance sheet for any company. It becomes all the more relevant when it is extended to manufacturing sector which operates purely on credit basis even for its routine business transactions. Hence, the flow of short term funds is very crucial for this sector of economy. It is needed by firms for regular payments, day to day transactions, settlement of dues etc. Thus, manufacturing sector has been taken to be studied for working capital efficiency in the present study.

Increasing profit and maintaining liquidity at the same time may be a challenge in tracking operating capital changes. Thus, it may be a tedious task to balance between these two parameters. Theoretically, it has been mentioned that liquidity and profitability have got an inverse relationship with each other. The empirical investigation supports this phenomenon when it was tested with varied industries and companies[1,3,6,10,12]. It may be interpreted from these studies that the blockage of funds in various current assets like inventory and receivables led to low profitability for firms.

From the present study it may be inferred that day to day capital management efficiency may have a significant influence on profit margins of companies of manufacturing sector of India. The objective of the study called for testing association between CCC and NPM (taken as variables in the study)[8,10]. Empirical findings described that 14.43% of variation in operating profits may be explained by CCC of firms. It may be deduced that operating cycle (CCC) which may also be capable of explaining liquidity requirements of a firm may have an impact in determining profitability of firms[2-4,16]. Thus, it may be said managing day to day capital plays a significant part while determining profitability for a company. The firms may strategize their operating capital along with CCC and plan in accordance towards their profit margins.

The study has limited its scope to two variables i.e. cash conversion cycle and net profit margin. Its scope for time period has also been kept limited post recession. The number of companies has also been limited to 141. The area of firms has catered to manufacturing sector in particular. The same line of investigation may be carried further with broader variables taking pre and post recession comparative figures. More industries and companies could be a part of an elaborative study.

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Annexure-I

Impact of Working Capital Efficiency on Firms' Profitability: A Study on Manufacturing Sector in India

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Impact of Integral Humanism on Economic Wellness

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Abstract

Integral Humanism is a doctrine developed by Pt. Deen Dayal Upadhyay. It emphasizes on an economic model for the entire Indian society. It also evaluates the good points of capitalism as well as socialism and tries to adopt the middle path. Pt. Upadhyay is not in view of accepting any social systems which believes on individualism. He also rejected the concept of communism which crushes individualism. According to him society is a natural living organism having 'national soul' or 'ethos'. It is not a social contract between individuals. So, both the concept of capitalism and communism is not accepted as it is. Integral Humanism also stands out for its emphasis on decentralization and attaches immense importance to the economic progress of every human being. The doctrines of Pandit Deendayal Upadhyay are the guiding principles of government policies. In this paper the researcher is trying to evaluate the economic development of India in the light of the above concept.

Keywords: Economic Wellness, Decentralization, Integral Humanism

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1. Introduction

According to Pandit Deendayal Upadhyay an individual comprises of body, mind, intellect and soul. For all round development of a person these four components are to be taken into consideration. True happiness can be attained by satisfying these components. Not only should we think about material attainment, we should also consider the spiritual progress for individual development. This completeness will lead to doing some positive step towards the society as well.

Upadhyay has argued that western political philosophies cannot be accepted in its true form as it believes in materialism and overall well being of an individual only. He was also of the view that both capitalism and socialism have flaws as they encourage greed, exploitation, class antagonisms and social anarchy.

2. Review of Literature

According to Dharmasenan S., Dr. K. Sambath Kumar in his research paper "Integral Humanism: A Political Philosophy Rooted on Indian Culture" says that the Indian culture has ethos, virtues; values are deep rooted in the society. So the concept of Integral humanism is very apt for our society.

Shalley Bakshi "Economic Development with special Reference to Integral Humanism", focusing only on the economic development will not help India in achieving prosperity and development. There should be a total reconstruction which can be linked to the concept of integral humanism.

Kumar, Suresh "Socio-Political and economic ideas of Pt. Deendayal Upadhyay - A study of Integral Humanism", has elaborated on the views on Pt. Deendayal Upadhyay. He has elaborated on his thoughts regarding the country and retaining the cultural heritage".

*Author for correspondence

2.1 Integral Concept of Economic System

Upadhyay said that every nation develops certain institutions to attain its needs. But with the changing circumstances a constant reshaping of these institutions and systems has to take place. He is of the view that Indian culture focusses more upon society and social aspects, so the changes are not readily acceptable.

But centralisation of economic as well as political powers is not a solution to this. In all cases in a country like India which is developing, he said that attainment of the nation's objectives was the prime goal. To meet these goals and to keep pace with the development the state has to reinforce certain plans, actions. It must also undertake direction, regulation and control of all economic efforts. Under some specific circumstance it may have accept the responsibility of ownership and management as well (Figure 1).

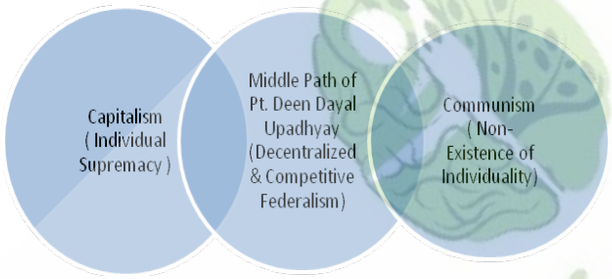

Figure 1. Comparative of economic system.

In a speech given by Pandit Upadhyay in 1965 he stressed upon the happiness of "Man", the Integral Man. He said that both the systems i.e. capitalism as well as communism do not look to the happiness of Man- His aspirations and the development of complete man. These systems fight with the true nature of Man and do not take care for his interests.

According to him, Capitalist system only talks about economic man, who is busy with the material well being. This system lays stress on the maximisation of profit which in turn reduces the human values. The Socialist system was a reaction to the capitalist economy which again does not talks about the humaneness. Under this system all the business of the states abide by the rigid rules formulated by them and individual discretions are not considered.

According to Deendayal, neither the capitalist nor the socialist system is capable enough competent to grow a social systems which can think about the benefit of both – the man as well as society. According to him both these systems fail to establish a society that can be full of human values and ethos. So, in his view these systems are not suitable for our country where we need to have a economic system which can help in the development of human qualities thus enabling in establishing a rich civilization. This is what India is known for – values, culture and ethos.

2.2 Key Areas of Economic Wellness

The Economic Wellness talks about the financial security – present as well as future. The present financial security relates to the ability of the individuals, families or communities to meet their day to day expenses. Future security talks about the financial well- being of individuals and families by meeting their future financial needs so that they are able to achieve their financial goals and build assets. Human capital and Economic wellness is inter-related, in the sense that through the knowledge and skills of the people of a country can we attain the wellness.

The key indicators of economic well being are: GDP National Income (Figure 2).

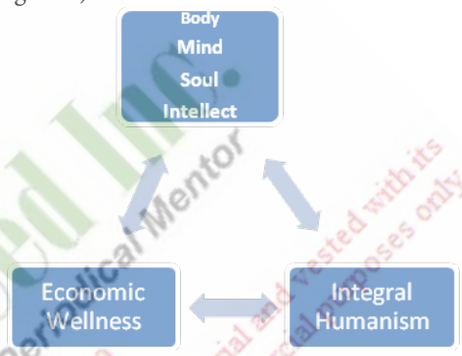

Figure 2. Inter-linkage of integral humanism and economic wellness.

His integral approach talks about a harmonious society which can be achieved through satisfying the needs of body, mind and soul, body (hunger, shelter), the mind (traditions), intelligence (reforms), and the soul (common aspirations of a people that shape their unique culture).

The concept of Integral humanism talks about the economic as well spiritual development of every individual. He further emphasizes that no economic development is possible without spiritual development and vice versa. The core belief being that to achieve this goal of development every individual must ensure proper production, distribution and consumption and goods and wealth. There should be well regulated society. The system should be developed in such a way that there should be all round development. In no case there will be an acceptability of having progress in one direction and lacking in the other.

According to the researcher's economic well being can be achieved if and only if the personal health of a person is achieved. Integral humanism talks about personal satisfaction. The concept says that money is not the important tool but every person in society must have sufficient so as to meet their basic need.

2.3 Indian Roadmap to Competitive Federalism

The economic policies formulated by Nehru were rejected by Pandit Upadhyay. He believes that the nehruvian concepts are taken from the western ideologies and does not match with the cultural heritage of our country. According to Upadhyaya there is a need to strike a balance between the Indian and the western thinking. The model proposed by Nehru was of rapid growth and industrialization but it lacks poverty alleviation. His ideology has also given rise to social disparities and regional imbalances which are hurdles for the development of our economy. Our traditional culture believes that we should be contented with what we have rather than running after the material wealth.

Contrary to this Integral Humanism emphasises on all aspects of an individual's life be it social, economic, political, cultural, spiritual and so on. 80% of our country's population resides in Rural India, so our development should be considered keeping in view the needs of such people. We should lay emphasis on the development of cottage and small-scale industries, agro based industries and agriculture. If development is discriminated, there will be no development. There is a large migration of human capital from rural to urban areas, which should be checked. This can happen only if we are able develop resources at their doorsteps. In short we can say that for a country like ours should focus more on all round development rather in economic development only. The focus should be on social, economic, spiritual, environmental, agricultural etc. This kind of integral approach can only lead to a truly prosperous India.

According to this view there should be industrialization in India and equitable distribution of farm holdings. Pandit Deendayal is of the view that for the establishment and proper development of the industry, we have to consider the seven M - Man, Material, Money, Management, Motive power, Market and Machine. The skill, ability, and capacity of workers to whom work is allotted must be taken into consideration. Work may need trained and professional workers in large numbers. Material availability is also important. The governments have various plans to revive all these thoughts through various programmes.

According to the study government has formulated various plans for the upliftment of the rural and poor masses of India. According to the Humanism ideology the development can be done also by retaining our culture and adopting the best from the western culture. In this context the Jan-Dhan Yojana is a very good initiative taken by the government to make the accessibility of the banks to poor masses. This will in turn increase the money in circulation in the economy. According to the data presently we have around 12.77 beneficiaries in the urban sector and 18.27cr. in the rural sector. This is an achievement for the economy. During the demonetization these accounts were used for exchanging of the notes thus enabling the inflow of cash.

Another very important problem is about employment for which various programmes have been started like Skill India, Make in India, Kaushal Vikas Yojana. National Skill Development Corporation has been set up to look into these issues. Under this scheme 10,28,671 have been enrolled with 382 active jobs.

Kaushal Vikas Yojana is being accomplished with the help of higher education institutes. These institutes are incorporating various programmes in their curriculum to skill enhancement. They are also offering separate courses so that weaker students are also equipped with some skill and thus enabling them to take up some job or establish their own business.

Government Programme	Provisions
Pradhan Mantri Grameena was Yojana	To provide financial assistance to people for constructing their own house
Integrated Child development Services	To take care of the health and malnutrition problems among children below the age of 6 yrs.
Integrated Rural Development Programme	Self-employment program to increase the income of target groups among the poor and The scheme has been merged with another scheme named Swarnajayanti Gram Swarozgar Yojana (SGSY)
Jawahar Lal Nehru National Urban Renewal Mission	To provide quality life and improve the infrastructure of the cities.
Mid-Day Meal Scheme	To provide free of cost lunch to all children below 6 yrs.
Kaushal VikasYojana	To develop the skills of the youth and helping them to be self- reliant.
Pradhan Mantri Jan DhanYojana	National Mission for Financial Inclusion to ensure access to financial services, namely Banking Savings & Deposit Accounts, Remittance, Credit, Insurance, Pension in an affordable manner
Start-Up India	To start new small scale industries

3. Conclusion

From all the study it can be concluded that the economic well being of a country has strong association with the integral humanism concept. The culture and traditions of India has deep rooted values. Indian culture speaks about soul and mind satisfaction rather than giving stress on materialism in contrast to the western concept. Right from the 'Vedic' period India has been a country having very rich values and ethos. So, the thoughts of Pandit Deendayal Upadhyay are in these lines only. According to him our country can only prosper if every person has enough for himself to satisfy his needs. The government has developed so many plans keeping in view the concept of federalism given by Pandit Deendayal Sharma. This study has a further scope to analyse the percentage of development that have taken place on implementation of this programme and the effect of economic wellness of the country.

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Annexure-I

Impact of Integral Humanism on Economic Wellness

ORIGINALITY REPORT

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Blurred Work - Life Frontiers: A Paradigm Shift in Employee Social Networking Privacy

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Abstract

A large number of millenials are expected to join the workforce by the year 2020. The 'Selfie Generation 'as they call it, differs from the previous generations in terms of their workplace attitudes, aspirations and technological adaptations. They exhibit great affinity to digital world. These characteristics of millenials are going to have a strong impact on the future workplaces. Growing popularity of digital gadgets and social media among the millennial workforce has become a cause of concern among corporate. Digital craze among employees may make them sometimes blind to the dangers of sharing sensitive information about their employers/ organizations which may result into troubles for the firms in question. Modern day employers have started monitoring their employees conduct (including monitoring the employee's social media accounts, mobile communications, laptops etc) at and beyond official work frontiers , to their defense. But as there are always two sides to a story, this form of monitoring has put employee privacy at risk, thereby blurring their personal-professional (life) boundaries. This paper seeks to study the contemporary trends in employee monitoring and resulting issues concerning employee social networking privacy. The paper also seeks to address the ethical and legal dimensions connected with employee social networking privacy.

Keywords: Digital Craze, Employee Monitoring, Millennial, Social Networking Privacy, Work Frontiers

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Editorial Board Excerpt: *At the Time of Submission (ToS) submitted paper had a 01% plagiarism which is a good indication as far as originality report is concerned and fall under an accepted percentage for publication. The editorial board is of an observation that paper had a subsequent surveillance by the blind reviewer's which had been rectified and amended by an author in a range of phases as and when required to do so. The reviewer's had in an initial stages comment with minor revision with a following remark which at a short span restructured by an author. The comments related to references, abstract and body text is noticeable both subject-wise and research wise by the reviewers during evaluation and further at blind review process too. All the comments had been collective at a variety of dates by the authors' (vikas & vaishali) in due course of time and same had been integrated by the author in addition. By and large all the editorial and reviewer's comments had been incorporated in a paper at the end and further the paper had been earmarked and decided under **"Theme Based Paper"** category as its highlights and emphasize the work in relation to Employee Social Networking Privacy*

1. Growing Internet Penetration and Eruption Digital of Volcano

India is on the verge of becoming the youngest country in the world by the year 2020 signifying the role the millenials are expected to play in its growth. Millenials are also said to be the torch bearers of India's Digital revolution. According to report titled India@Digital Bharat the number of internet users are expected to grow to over 550 million by the year 2018. Currently India is the second largest country in terms of mobile internet users in the world.

It is predicted that business landscape and in turn the world of work would be greatly influenced by the millenials, a cohort born between 1980-2000 who are entering the workforce in huge numbers. Currently India has over 400 million millennial representing one third of its population consisting 46% of its workforce. A loyalty-lite, techno freak generation that prefers to communicate electronically, increasingly hooked to social tools like social networking, apps, blogs etc. A research by COMPTIA suggests that one of the key trend governing future workplaces will be blurred lines between individual's personal and professional lives due to extensive use of technology by the millenials.

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Thus sharing of the information via social networking sites by the socially active employees is increasingly becoming a cause of concern for the corporate as also acknowledged by the employees? This has resulted in adoption of various practices pertaining to monitoring the social media indulgence of the employee, by the modern day employers.

With social media surveillance of employees taking the front seats in the corporate, employees are getting increasingly concerned about the invasion of their privacy by their employers.

This paper attempts to examine the contemporary trends in employee monitoring and corresponding issues concerning employee social networking privacy. The paper also seeks to address the ethical and legal dimensions connected with employee social networking privacy.

2. Managing the Impressions

The underlying psychology of growing millennial craze for social media can be well understood through *Erving Goffman*'s theory of self presentation (1959) which suggests that it is the mass media context that impacts the interpersonal interactions amongst the millenials. Millenials are able to create vivid versions of them while communicating with the world through various social media platforms. They are found to be more reserved during face to face conversations but are more comfortable while communicating through social media as it provides them an opportunity to draft the message in advance.

Furthermore, Millennials have a drive to succeed and expanded drive related to accomplishing career objectives[18]. This parallels how Millennials utilize social media and outlines their reliance on gathering of people cooperation when utilizing social media. If at all, by chance millennials fail to get responses on their posts, they may alter them or erase the content as to not diminish social rank or ubiquity. Myers and Sadaghiani (2010)[9] suggested that millenials feel comfortable communicating their considerations and suppositions with others and are comfortable addressing specialist figures through social platforms Seemingly, narcissism can be seen in how Millennials utilize social media, particularly Facebook.

Narcissistic inclinations rise on social media as millennials have an overstated capacity to control their image by posting what they regard as imperative or commendable[10]. This can be accomplished by posting status overhauls portraying a life occasion they had fairly taken part in, posting a picture of a fantastic involvement, or sharing another Facebook user's post about an encounter they shared. This is an illustration of how impression is being created on social media.

Millennials utilize social media for excitement, instruction, and most imperatively, as source of interpersonal communication[2]. This gives the era, communication alternatives that their forerunners didn't have accessible. Many a time's millennials have been able to make connections with people from distinctive nations as social media provides them with easy and prompt access. Moreover, the era is able free from virtual circumstances or discussions millenials find unappealing, with more ease and less repercussions than one might encounter with in-person discourses. The negative suggestions/comments on social media on millennials strengthen their resolve to modify their self presentation. By modifying the ways they show themselves on virtual platforms, millenials make an image of self that is alluring to world outside. All said and done, every time the use of of social media is not negative in nature. Social media is seen to have boosted person's self-worth or self-esteem.

Millenials utilse social media for various purposes this utilization may take several forms, such as a individual venting disappointment in a status toward companions and family or posts in community groups depending upon common interests[3]. Individual is able to feel a sense of approval through the number of likes or comments gotten on a post. Millennials were found to utilize social media for individual acknowledgment and as approval from connections with people in their contacts.

3. Progressively Blurred Work-Life Frontiers

In this age of digital revolution, it is difficult to ascertain whether an employee is busy with the organizational work or personal business at any given juncture. Employees these days retrieve employer's computer systems from home both amid and beyond standard working hours. Employees frequently interact with one another by email at all hours from any place. They also regularly utilize employer owned computers both within and outside the conventional work environment to engage with social media. Moreover employees often bring their private electronic gadgets to work for the personal use as well as for the company work. Employees increasingly install social apps like Facebook, Watsapp, Instagram not only on their personal gadgets but also on company's gadgets to get in touch with external world.

4. Objective of the Study

1. To explore the recent trends in employee monitoring,
2. To analyse the reasons for employee surveillance,
3. To analyse the concerns of employee privacy with respect to social media usage, and
4. To examine the ethical and legal aspects related to employee monitoring in Indian context.

5. Employee Monitoring or Invasion of Employee Privacy

From the theories of Taylor to McGregor and Elton Mayo, it can be inferred that there is a consistent need on the part of employers to figure out how to oversee humans at work. There is a continuous need to manage and motivate employees at work. Though times have changed but one thing has remained consistent. Employers always want to be ensured that everybody is doing the work at the pace and carrying out the work as per the expressed standard. Technological advancements come to the aid of employers in the pursuit of this endeavor thereby making them monitor the employees electronically. But sometimes this monitoring leads to emergence of issues concerning employee privacy majorly related to data privacy and surveillance. Employee monitoring takes two basic forms - Covert surveillance means intentionally monitoring employees in confidential way ie without them being aware of the same. Secret monitoring is very not easy for a manager to legitimize, and must only be utilized in extraordinary circumstances.

Overt observation happens when managers surveil workforce, with the employees informed of this act.

5.1 "Why" of Employee Monitoring

Employers have logical thought processes for electronically monitoring their employees' conduct, as they are exposed to various risks like:

1. *Leakage of Confidential or Other Non-Public Information:* Through discussion boards or while networking with professionals such disclosure can include:
   - Highly confidential information that damages the organization's competitive status,
   - Product or other related information that may contradict with the organization's official communications, and
   - Organisation's proprietary information or trade secrets.
2. *Hazard to Company Computer Systems, Network or Data:* Utilizing an organization's PC, or cell phone to engage in online networking, with dangers of introducing conceivable pernicious programming or other harmful applications, particularly for web-based social networking that includes downloading malicious files.
3. *Inappropriate use of company's resources:*
   - Using a company computer or smart-phone to engage in social media, leading to excessive speed utilization or visiting improper websites etc.,
   - Without consent using the company title, symbol, trademarks, copyrighted data or other intellectual property in blogs or other social networking platforms that can encroach on the company's rights to and control over these assets, and
   - Engaging in social networking through corporate email account which indicates his employment relationship with the company.
4. *Inappropriate use of work time:* To discourage non-work related web activities during work hours
5. Investigate and anticipate the illegal unfair badgering of individual employees.
6. To get hold of electronic conversations or records may be the subject matter of creating legal liabilities or corporate record keeping policies.
7. Protecting client data and other important information from being leaked.

5.2 Employee Monitoring Strategies

Employers these days use various techniques to keep a close eye on the employees. Technological advancements have made their jobs easy. The most common strategies by which employers conduct employee surveillance:

Direct observation: Sometimes employers hire people to oversee the employees at work without them having knowledge about them same.

Telephone tapping: Recording the telephone conversations on office phones is one of the most common methods employed by employers to keep a watch on the employees.

Computer: Computer programs like screen recording software's are increasingly used by the employers that provide them with an access to employees' computer screens, hard drives and screen keystrokes to assess efficiency. Through keystroke monitoring, employers can see the details of every key pressed by the employee on a particular day.

Mobile: Conversations made by employees on smart phones, laptops etc provided by the employers can be monitored by the employers. As these gadgets are owned by the employer, it's legally permissible in most of the cases.

Email monitoring: Employers monitor conversations made through company's official email account and sometimes private emails too if they are made through company's computer.

Video surveillience: CCTV cameras are installed by the employer within the office premises that capture the video recordings of various activities in which employee indulges into during his/her working hours.

Geolocation: Employers increasingly use GPS technology to detect the location of the employees through installing devices in the company owned vehicles.

Photo copying machine and fax memory is reviewed by the employer to find out which type of documents is photocopied by the employees.

5.3 Rise of Wearbles

With the proliferation of technology, more and more companies are urging their employees to use wearable gadgets in the name of employee wellness initiatives. In 2013, as many as 2,000 firms across the globe offered their workforce fitness trackers. This number rose to around 10,000 by 2014 seeing the rising trend thereafter. According to some analysts by the end of year 2018, as many as 2 million employees will be mandated to put on health-and-fitness trackers as a part of their service contract.

The use of wearable gadgets raises privacy concerns for the employees as these gadgets record the personal data of an individual which may be used by the employer for monitoring the employees digitally even after the working hours. For example, the employer can easily track employees' location and heart beat even after work hours which can be truly irritating to an employee. Moreover, there is a potential risk of employees' personal and sensitive data getting hacked as it is store at multiple destinations ie with employer or third parties.

5.4 Corporate Insights

With the rapid technological breakthroughs corporate are able to monitor almost all the activities of their employees. A Swedish startup Epicenter embeds microchips in its employees' bodies that works as swipe cards for them for various tasks like open entryways, work with printers, or purchase snacks by simply waving the hands. A tracking gadget named "OccupEye" has been introduced by British multinational bank to oversee how often employees are at their work stations.

Amazon monitors its employees utilizing GPS tags while they are inside the warehouse. If at all by chance, any employee is found to be breaking any of the organization's rules, for example, conversing with fellow mates or early departure from work, he could be fired if the frequency of breaking the rules goes beyond established limits.

Deloitte uses a device called 'Humanyze' employee badge that examines employees' tone of voice, speed with which he moves, intensity of his interaction with others, sleeping behavior etc.

6. Next Wave of Monitoring – Social Networking Sites

6.1 Social Media Landscape

To effectively appraise the implications of social media for corporate it's vital to understand its various uses. As indicated by Wikipedia, web-based social networking is extensively used for:

- Correspondence, for example, micro-blogging, web journals, blogs, and occasions,
- Collaborated efforts, as wikis, social news and bookmarking/ tagging,
- Sight and sound, including video, photography, music/sound sharing and introduction sharing and live casting, and
- Amusement, for instance, media stages, virtual universes and diversion sharing.

Social media plays an important role these days in hiring decisions, creating strong employer brand and to communicating with clients. As per a survey by CareerBuilder (2016), as many as 70% of the employers were reported using social media for screening of the candidates. The fact that as many as 54% employers accepted to have not hired the candidates on the basis of content posted by them on social media shows the importance that modern day employers attach to the digital footprints of the candidates. 47% of the small to midsized business organizations planned to extend their employer brand using social media as per estimates of Linkedin Survey 2016, highlighting the growing preference of social media amongst corporate for hiring purposes. Last but not the least; companies are increasingly leveraging social platforms to make a variety of communications with their clients through press releases, promoting other stuff, for handling client complaints etc.

The popularity of social media is not only restricted to the employers but the employees also use social media extensively for a variety of tasks. Utilizing online networking has a prompt impact as larger audience in general can be made aware about a situation or event quickly after it has emerged or occurred. This can prompt undesirable reputation and consequences for a business when such post is directly related to an organization.

Employers may screen employees' activities on social media platforms by asking them to share their usernames and passwords for their personal accounts. A few companies have social media policy that permits them to take employees to task for posting certain data/ content on social media platforms.

According to the survey by CareerBuilder (2016), 28% of the employers surveyed have accepted to have reprimanded or fired their employees for engaging in activities like checking Whatsapp or Facebook, online shopping etc during work hours. 18% of the employers have accepted to have pink-slipped their employees for posting inappropriate content on social media.

As per the findings of 2014 global survey, by Proskauer as many as 70% of the employers reported to have penalized the employees for misusing social media. The survey further highlighted that organizations are increasingly taking precautions to secure themselves against particular hazards connected with abuse of social media, For example-

- Abuse from claiming secret data (80%),
- Misrepresentation of the facts and figures of the company (71%),
- Belittling comments about the company or its staff (64%), and
- Badgering (64%).

7. Eternal Ethical Dilemma: Should Employee have the Right to Privacy?

As the trend for social media monitoring by employers is gaining momentum, employees and groups advocating privacy are raising their concerns about ethical dimensions of invasion of employee privacy.

Ethical frameworks can by and large be divided into two types: deontological and teleological morals. As indicated[16] consequentialists (teleological) are moral scholars who advocated that an action can be said to be morally right only by judging its consequence. If the outcomes are great, that act is right else not.

Going by this theory, Social media surveillance of employees private accounts by the employer can be said to be morally correct as such surveillance will help them to achieve good results for the business i e keeping the company's reputation and integrity safe and intact.

However, analysing the same from the employee's perspective, the outcome of such surveillance may not be always great for the employees. As already discussed that individuals use social media for expressing themselves freely which also includes expression of dissatisfaction, venting out anger and frustration sometimes against the employers as well, this kind of monitoring can potentially invite a disciplinary action against them.

Deontology is referred to as obligation based ethics. It suggests that actions are more important than consequences. It evaluates the motives or intentions behind any act. It preaches about continually acting in good faith and stays committed to the Golden Rule i.e. to treat others the way you need to be treated by others.

7.1 According to the Famous Law of Karma (Action) Stated in Bhagavad Gita, all the Actions must be Performed without any Attachment to the Consequences

Going by this theory, social media surveillance of employees private social accounts by the employer can be said to be morally correct since it is employer's duty to observe the practices which are in the best interest of the business irrespective of its good or bad consequences on the employees.

However the same act can be seen as ethically wrong from the perspective of employee as this act of invading the privacy of an individual means restricting their basic human right of freedom of expression. This very act is seen as unethical irrespective of the consequences it may have for the employees or the organization.

8. Legal Dimensions of Employee Privacy

There is no denial to the fact that employees increasingly access social media inside and outside the workplace. On the other hand, employers concern regarding the social media usage by the employees also seems genuine. Generally the employer can view the content posted by the employee on social media which is visible to public. However there are certain state laws which limit the employer's ability to have a close eye on the employee's social media activity. In UK, Federal Stored Communications Act restricts the employers to access employee's non public Facebook posts without employee's authorization.

Also laws in various states restrict the right of the employer to ask for the username and password of employee's private social media accounts. In some countries like New Mexico, law prohibits the employer from requesting an employee for extending various social media considerations like – adding the employer to the contact or friend list on social platforms; requiring employee to change the privacy settings of his account so that employer can have an open access to the content being posted; asking for any information that would help them access employee's private social media account.

Indian constitution does not have any provision relating right to privacy explicitly however right to privacy has been considered as subset of fundamental right to life and personal liberty by honorable Supreme Court of India under Article 21. Also the scope of exercising this right has been restricted to any government action. Violations of such rights by any non government body may be tried with under the principles of torts.

The only law that has endeavored to address the issue of data security under Indian Constitution is The Information Technology Act, 2000 ('IT Act'). Sensitive Personal Data on Information (SPDI) is safeguarded under Section 43(A) and personal information is protected from illegal revelation in breach of contract under Section 72A of the act. The act directs the entities engaged in collecting,storing or dealing with SPDI to comply with certain rules as laid down under this act. .

8.1 Compliances Related to SPDI

Different parameters and compliances have been laid down under IT Act for the employers to follow while handling employee Sensitive personal data.

- The act calls for collecting SPDI only in case there is a requirement to collect such data for legal and indispensable purposes,
- Specific written approval (which also includes consent via electronic modes) must be obtained from the employees pre-

ceding collection of the SPDI. The workforce must be made aware of necessity of the collection of sensitive personal data, about the parties who would have access to this data and also the specific details of the items of SPDI being collected. They must also be informed about the fact if the data would be further transferred to any other parties,

- Employees must also be provided with an opt-out option,
- IT Act directs employer to have a well-documented privacy policy that must also be displayed on company's website,
- The employees must be allowed retrieve the information and be permitted to amend and make necessary updating in the information,
- As per the provisions of the act, the company can retain employee's sensitive personal information only up to the time its lawfully required,
- Employee's permission must be obtained prior to disclosing his SPDI to anyone, and
- The employers must establish adequate security procedures to ensure protection of SPDI.

The act clearly states that failure or negligence on the part of the employer to comply with any provisions of the act would make employee entitled to receive compensation from him.

9. The Way Ahead

It is clear that with the benefits associated with utilizing social media in the working environment there is a potential risk that may invite employee lawsuit and a bunch of other legal issues. Since the social media is used universally and represents a trend not likely to fade way in near future, it is judicious for employers to be apprised of and get ready for these potential risks. A few recommendations for managers to dodge these dangers include:

- Companies must design a clear cut social media policy stating what all is allowed and what all isn't allowed. Directives in policies should neither be overly vague nor too restrictive. Considering the complexity of legal matters it is suggested to avail the services of legal experts while formulating such policies.
- Generally companies may disallow the revelation or utilization of confidential information, exchange of insider facts and client information, but such restrictions must be tailor -made so as to disallow the revelation of proprietary information and the managers must be able to illustrate that they have taken steps to protect the privacy of such critically sensitive information.
- Employees must be educated and made aware about the possible disciplinary actions in case of any misuse of social media by them.
- Employees must be clearly communicated that employer has the right to screen their communications made through the company's computer and communication frameworks. Also they must be strictly advised to not to use personal gadgets for accessing social media during the working hours.
- For any articulations or comments posted on social platforms that is either in the organisation's name or could sensibly be credited to the company, the employees may be asked to state expressly that they are not posted on behalf of the company except incase of promotion of company's products or services .
- Managers must be trained for managing such social media issues which may emerge on the part of employees as also the issues pertaining to employees' social media privacy.
- The employees must be informed at the time of leaving the organization that use of company's computer network and its data is disallowed.
- Company-issued tablets, smart-phones, laptops etc. must be taken back by the managers well in time from the employees who are leaving and reviewed to assess whether certain company data has been misused.
- All the employees must be asked to give in writing that they do not expect any privacy with respect to any information that is exchanged through company owned computers and other communication frameworks.
- The companies must continuously update their social media policy in compliance with current laws.

To conclude, 'millennial social media addiction' is the trend that is here to stay for long. With more millenials joining the workforce, the corporate are under constant threat to be on the receiving end of the negative consequences of their employee posting sensitive information on social platforms. The notion of privacy is fast changing. The intrusions that were unacceptable in the past have now started gaining acceptance within employee fraternity. The line between acceptable and unacceptable intrusion is getting hazy swiftly.

Given the pace of technological advancements it is feared that in the name of safeguarding company's security and employee efficiency, the employers may justify tracking employee brainwaves and other biometric measures in the time to come.

Collecting extremely sensitive information like passwords by employers is wrong on moral grounds too and can lead to restricting the right to freedom of expression.

On the legal side, despite the regulations is decently in nascent stage in India, employee social networking privacy concerns would assume center stage in the years to come. Thus it is necessary for the employers to estimate the gravity of these concerns and prepare themselves to comply with the new legislations and at the same time protecting their own interests. Enactment of right to privacy (Privacy Bill) has already been initiated by

the government. Time will tell whether the Privacy Bill goes through. Meanwhile employers ought to prepare themselves for compliance with the rules. Law makers and the corporate must see to it that in the wake of protecting intellectual property of the companies individual's basic right to freedom must not get destroyed.

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Annexure-I

Blurred Work - Life Frontiers: A Paradigm Shift in Employee Social Networking Privacy

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Supply Chain Management of Indian Agriculture Industry: An Exploratory Study

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Abstract

Indian Agriculture/Agro Industry (IAI) is an integral part of Indian society and economy. Approximately half of the total population relies on this industry as a principle source of income and it contributes around 14% of India's GDP. Indian food business has increased to US$ 250 billion in 2015 as compared to US$ 220 billion in the year 2009 and expected to grow further rapidly in the next ten years. Indian Agriculture is a world leader in terms of production of many product categories As a result, on one hand engagement of huge population, rising demand, farm mechanization, increase in global markets, etc., offer huge potential for this industry. On the other hand, it faces many severe problems. Producers of agro products are getting merely 30–35 per cent of the market price in most of the cases due to lack of supply chain practices. Annual wastages of agricultural output are also very high which in monetary term sums up to around Rs 90,000 Crore. This wastage is mainly due to inadequate supply chain infrastructure. The objective of this paper is to highlight the present scenario of Indian Agricultural Industry in terms of prospects and explores various supply chain related issues of this industry.

Keywords: Agro Industry, Indian Agriculture, Real-Time Information, Supply Chain Management, Supply Chain Network

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Editorial Board Excerpt: *Initially at the Time of Submission (ToS) submitted paper had a 37% plagiarism and after rectification it was reduced to 10%, which is an accepted percentage for publication. The editorial board is of an observation that paper had a successive close watch by the blind reviewer's which at a later stages had been rectified and amended by an authors (nitu and anurag) in various phases as and when required to do so. The reviewer's had in a preliminary stages remark with minor revision with a following statement which at a short span restructured by an author. The comments related to this manuscript are tremendously noticeable related to Supply Chain Management both subject-wise and research wise by the reviewers during evaluation and further at blind review process too. All the comments had been shared at a variety of dates by the authors' in due course of time and same had been integrated by the author in calculation. By and large all the editorial and reviewer's comments had been incorporated in a paper at the end and further the manuscript had been earmarked and decided under **"Case Based study"** category as its highlights and emphasize the work in relation to use of Supply Chain In Indian agriculture Industry which is an exploratory study.*

1. Introduction

In India, Agriculture is the basic unit of Indian society and around 600,000 villages consisting of roughly 65% of the total population is engaged in the agriculture making it the backbone of Indian economy[4]. Also Agriculture sector in India is that largest sector in which more than 110 million farmers are engaged. This sector has significant contribution in the GDP and export earnings too whereby its data amounts to 26% and 1/6th respectively[21]. Presently, India is following China, the largest food producer of the world and becoming a leading producer of many product categories worldwide.

Indian agriculture has immense possibilities of growth. Implicitically, India can become the food basket of the world. In spite of being a major contributor in the economy, Indian agriculture is the most mishandled, highly unorganized and largely fragmented sector. It has been suffering from poor supply chain management from the time immortal. The term Supply chain can be defined as a process where all members of the value chain i.e., the customers, vendors and all third party logistics service providers are interrelated and integrated in such a way that the goods and the information are made available at the most suitable time. This information travels smoothly from the inception point to the consumption point and finally ensures a superior value to all the

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network members[1]. In Indian agriculture there is too long supply chain network due to the presence of many intermediaries who create long gap between the consumers and the farmers (producers). As a result, the producers (farmers) are unaware about demand and receive the distorted information, being created at the consumption side (known as Bullwhip Effect) thus depriving them of real time information. In principle, availability of real-time information is the key to success of any supply chain model. Further, existence of a substantial number of channel members pick-up the major portion of the pie. As a result, farmers get very less price; there is price escalation at every links thus ruining the whole supply chain. Indian agro and foods industry is also loss and wastage prone. The study has shown that around 14.8%, which further amounts to Rs 90,000 crore is wasted annually by passing through each and every supply chain levels and finally the retail level. Indian Agriculture is also cursed with problems like low productivity, huge post-harvest losses, and excessive exploitation of farmers by middlemen, unreasonably low price of agro products received by farmers, too much post-harvest wastage, etc. These problems have an adverse effect on the attractiveness of the industry.

This paper identifies some of the above problems of the Indian Agriculture which are primarily due to absence of adequate supply chain infrastructure, non-availability of real-time information to farmers about market price of their agro products, existence of too long supply chain network, poor logistics infrastructure etc.

2. Literature Review

Indian Brand Equity Foundations (IBEF, 2017) in its report advocated the importance of agriculture in Indian economy[18]. It states that over 58% of the rural households depend on agriculture as the principle means of livelihood". Mehta et al., states that "agriculture along with its allied industries like fisheries and forestry is one of the largest contributors to the Gross Domestic Product (GDP) which accounts for nearly 14% of it and approximately 11% of India's export"[22]. It is also an important source of raw materials to number of industries. According to Singh India is the eighth biggest exporters of agricultural products along with United States and the European Union[31]. According to the report of The Central Statistics Office (CSO), "Agriculture along with its allied sectors contributes significantly to the GDP of the country. For example forestry and fisheries have large contributions which were 15.35 per cent of the Gross Value Added (GVA) during 2015–16 at 2011–12 prices". Singh further added that in the year 2012 annual percentage increase in India's export was 22 per cent and it accounted for 2.6 per cent of total world agricultural export[31]. Currently, the production of food grains in India is about 245 million tons which is going to rise by 25% i.e. 307 million tons by the year 2020.

The Economic Times Intelligence Group (ETIG) in its study of overall scenario of Indian Agriculture revealed several facts according to its report; India has the 2nd largest arable land (161 million hectares) and irrigated land (55 million hectares) in the world[11]. It has been reported as the largest producers of wheat (72 million tonnes) in the world and contributing around 15% of global wheat production; second largest producer of pulses with the production of 15 million tons. This amounts for 21% of global pulse production. India also earned the pride of becoming the largest producer of milk in the world by producing 96 million tonnes, which contributes to the 17% of global milk production; mango (around 10 million tonnes per annum) from an area of 16 lakh hectares and now India is among the largest growing and exporter of spices in the world.

The list does not end here, India has become the 2nd largest producer of tea which further accounts for nearly 28% of the global tea production. It has also registered its name among the largest producer of rice by contributing up to 22% of global rice production. The sugarcane produced in India also accounts for a large portion of global production which is up to 21%.

According to the FOBICS, as derived from IBEF 2013, "The Indian food industry which presently stands at close to US$ 135 billion with a CAGR of 10%, is expected to touch US$ 200 billion by 2015"[14]. It includes fruits and vegetables, fisheries, milk and milk products, meats and poultry, alcoholic beverages and soft drinks apart from basic foods like, wheat, rice, maize, etc. A rapid growth in Health food and health food supplement is another growing sector having high potential due to the rise in health–conscious population.

This study also identified the major drawbacks of Indian agriculture. This identifies that inspite of being one of the major food producers of the world, India has less than 1.5% of contribution in the international trade to its credit. According to Department of Land Resources of Govt of India, (2013), the agricultural productivity is currently half of what it is in many other countries[26]. According to Agrawal, "The foremost issue for the Indian Agriculture is the losses and wastage[2]. As much as 10 to 20 per cent is lost by the time the agro products reach the retail level primarily due to poor supply chain infrastructure. There is a loss of 14.8% on an average amounting to Rs 87, 800 crore a year as exhibited in Table 1".

ETIG[11] as well as NMCC[9] detailed out in their reports that Indian agriculture is suffering from multifold problems of inefficient operations. Approximately, 20% of the total food produced is wasted here (www.etfoodprocessing.com). According to a study conducted in 2015 by CIPHET, a Government agency, it has been reported that production of food in India is high along with its wastage and upto to 67 million tonnes of food is wasted every year in India. This huge wastage is equal to the national output of Britain and enough to feed any large state of India for the whole year[16]. Agrawal[1], identifies some of the important reasons for this huge

Table 1. Wastage Levels of Indian Agro and Food Products

Commodity	Present Level of Production			Post-harvest Losses		
	Quantity (mn Ton)	Average Price (Rs/Ton)	Value (Rs. Crores)	%	Quantity (mn Ton)	Value (Rs. Crores)
Durables (cereals, pulses and oil seeds	230	10000	230000	10	23	23000
Semi-perishables (potato, onion, sweet potato, etc)	40	3000	12000	15	6	1800
Perishables (fruits, milk, fish, eggs, etc)	210	15000	315000	20	42	63000
Total	**480**	**11604**	**557000**	**14.8**	**71**	**87800**

Source: Agrawal, 2005

Table 2. Margin share between farmer and supply chain network members

Supply Chain Network Members	Margin (percent share of final price)
Farmer	35
Village Commission Agent	15
District Commission Agent	10
Wholesaler	10
Sub-wholesaler	10
Retailer	20
Consumer	Not Applicable

Source: Agrawal, 2010[2]

loss. The inefficiency in handling the produce, inadequate storage facility, poor logistics and transportations, pest infestations etc., are major areas of concern among policy makers. Situation is worse with perishable products as they are more prone to decay and rotting. The danger of pest infestation, unfavorable weather along with the absence of modern cold storage facilities add further to these wastages[16]. Identified that one million tonnes of onions get perished on the way to markets as well as 2.2 million tones of tomatoes. In the same way approx. 5 million eggs crack or turns bad due to improper storage facilities. Even marginal reductions in these losses are bound to improve the income level of the farmers. Deloitte, in its study found that Indian agro industry is suffering from many inadequacies such as inefficient storage facilities, poor power supply and lack of sufficient cold storage facilities as a result of which almost 40% of total fruits and vegetables are wasted on their way to the markets. Wastage level has further increased to around 30–35 per cent of the total production which in monetary terms comes to around Rs 85,000 Crores.

The Economic Times Intelligence Group[11] (ETIG) report further identified that the supply chain network of Indian Agriculture Industry is too long comprising at least 5–6 members in between farmer and consumers namely, village consolidator and/or commission agent, district commission agent/trader, wholesaler, sub-wholesaler, and finally the retailer. Dasgupta argued that this long chain of intermediaries adds substantial amount of cost at every level, thereby leading to high prices at the consumer level[7]. Moreover this also indulges few middlemen in the act of hoarding and creating artificial supply deficiency in the market. Agarwal explained that at one end consumers have to pay high prices while at the other end, farmers get insignificant prices for their produce[1]. Consumers in India spend 3–4 times of the farmer's prices in comparison to the developed countries, where consumers just spend one and a half to two times the farmer's actual price. In this way, major portion of the agro and food products prices paid by Indian consumers is distributed among the channel members in between. Dasgupta further identified that wholesalers, retail traders and food processing companies are sometimes debarred to buy output directly from the farmers[7]. The brokers in between delay payments to farmers for weeks, the middleman at mandi charge commission from both the sellers (farmer) and the buyer (the urban retailer/food processor). All these finally brings hike in prices at the final consumer level. Generally, farmers get around 35 per cent of the market price of their produce in most of the cases.

Distribution of margin among supply chain network members is depicted in Table 2 (ETIG)[11].

The worst part is that food products actually cost more in India, which has an abundance of food, than in other economies where food is a scarcity. The existence of a sizeable number of supply chain network members, intermediaries, there is major deterioration of quality, increase in wastage level due to poor handling and farmers get only a very small portion of market price of their products. It has been found that most of the price increment happens in the hands of this large number of intermediaries[2]. Supply chain inefficiency is common to Indian Agriculture. These inefficiencies are common at every stage from production to distribution to marketing to infrastructural development. Moreover, there is absence of constructive connections between agricultural research, extension programs, development of crop, real time market information etc. There is also lack of constructive framework in the overall agricultural value chain. One cannot find any sustainable model for agricultural credit and finance which is again important for growth and development of the industry.

In the light of given structural lag and the system complexities, there is a need to develop commercialized agriculture equipped with high technical knowhow with availability of effective credit facilities and market interferences. This position can be achieved big corporate houses along with other successful agri-business houses come forward to invest in this sector. This is therefore believed that a demand driven agriculture developmental strategy is the need of the hour. Such strategy has the potential to utilize the positive aspect of supply chain thereby increasing farm incomes. There is a great opportunity for farmers to capture the increasing demand and increase their income level. Vertically integrated farms and markets have lots of potential to grow.

In a study conducted, by Fa champs et al., it was reported that "that little information circulates about unobservable crop characteristics[12]. Little information was found to be traded on varieties, planting time, pesticide and fertilizer use. Growers do receive a price premium for observable characteristics of the crop such as drying, grading and packing. These attributes serve to reduce transactions costs to traders, consequently they are only valued by traders and do not translate into unit price premium further down the value chain. Vertical integration was not found in this research group in India except for small isolated pockets".

There is a wide gap in terms of availability of information, knowledge, working relationships, technological development for farm mechanization, characteristics of market, etc between the farmers and the markets. These gaps have a lot of negative impact on farmers as well as consumers and the most benefitted group of people is only middlemen (supply chain network members) between farmers and consumers. Due to the presence of many network members, there is further distortion of available information. Many researchers have established that the key to success of many supply chain is the smart use of information[17]. It is also established that Information Technology (IT) has the potential to link farmers and consumers directly.

The success of modern agriculture depends upon real time information flow and knowledge sharing. Each member of the supply chain largely depends upon timely and accurate information for various decisions[29]. That is why; organizations like Indian Council of Agriculture Research (ICAR), National Informatics Centre (NIC) in India and world organization like FAO (Food and Agriculture Organization) have been striving to provide quality information services to support the agriculture sector for speed and reliability, better communication; removing geographical boundaries; social networking; and enhanced cheaper accessibility as compared to print media.

3. Research Methodology

Research methodology used for this study is a judicious blend of an extensive literature survey for identification of various key elements of supply chain related issues and challenges of Indian agro industry and an in depth experience survey of 35 qualitative respondents (farmers, and local agents, brokers, wholesaler and retailers of food grain market of Varanasi) for collection of qualitative information for mapping of fragmented market scenarios; followed by validation and fine tuning of overall picture of IAI's supply chain system and practice.

3.1 Supply Chain Issues and Challenges in Indian Agro Industry

According to Agarwal, "supply chain management can be defined as the process of sourcing and procurement and conversion of products alon with all logistics management activities[2]. The essence of supply chain lies in the coordination and association with various channel partners i.e., suppliers, intermediaries, third party service providers and also the consumers. These channel partners catalyze the smooth flow of goods services along with related information throughout the network. In essence, supply chain management integrates supply and demand management within and across firms and all key business processes from the end user for maximization of value to all network members by elimination of duplication or repetition of similar work, elimination of non-value adding network members, prevention wastages and damages, availability of real-time information, etc." With all these advantages supply chain management can be a powerful tool to address the problems faced by Indian agro industry. Through supply chains, farmers (producers) have real time access of marketing information and knowledge. They make use of this information and knowledge for improving their value-added services. The supply chain management benefits the organization

by reducing the losses and costs, increasing the sales, ensuring desirable product quality and safety. Supply Chain also encourages the dissemination of technology (which is very much desired in Indian agriculture), capital and knowledge among the various channel members. Development of supply chain not only benefits supply chain participants but also brings social, economical and sustainable environmental development by generating more employment opportunities, value addition and a significant decline in the product losses. These advantages when used in agriculture resolve most of the inherent problems. While analyzing the scenario of Indian agriculture, it is apparent that prevailing supply chain systems and practices are largely conventional in nature resulting into unprofessional and traditional mind-sets.

Developing and having a well-articulated supply chains in this industry is complex process and challenge that requires adequate information and technical expertise for building chains and ensuring hurdle free communication and commitment from all the supply chain partners. This needs a proper framework to be built.

On the basis of careful analysis of Indian Agro industry, it is crystal clear that there is significant amount of losses and wastages resulting into deterioration of value. In the supply chain perspectives, such a pathetic and alarming scenario is prevailing due to following reasons:

3.2 Poor Dissemination of Information and Knowledge

The success of any supply chain system requires knowledge and real-time dissemination of all relevant information throughout the chain. To build a successful competitive position the supply chain strategy must be collectively formulated by all the channel partners. It is crucial for every channel partner to clearly recognize the consumers along with the new competitive environment prevailing in the agriculture sector. In other words, there must be full visibility of information among participating members of the supply chain. The important information includes knowledge about demand, marketing, logistics, quality, information flow, specific role of value addition of each member, technology, present stock position, cash flow, etc which must be available on real-time basis for the smooth functioning of chains as a whole.

Above features when applied to Indian agriculture gives a very different picture. Farmers have very little or no knowledge about various aspects of the supply chain. ETIG as well as NMCC[9] identified that that Indian agriculture is ill fated by large no. of problems[11]. Its supply chain is traditional and remained unchanged which hinder its efficient operation. Unorganized markets continue to dominate the sector. Only 2% of the total food market in India is organized. The reasons behind this statistics are small land holdings, poor financial position and illiteracy of the farmers forcing desperate selling, lack of knowledge about market price and market accessibility, lack of bargaining power, absence of forecasting feedback to farmers to adjust crop mix to maximize benefit, etc. Further, supply chain system of Indian agriculture is obsessed with various obstacles like presence of large no. of marginal/small farmers, absence of economies of scale, disintegrated supply chains, unorganized and low level of value addition activities, deficient infrastructure of marketing of agricultural products.etc.

Sajjad[29] clearly states that Indian agriculture can be grown through the introduction of efficient proper supply chain infrastructure. This means that all farm produce should be made available to the consumers at right place, time and quantity along with right price. This is only possible when the demands will be properly forecasted and determined. If the farmer fails to predict proper demand it leads to fluctuation of demand between supply chain stages. This fluctuation further incorporates another dangerous phenomenon known as - Bullwhip Effect, in which artificial and unreal demand is shown thereby misguiding all the stake holders involved.

During the course of experience survey, it has been found that farmers have been restricted deliberately from dissemination of basic knowledge about marketing, logistics and new technologies. They have been prevented from active involvement while responding to changing market conditions in most of the cases. Coupling of Information Technology with modern farming techniques results in multiple benefits.

For example, there are evidences where farmers have been empowered with the help of extensive use of information technology that in turn, addressed many supply chain related problems of farmers. For example, after the big success of E-Chaupal, International Business Division of Indian Tobacco Company (ITC), runs Aqua-Chaupal in Andhra Pradesh for Shrimp farmers. It is a web based platform assisting shrimp farmers of Andhra Pradesh with real time information on weather and modern scientific farming practices. It also equips farmers with the knowledge of prevailing market prices, methods to improve productivity and reduce transaction costs at their doorsteps. This model facilitating farmers in many ways including testing quality seeds and providing them to farmers, sharing real time information on purchase price of ITC as well as other companies, sorting of quality products for export purposes, and filling of information Gap between the farmers and the markets. ITC also runs Soya-Chaupal at Madhya Pradesh, Wheat-Chaupal at Uttar Pradesh and coffee- Chaupal at Karnataka.

Ministry of Agriculture, Government of India runs Kisan Call Centres (KCC) through a toll free number across the country for providing information to the queries of farmers in regional language. It also links farmers and scientists for solutions to their specific problems relating to agricultural and related field problems such as fisheries, veterinary, dairy etc.

In the literature survey, it has been found that losses and wastage level in Indian agriculture is excessively high and around Rs 85,000 Crores mainly due to poor logistics infrastructure more specifically material handling, warehousing, and transport facilities. The part of the supply chain management which helps in the effective and efficient forward and backward flow of goods/services along with its proper storage activities is known as Logistics Management. Logistics is also responsible for the flow of real time information between the origin point to the consumption point ensuring value transfers to the ultimate consumers. Its activities comprises of inbound and outbound transportation, management of fleet, handling of materials, warehousing, fulfillment of orders, designing logistics network, management of inventory, planning of supply/demand, and also to manage (IPL) Third Party Logistics Services Providers.

Logistics in India has to face many challenges due to large size, uneven geographical conditions, large population, absence of essential infrastructure, frequent natural calamities etc. There is absence of professional communities which can bring integrated systems approach to logistics management. Few giant public sector organisations like the Central Warehousing Corporation (CWC) and Food Corporation of India (FCI) have been established by government to provide total logistics solutions to improve the performance of agro supply chain but they are suffering from their own system inefficiencies.. According to, "the final cost of procuring wheat and rice by FCI rising from Rs 1,411.9 and Rs 2,039 per quintal (2015–16 estimates) to Rs 2,181.7 and Rs 3,038.9, respectively, Grains which are to be distributed through (PDS) Public Distribution System are diverted[3]. As the grains move from govt godowns to the fair price shops several leakages arise in between. As a result, cheap grain is diverted into the open market and sold at higher prices by a group of mafia comprising state officials, transporters and ration shop owners.

The current system of grain management is another source of inefficiency of these godowns. Critics argue that by holding on to grain well above the prescribed buffer stock limits, FCI incurs significant holding costs. Further, because of poor storage facilities, these stocks often end up rotting". Thus, we see that there is a need to pay careful attention towards the areas of logistics and supply chain management in Indian agro industry. This area is being overlooked from long time.

Expenditure on logistics in India is very low as compared to developed countries. It merely spends 3% of its GDP in logistics, as compared to an average of 10 % in other developed countries. Over 50 per cent of cost in India comprises of Transportation and inventory. With the introduction of better Supply Chain Management, the Logistics costs have decreased worldwide from 12.2% to 11.7%[2].

It has depicted earlier that there is a huge amount of losses in terms of wastages of value. These losses are due to availability of poor logistics infrastructure and more specifically, improper handling, lack of transportation and storage infrastructure and multiple handling of agro products. Storage is the greatest problem in the Indian Agro Industries.

In early 2001, there were reports that farmers in Punjab dumped their crops near the warehouse and did not claim them at all. There are hurdles in transportation too- with fruits and vegetables travelling long distances from farm to mandi (marketplace) in open trucks and tractors, losing quality, weight, water and numbers along poor roads. Since, potato is a major crop in India, in 2000, India had 297 cold storages with storage capacity of 14 lakh tonnes of potato. 90 per cent of all cold storages were for potatoes. India produced up to 30 lakh tonnes of potatoes in 2001 which has increased upto 480.08 Lakh tones in the year 2014–15. In this regard the Agra Cold Storage Owners Association (ACSOA), has taken an appreciative step in increasing storage capacity of potatoes at Agra. It has the storing capacity of around 2.2 million tones. The district contributes to 7 per cent of the total cold storage capacity available in the country leaving Punjab, MP, Maharastra, and Karnataka much behind. Moreover this kind of storage infrastructure is not available across the agriculture dominated areas of the country.

The Bhabha Atomic Research Centre (BARC) in Mumbai has practiced irradiation techniques for many years. Irradiation of potatoes can reduce sprouting and spoilage down to 10 per cent. Thus, potatoes can be stored at 15 degrees Celsius, much higher than the 2 degrees Celsius that would otherwise be needed. That is a direct cost saving. Given that 92 per cent of all cold stores in India are for potatoes, the potential for savings just by this technique is enormous.

Some of the hurdles that create problems in the supply chain due to poor logistics infrastructure are

- Lack of storage facility at farm level reducing quality and quantity
- Lack of large-scale transport from farm to trader/mandi resulting into high cost of piecemeal transport
- Shortage of weighing scales, stocking space, manual cleaning and open air storage during most of processes reducing quality and quantity

3.3 Too Long Supply Chain Network Structure

While looking at the supply chain of Indian agriculture, it has been found that different actors are linked in the network to achieve effective and consumer-oriented flow of products. These actors include a good number of members like growers, pickers, packers, processors, storage and transport facilitators, marketers, distributors, wholesalers, and retailers. With so many stakeholders present in the overall chain there is a need to reanalyze the existing pattern of trade along with its peculiar environment of

Table 3. Supply chain members and their functions along with margin addition

Supply Chain Member	Function/Value Addition	Margin Added (%)
Farmer	Production	
Consolidator	Aggregation of produce of small farmers at village level	10–15
Commission Agent	Negotiation, selling to trader and demand-supply matching	10–15
Trader	Consolidation at district/mandi level	15–20
Commission Agent	Large scale demand-supply matching and arranges for sale to wholesalers in city	10–15
Wholesaler	Reselling to retailers	10–20
Retailer	Sells to consumers	20–30

Source: Agarwal, 2010[2]

product flow, exchange levels, forces affecting the operation of the supply chain such as governmental policies, etc. This reanalysis will help in identifying potential supply chain players and thus the whole system can be regenerated to increase the efficiency of overall supply chain. Success of a supply chain in terms of efficiency, flexibility, innovation, and responsiveness depends on a strong and integrated supply chain network structure based on the different aspects of the supply chains critical success factors.

Through experience survey, it has been identified that India is currently facing lack of logistics infrastructure resulting into more members (seven to eight) in the supply chain network structure by the time agro products reach consumers. Value addition is just in terms of logistics (movement or availability) which may be around 20 percent by network members from the farm gate while reaching in the hands of consumers but farmers (producers) get just about 25–35 per cent of the retail value of the foods as exhibited in Table 3.

Above Table clearly depicts that there are minimum seven members in between farmers who produce agro and food products and final consumer. From supply chain perspectives, such a long chain is resulting into value destroyers and not value-adding supply chain members in India. Neither farmers are getting a reasonable return nor consumers find real value in products in terms of freshness and price. In other basic foods, returns are as low as 25–35 per cent of the final price. In other words, while costs are inevitable and may not be possible to reduce beyond a certain limit, the margins added at each stage can and must be reduced. Furthermore, too long supply chain network structure results in inefficiency and poor market responses because Large number of intermediaries results in large hoarding, more mishandling, increased carrying and production costs and ultimately locking up of working capital. Moreover the long chain is also responsible for lack of coordination, collaboration and trust building which results into poor relationship among the channel members.

There are selective evidences farmers are getting much better price of their agro outputs supply chain network has less members. For example, Marico Industries in the year 2003 set up Marico Innovation Foundations (MIF) to build a long-term relationship with the copra farmers. Marico procures Copra directly from farmers through 8 organisational and 6 social sectors especially in south India. It gives training to the farmers on modern farm practices and further collects the produce through various collection centres established at convenient places for farmers. Along with assuring regular supply to Marico, these collection centres assure fair prices and buying guarantee to the farmers. Marico has also set up a copra portal where vendors and copra suppliers could bid/quote prices online. Approximately 5000 farmers have been benefitted by this endeavour of Marico. Marico is also associated with the Coconut Development Board. As a result of regular training provided to farmers, the vendors have now become more self-reliant and do not have to depend on brokers and middlemen for their dealings. Because of the real-time nature of the transactions, they settle their accounts on a daily basis and manage cash flow efficiently.

Another example is of Gujarat Cooperative Milk Marketing Federation (GCMMF), (which is popularly known as AMUL) has three tier system in which farmers are in direct contact with the company without any intermediary. This pattern is popularly known as Anand Pattern. In this pattern, AMUL forms a village cooperative society comprising of primary producers. This society is under the guidance of a Milk Supply Officer of Co-operative Dairy Union (district level cooperative which owns the processing plant). Any milk producer can become the member. He has just to pay nominal fees and must agree to sell milk only to the society in order to have smooth, steady collection. This further ensures regular marketing of milk and milk products along with achieving economies of scale. In this pattern of cooperative, the farmers with only 2–3 cows also sell directly to the cooperative society. The traditional middlemen (brokers,

consolidators, truckers, wholesalers, etc.) who are so potent in other agricultural products' market, are conspicuously absent in 'Amul Model' resulting into reduction in procurement cost, fair and superior price to milk farmers and quality of milk. As a result, farmers are paid up to 90 per cent of the market price of milk. According to the rate decided in the year 2015–16 farmers are paid Rs. 42.50 per litter for milk containing 7 per cent fat and 9 per cent Solids Not Liquids (SNL) (www.amul.com)

In order to leverage supply chain of Indian agriculture, it is essential to restructure the network by eliminating or disintermediating some of the members from the conventional system. For this purpose, farmers' cooperatives and contract farming should be encouraged by the Government. This adds:

- more value and better return for all stakeholders,
- Faster and better responses to new needs and opportunities
- Leveraging pooling of resources and expertise of all supply chain partners to gain more competitive strengths.

To reduce number of members from the supply chain network, government has already taken initiatives at national level in the recent past. National Agriculture Market (e-NAM) is a pan India unified electronic portal where farmers can directly sell their produce. It connects all the markets formed under Agriculture Produce Committee (APMC). Presently 585 markets are being connected to this portal.

Traditionally, farmers sold their products through the physical Mandis or Bazar Committees which were highly incompetent and levied a number of duties on their products. Under e-NAM, there is only one license for the each State and duty is levied only on one point. Prices are decided through electronic auction. It is now facilitating the conversion of the whole state to one market. The farmers are directly exposed to the markets and available prices. They can finalise the price and then sell their produce. This system is more transparent and has facilitated farmers get better price for their agro products[6].

4. Conclusions

Having enumerated the problems, issues and challenges faced by Indian agro and food industry with respect to supply chain management and possible solutions that can be adapted at both micro and macro levels, there is an increasing role of the private sector in basic foods, and sustained and determined government efforts for empowerment of farmer and relaxation of regulation-all will be vital, amongst other initiatives. Beyond these steps, an integrated approach to several aspects of the supply chain has to be taken by all stake holders as there is huge scope for supply chain optimization in Indian agro and food industry and so, organized logistics service industry (3PL) has a great opportunity. Indian food supply chain is too complicated for one single player, so the trend will be towards developing a network of specialized partners and putting together win-win solutions. One integrated flow of information must develop to produce what is required, to reduce costs mainly due to inventories not being visible throughout the chain and to assure demand by negotiation of long-term partnerships. The advantages of the supply chain management approach in Indian agriculture are numerous. It reduces the losses of products during transportation and storage. Supply Chain Management in agriculture increases the sales which further results into better returns to all stakeholders. It brings dissemination of technology and information about the flow of products, advanced techniques, capital and knowledge among the chain partners. In nutshell supply chain brings better control of product safety and quality.

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Annexure-I

SUPPLY CHAIN MANAGEMENT OF INDIAN AGRICULTURE INDUSTRY: AN EXPLORATORY STUDY

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Role of Big Data Analytics in Social Media Marketing of MICE Tourism

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Abstract

The purpose of this research paper is to provide a theoretical framework for understanding the concepts of Big Data Analytics and social media and their role in marketing of MICE tourism. The systematic review of literature done, contributes in exploring and enhancing the comprehension of various models and strategic alternatives affecting the utilization and adoption of social media marketing.

Keywords: Big Data, Marketing, MICE Tourism, Social Media

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1. Introduction

New advancements in technology and innovations in Information and Communication Technology (ICT), specifically in Social Media have a colossal impact on business practices; strategies and industry structure[1]. Social networks provide a system of community building, customized to the needs of its members with the intention of fortifying customer relations. Marketing through social media is particularly critical in Meetings, Incentives, Conventions and Exhibitions (MICE) tourism industry where potential customers make highly poignant and lavish purchases, which are in most likeliness to be unique occurrences that cannot be replicated in case of a service failure[2]. MICE tourism is seen as the future of business tourism[3]. Big data is considered to be a highly potent tool built so far, and is at the heart of smart revolution in the tourism industry, worldwide. It helps hotels and convention centers to better understand their target customers, optimize their processes and drive business performances using business insights[4].

The objective of this research paper is to provide a theoretical framework[5] into the unchartered territory of social media marketing of MICE tourism. The paper intends to provide, primarily a rich understanding of the key concepts and concerns regarding big data analytics[6], MICE tourism, and social media marketing. The research also highlights, through extensive review of literature, some prominent models and strategies that may be used to unlock the potential value of processing high volumes of fast moving and diverse data using Business Data Analytics (BDA) into meaningful insights to drive decision-making[7] for hotels and convention centers.

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2. Literature Review

2.1 Big Data Analytics

The Internet has experienced a continual evolution and progression, creating digital traces that can be gathered and administered to define systems useful to discuss both individual and group behaviour. Data with such enormous capacities is becoming a basic feature of our modern society. Moreover, the ability to scrutinize, connect and learn from this data is turning into a valuable component for organizations to compete and support growth, production and innovation in diverse fields[6]. Maturing and diversification of Internet technologies made it an important forum for organizations to communicate[8]. The upsurge of data from various digital sources like social networks and Internet has challenged marketers to convert them into actionable insights[9]. Big data is a recent occurrence that has surfaced as a part of our everyday lives. Shopping online, catching up with Facebook friends, steering web searches, swiping our cards, and reading articles referencing database searches, leads to tying a piece of classifying data, called big data[8].

Big Data, is defined comprehensively by[8] in their research paper as: "1. The proliferation of data, both structured and unstructured, as the result of exponential growth in capabilities of computer processing power, data storage capacity, the use of computers to mediate transactions and social interactions, and the density of sensors, all at a decreasing cost; and 2. The computer hardware and software infrastructure that has been created to quickly and accurately draw insights from large volumes of highly variable and often unstructured, data appearing at a voluminous arrival rate. This is accomplished through methods including, but not limited to distribute processing, in-memory data storage, job partitioning, parallel processing and sparse array management". Big Data Analytics or simply, BDA is the process of examining huge amounts of data in an effort to discover hidden patterns, unfamiliar correlations and other valuable information[10]. The Five V's model has been discussed by[5] to define BDA as "A holistic approach to manage, process and analyze the five V's data related dimensions i.e., Volume (huge quantity of data); Velocity (pace at which data flows); Variety (different types of data); Veracity (genuineness and accuracy of data); and Value (data's economic benefits) in order to create actionable insights for sustained value delivery, measuring performance and establishing competitive advantages". Further to this model[6] in their study have discussed a Nine V's model, where in addition to the earlier five V's, four additional dimensions are added. These are: Variability (changes over time); Visualization (making data interpretable); Validity (correct usage); and Volatility (retention policy of data), in order to understand the scope of big data analytics in a better way. This model is depicted in Figure 1.

Figure 1. Nine V's model of big data analytics[6].

2.2 MICE Tourism

Tourism has become one of the key players in international business and represents one of the important sources of income for both developed and developing countries[11]. Amongst the several forms of tourism that exist in the world, MICE segment of the tourism industry has shown the maximum growth potential. With a 54% market share globally, it has surpassed the traditional business trips segment. MICE Tourism is part of the tertiary sector of the economy, which brings together a diverse set of services. Many stakeholders are participants in this industry, and may be classified roughly under three major heads. The chief and the most vital one is the physical infrastructure (Hotels and Convention centers) which comprises of the venue where the actual meetings, conventions and exhibitions are held; next in line are the Organizers (Professional Convention Organizers) of the meetings and finally the Fringe subcontractors (Travel agencies, transportation, catering, etc.), who are responsible for various services that make the event efficacious[3]. The convention and exhibition market has experienced unmatched growth during the past 20 years[12]. Due to the large number of financial benefits of hosting conventions, many destinations and convention facilities are aggressively competing with each other. It is important for hotels and convention centers to establish an enduring relationship with key customers, associations and meeting organizers to stabilize a revenue stream[13].

2.3 Social Media Marketing

Defines social media[10]… "as an entity that consists of online technologies, practices or communities that people use to generate content and share opinions, insights, experiences and perspectives with each other". It is an important and a powerful instrument used to create buzz and apprise customers about a product or service. However, global marketers are researching to understand how the

huge amount of knowledge found on social media may be harnessed and targeted to achieve their brand objectives[9]. The likelihood of entering into a sender's profile and finding information about them is what most differentiates a social network from other websites. Social Media is bringing in a phenomenal shift in the ways that businesses are marketing themselves to their customers, compelling a rethink of the traditional marketing strategies. The proliferation of smart phones has completely changed the world of marketing. Consumers now can be reached at any time in practically any place. Also, with so many online rating and social networking websites where people can publish their opinions give a remarkable opportunity to companies to be directly involved with their customers[14]. A smart mobile phone is in reality, a small computer and has made way into the core of our lives. Each time it is turned on or off, or a website is visited with it, or an application is used, a data point is created. Moreover, online advertising, viewing habits on Netflix, Facebook posts, Google searches, create data points. These examples of data generated by us, apart from being used for business purposes, empower others to structure how our world responds to us, as researched by[8]. Social media has eventually evolved as an important channel of marketing and Facebook is considered to be the largest social media enterprise, across the world[15] Observe that Marketing through Facebook is an established concept. Using Facebook, it is possible for organizations to accomplish their marketing and branding targets at a reasonably low cost. Most of the users post a true sketch of their profiles on Facebook, comprising their age, relationship status, likings, and gender and work profiles. It's a benefit that Facebook uses to sell genuineness to prospective advertisers. Companies can reach out to their target customer segments by matching their products to customer's profile. This helps in creating a dialogue and nurturing relationship with loyal customers, by knowing their attitude towards the brand. In turn, customers also support in endorsing the brand and sharing positive associations and their 'wow moments' with the brand on its Facebook page. Further observe[2], Facebook as a well-accepted social networking platform has the highest volume of circulation and sustains the largest and fastest growing market share amongst all social network providers globally. It is thus both, imperative and critical for businesses to manage their Facebook page to their best competitive advantage, have tried[16] to reasoned out why the online marketplaces of the 21st century, have compelled organizations to transform the way they do business. It is the fundamental changes in customer's lifestyle, increasing demand for superior services and extensive use of ICT, mobile phones, and social media through Internet, which are responsible for this change. This highlights the need for companies to adapt to customer's new mindsets in order to sustain their relevance. Contemplating further on the new role of customers in service industry, refer customers[17] as partial employees, as they play an active role in producing services for themselves with little or no personal interaction with the service providers. There are other roles that service customers perform with their extensive adaptation of technology and presence of social media. They contribute significantly to service value; determine, in turn the level of a company's technological adaptation and breathe life in social network communities. Customer's role thus has protracted, more importantly to jointly owning the brand and its success[16]. A deep understanding of customers' needs and the way they like to interact with the company is most crucial for modern interactive marketing. This significantly impacts the company's ability to deliver personalized experiences which customers find valuable and pleasant[18].

2.4 Social Media Marketing of MICE Tourism

The MICE tourism segment is one of the fastest developing segments of world tourism[19]. Over the past decades, progression of MICE tourism has sparkled a cognizance of the economic importance of this segment to national markets. Conventions fast track the growth of overall travel and tourism activities through repeat visits and Word Of Mouth (WOM) communication. Meeting professionals and meeting providers have to face frequent changes in technology as technology affects the marketing and management of conventions[13]. In their research[20] observe that globally, tourism companies are swiftly changing due to globalization of markets, aggressive competition and advancements in new technology. Tourism is a service industry that has a long value-chain and is rigorously dependent on information technology. ICT has given way to the vast growth of tourism and has changed the way tourism companies do business[21]. Economic and easy access to Internet has unlocked the potential of social media marketing and has made it feasible for companies to reach out directly to billions of customers in innovative ways that was impossible previously[15]. Customers today, spend a significant amount of time creating content and posting it on social networking websites. This behooves the business community and is immensely important for hotels to keep abreast of latest trends, to effectively market themselves[14]. Highlights[2] of the rapid growth in Internet-based travel planning in the recent years, reshaping the tourism landscape and forcing business hotels to widen the scope of their traditional marketing and branding strategies. From the customer's point of view also, the widespread accessibility of social networks has significantly transformed the way tourists make purchase decisions, research about destinations, make travel and stay reservations, learn about new proposals, plan itineraries and converse with the service providers.

2.5 Websites

It is a common practice for associations, meeting planners, and professional conference organizers to set up a website for every event. It includes exhaustive information about the venue, program

Table 1. Levels of Website design and customer engagement[22]

Levels	Description	Website Features
1. Basic	Co. sells products and encourages customers to call for enquiry	Company profile, contact details, map
2. Accountable	Co. builds deeper relationships with customers by soliciting product improvement suggestions	Customer service page (FAQs), local search engines, feedback and chat, updated annual reports
3. Partnership	Company works continuously with customers to deliver better value	Loyalty programs, member hotline, personalized accounts

schedule, major attractions, and travel options[13]. Website helps the convention organizers to contact delegates and market their event to potential attendees in an effective way. These are successful marketing tool for managing delegate registrations, posting convention-related surveys, submitting conference papers and providing meeting information in a cost efficient manner, thereby facilitating in meeting the expectations of a typical meeting attendee, who is knowledgeable, middle-aged and Internet-affable. Find[22] a large numbers of hotels using their websites to nurture customer relationships. Table 1 shows three prominent levels of website design (i.e. Basic, Accountable and Partnership) in the growing order of features offered and the quality of customer engagement.

Observes[23] there has been a shift towards a more graphical website design used by hotels. Use of photographs and pictorial illustrations on their homepage and in the website has been found out to be a significant factor in both, website appeal and influence to purchase. Other aspects that consumers value in a website are easy navigation, loyalty towards the brand and website aesthetics. Further[24] reinstate through their findings that booking decisions are positively related to a website's aesthetic appeal, and that presence of photographs on a hotel's website was the most significant factor impacting website appeal and influencing booking decisions, as shown in Figure 2.

Figure 2. Website heuristics model.

2.6 Facebook

Facebook helps a tourism company differentiate itself in a competitive market by having deep knowledge of how customers explore and deduce information. Customers search for travel partners, destination, financial resource request, travel time, attractions at the destination, period of stay, accommodation selection, eating options, etc. to name a few[2]. Amount and precision of this information can be used to convert casual browsers to buyers and eventually loyal customers. Information available on hotel's Facebook page can have a strong impact on purchase decision of potential clienteles. Customers tag their friends, share their pictures and post comments on their Facebook accounts, making their experiences visible to a large audience. The option of 'Check-in' on Facebook permits users to share locations visited by them. Location generating via mobile apps feature permits travelers to easily search information about the destination while on-site. This creates trip suggestions and helps the traveller enquire about hotel recommendations based on previous traveller's experience. Tourists share their experiences and opinions after visiting a property. This reveals their quantum of satisfaction and considerably influences casual browsers. Satisfied customers post messages on Facebook to complement services and enquire about possibilities of reservation for a later date and enquire about special offers. These behavioral changes on part of the customers have led to evolving pricing and distribution strategies. It also provides a forum for managers to engage customers, observe their feedbacks, manage interactions and look out for sales opportunities.

2.7 Strategies

While studying[21] the interaction between tourist organizations, customers and other customers, proposes three drivers of e-business strategies as: 1. Customizing tourist products, personalize services and support mobile services; 2. Distributing updated information related to tourism opportunities; and 3. Offering customized products by supporting content created by customers, as depicted in Figure 3.

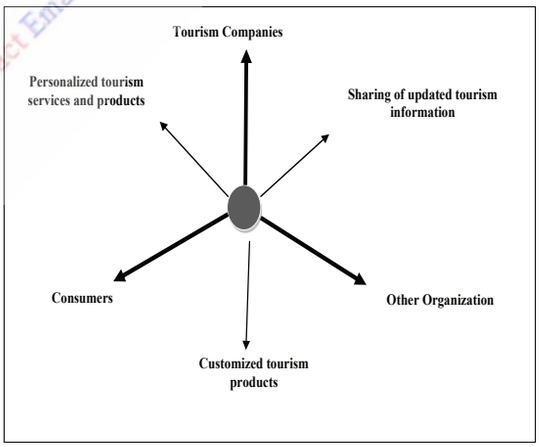

Figure 3. E-business strategies for tourism[21].

Suggests a model[6] (Figure 4) to integrate marketing strategies with big data techniques. The model has four phases: 1. Defining the strategic social media domain (which includes, identifying the specific contexts from which information is to be mined depending on the topic chosen, markets and stakeholders); 2. Selecting the most effective big data technology (social media monitoring services like Radian 6 and T-Lab are readily available for data analytics); 3. Extracting and interpreting knowledge (paradigms based on emotions rather than on price and cost alone, evaluated by content analysts using sentiment analysis); and 4. Elaborating the result reports (various types of reports like word clouds, influence viewer and river of news may be used to report results to support decisions).

The outcomes of this model may be helpful in consolidating and improving the strategic domain, the deployed technologies and the outcomes of marketing MICE tourism.

Figure 4. Model to apply big data to marketing[6].

3. Conclusion and Future Perspectives

Big data and social media have revolutionized the way MICE tourism is being marketed. A thorough literature review and study of theoretical constructs point towards the following aspects, hotels and convention centers must incorporate in their marketing strategies to be relevant in the market:

1. There is a shift towards 'Partnership – level' of website design, with customer-oriented features such as personalized accounts and loyalty programs, to enable organizations to work closely with their customers in order to deliver better value,
2. Presence of photographs on hotel's website is seen to impact its aesthetic appeal, which in turn is the most important factor that influences customer's booking decision,
3. Hotels must actively manage their Facebook page to monitor customer feedback, interactions and identify sales opportunities,
4. Hotels must provide customized services and tailor-made solutions to cater to the diverse needs of MICE segment of tourism, and
5. Hotels should work towards integrating their marketing strategies with Big Data technologies.

In a nutshell, Customer's transition from searching for information online to making a purchase decision and ultimately becoming a loyal customer is dependent on customers' developing an emotional connection to the service more than the competitors; and hotels ability to deliver individualized service support, sharing photographs and videos of events with customers, and soliciting customer experience through polls and contests[20].

Although this research paper has accomplished its objectives, there are a few areas where additional studies and empirical research may be undertaken in future to build upon the theoretical framework discussed here. A few areas of interest for future research may be to examine the financial impact on hotel's performance after adopting social media marketing strategies; or to study the marketing effect of combination of Facebook and associated services like Instagram on performance; and a comprehensive investigation regarding customer's expectations, attitude and satisfaction towards a hotel's Facebook page could be conducted.

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Annexure-I

Role of Big Data Analytics in Social Media Marketing of MICE Tourism

ORIGINALITY REPORT

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SIMILARITY INDEX

PRIMARY SOURCES

1	www.emeraldinsight.com Internet	91 words — 3%
2	Surabhi Verma, Som Sekhar Bhattacharyya. "Perceived strategic value-based adoption of Big Data Analytics in emerging economy", Journal of Enterprise Information Management, 2017 Crossref	39 words — 1%
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16	Erik Hofmann, Emanuel Rutschmann. "Big data analytics and demand forecasting in supply chains: a conceptual analysis", The International Journal of Logistics Management, 2018 Crossref	9 words —	< 1%
17	Surej John, Roy Larke, Mark Kilgour. "Applications of social media for medical tourism marketing: an empirical analysis", Anatolia, 2018 Crossref	8 words —	< 1%
18	Betsy Bender Stringam, John Gerdes. "Are pictures worth a thousand room nights? Success factors for hotel web site design", Journal of Hospitality and Tourism Technology, 2010 Crossref	7 words —	< 1%
19	Kishor, Nawal, and Raman Preet Singh. "Inter linkages and co-integration between foreign institutional investments and nifty index", International Journal of Business and Emerging Markets, 2016. Crossref	7 words —	< 1%
20	Jay Kandampully, Tingting (Christina) Zhang, Anil Bilgihan. "Customer loyalty: a review and future directions with a special focus on the hospitality industry", International Journal of Contemporary Hospitality Management, 2015 Crossref	6 words —	< 1%
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Transmission and Distribution Losses and Aggregate Technical and Commercial Losses

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Abstract

This paper presents a simple method to calculate the AT&C losses in residential area. Today most of distribution companies are suffering from high T&D (Transmission and Distribution) losses and AT&C (Aggregate Technical and Commercial) losses. Most of the companies have very high level of AT&C losses. T&D loss gives an approximate value of losses. But AT&C loss gives the accurate data of losses. In this paper we have collected the data from Housing Board Colony Jind (urban area) and calculated the level of losses in that particular Distribution Transformer wise and then suggest loss reduction methods.

Keywords: AT&C Losses, Distr ibution System, DT (Distribution Transformer), Housing Board Colony Jind, Losses, Meter

Paper Code (DOI): 19938; **Originality Test Ratio:** 14%; **Submission Online:** 02-May-2018; **Manuscript Accepted:** 11-May-2018; **Originality Check:** 13-May-2018; **Peer Reviewers Comment:** 25-May-2018; **Double Blind Reviewers Comment:** 26-May-2018; **Author Revert:** 28-May-2018; **Camera-Ready-Copy:** 29-May-2018; **Editorial Board Excerpt:** 30-May-2018.

Editorial Board Excerpt: *At the Time of Submission (ToS) submitted paper had a 14% plagiarism which is a admirable mark as far as originality description is apprehensive and falls under an accepted percentage for publication. The editorial board is of an inspection that paper co-authored by (Saket, Sunita, Swati & Rahul) had a consequent observation by the blind reviewer's which in a while had been set accurate and adjust by an author in an array of phases as and when crucial to act so. The reviewer's had in a prologue stages mention with slight amendment with a following analysis which at a short span simplified by an authors. The comments related to references, abstract and body text is noticeable both subject-wise and research wise by the reviewers during evaluation and further at blind review course of action too. All the comments had been collective at a variety of dates by the authors' in due course of time and comparable had been built-in by the author in accumulation. By and large all the editorial and reviewer's comments had been incorporated in a paper at every point in time and further the paper had been set aside and resolute beneath "**View Point**" class appropriate to it's research fondness. The research paper highlight the work in relation to Transmission and Distribution Losses and Aggregate Technical and Commercial Losses*

1. Introduction

In India national level of T&D loss is about 32.5%. Most of the distribution companies have their loss level above average rate. Power losses in the distribution system are of two types, technical and commercial. Technical losses have a small portion in total losses, main part of the losses are due to non-technical reasons. Combined both losses are called Aggregate Technical and Commercial (AT&C) losses. AT&C losses give an overall actual energy loss at the consumer end. The technical losses are due to energy dissipated in the conductors and equipment used for distribution of power[1]. Commercial losses have different reasons like theft, non billing, wrong billing, non-payment etc.

Transmission and Distribution losses are the total losses which happen between the generation and consumption. Distribution Sector considered as the weakest link in the entire power sector. Transmission Losses is approximate 17% while Distribution Losses is approximate 50%.

2. Losses in Electricity Supply

Basically there are two types of losses in distribution system. Reasons for these losses are different. Major reasons are given in brief.

2.1 Reasons for High Technical Losses[4]

- After the independence of India our major concern was on generation side not on transmission side. Very low amount was invested to improve distribution system, so losses in this section are very high.

*Author for correspondence

- Long LT 11 KV feeder produced losses.
- Old and faulty equipments.
- Under size conductors.
- Improper maintain ace and operation.
- Under size transformer.
- Faulty meters.
- Unbalanced loading of DTs etc.

2.2 Reasons for Commercial Losses[4]

- Temping of meters.
- Power theft.
- Wrong metering and billing by utility.
- By passing the meter.
- Changing CT (Current Transformer) ratio of meter.
- Poor vigilance and poor management by utility etc.

3. Calculation of T&D and AT&C Losses

T&D losses are the difference between total units billed by DT meter and total units consumed by consumers. We use the following formula to calculate the loss %:

T&D Loss = DT METER ENERGY – TOTAL CONSUMPTION BY CONSUMER (Ei – Ec)

T&D Loss % = (Ei – Ec)*100/Ei (1)[5]

- Ei = DT METER ENERGY.
- Ec = TOTAL CONSUMPTION BY CONSUMER.

3.1 AT&C Loss Calculations

It is the difference between energy input units into the system and the units for which the payment is collected. T&D Loss cannot realize losses due to non-realization of payments. ATC Loss provides accurate level of technical and commercial losses.

$$\text{AT\&C Loss (\%)} = \frac{Energy\ Input - Energy\ Realized}{Energy\ Input} \times 100 \quad (2)^5$$

Energy Realized = Energy Billed × Collection Efficiency

$$\text{Collection Efficiency (\%)} = \frac{Amount\ Realized}{Amount\ Billed} \times 100$$

3.2 Type of Meters Used

Following are the main meter used in different application

- **DT Meters**
  DT meter are connected on the low voltage side of the transformer to measure and record the total energy consumed by the no. of. DT meter can record energy consumed, give information of power factor, load, peak value of voltage, current, total time record's, duration of maximum loading and peak load values etc[5].
- **CMRI**
  CMRI is known as Common meter reading instrument (CMRI). It is compact, portable and small in size. It is used to download the data of DT meter, poly-phase meters, CT meters etc. It is an external port peripherals device[5].
- **Consumers Energy Meter**
  By the use of energy meter we record the energy consumption of the consumer for the specified time. There are different types of energy meter used for the different type of consumers with accuracy, for example different consumers like domestic, Commercial and industrial. Mainly we use the following meters as the type of consumer[5].
  - Single phase meters.
  - 3 phase 3 wire meter.
  - 3 phase 4 wire meters.
  - 3 phase 4 wires CT connected meter.

4. Methodology

In this work methodology adopted is shown below in the form of block cycle diagram:

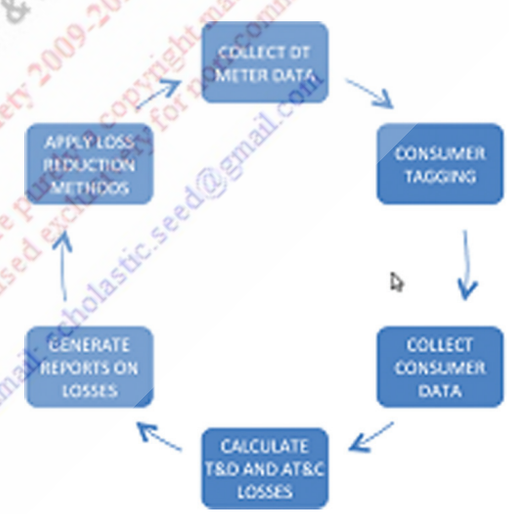

Figure 1. Methodology diagram.

Methodology of calculation of %TD loss and %AT&C Loss

1. Note DT meter energy by the use of CMRI.
2. Consumer tagging.
3. Consumer data collection.
4. Calculate T&D loss % and AT&C loss %.
5. Generate report on losses %.
6. Apply loss reduction methods.

To find the T&D loss % based on DT for particular category of consumers, we have chosen an urban area of jind, Haryana. This area has all types of consumers. We took 6 (11/0.4 KV) Distribution Transformer of Housing Board Colony Jind

The details of DT are as:

1. Housing Board NH & SS group 1, (DT capacity-500 KVA)
2. Housing Board NH & SS group 2, (DT 1 capacity-200 KVA)
3. Housing Board NH & SS group 3, (DT 2 capacity-200 KVA)
4. Housing Board NH & SS group 4, (DT 3 capacity-200 KVA)
5. Housing Board NH & SS group 5, (DT 4 capacity-200 KVA)
6. Housing Board NH & SS group 6, (DT 1 capacity-200 KVA)

First of all take the DT meter reading by the use of CMRI OR directly this is the input energy (Ei), and the consumed energy (Ec) is consumed by consumer.

We find the T&D loss % and AT&C loss % by using the formula (1) and (2) respectively for the months July, August, September, October, November and December.

Now find the causes of loss for area which help to reduce the losses specified area

Table 1. Housing board NH & SS group 1, (DT capacity-500 KVA)

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
TOTAL CONSUMPTION	71755	74470	53843	53981	36678	35495
DT meter energy	86539	90600	64026	63517	43571	42923
%AT&C LOSS	27.09	27.68	26.26	25.11	30.54	26.34

Table 2. Housing board NH & SS group 2, (DT 1 capacity-200 KVA)

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
TOTAL CONSUMPTION	47498	49040	20119	35288	26182	26067
DT meter energy	60317	61767	25236	43622	32485	32817
%AT&C LOSS	34.06	33.50	40.19	30.26	31.12	33.79

Table 3. Housing board NH & SS group 3, (DT 2 capacity-200 KVA)

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
TOTAL CONSUMPTION	46395	47942	34970	35896	31574	25485
DT meter energy	56292	58431	43165	43704	37863	31598
%AT&C LOSS	30	31	30	28	26	30

Table 4. Housing Board NH & SS group 4, (DT 3 capacity-200 KVA)

	JUL	AUG	SEPT	OCT	NOV	DEC
TOTAL CONSUMPTION	975	1007	657	635	263	255
DT meter energy	1148	1213	770	737	306	302
%AT&C LOSS	34.93	36.36	30.96	30.20	15.80	17.44

Table 5. Housing board NH & SS group 5, (DT 4 capacity-200 KVA)

	JUL	AUG	SEPT	OCT	NOV	DEC
TOTAL CONSUMPTION	21192	22218	16094	15734	11392	10997
DT meter energy	25854	26661	19152	18724	13942	13597
%T&D LOSS	26.70	25.35	24.32	24.23	38.81	39.48

Table 6. Housing Board NH & SS group 6, (DT 4 capacity-100 KVA)

	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
TOTAL CONSUMPTION	2564	2649	1866	1805	959	928
DT meter energy	3021	3070	2176	2120	1102	1108
%T&D LOSS	36.23	35.16	32.76	33.21	30.78	33.46

5. Result and Discussion

From the data we find out the Transmission and Distribution losses. We have one 500 kva transformer, four no's 200 kva transformer and one 100 kva transformer in the housing board colony Jind. These different transformers have different AT&C loss depend upon the consumer. We calculated the losses. In the 500 kva AT&C losses are nearly 27.07%. In the 200 kva 1 AT&C losses are nearly 33.22%. In the 200 kva 2 AT&C losses are nearly 2929%. In the 200 kva 3 AT&C losses are nearly 31.37%. In the 200 kva 4 AT&C losses are nearly 28.52%.In the 100 kva AT&C losses are nearly 34.15%. The losses can be reduce by different method.

The graph can be draw of for the %AT&C loss as per Distribution transformer.

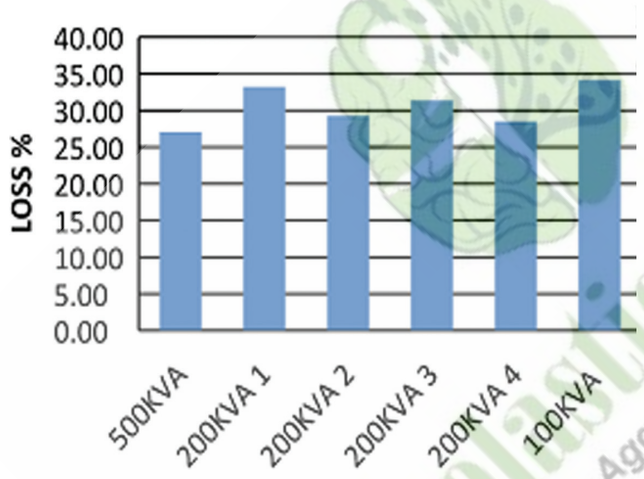

Figure 2. Average AT&C LOSS % of 6 DT's.

6. Conclusions and Future Directions

From the collected data and applying formula we have estimated the losses of power in the distributed area of housing board colony Jind. The AT&C losses in the month of July is 29.79% in August 29.77% in September is 29.94% in October is 27.64 in November is 30.08% and in December is 30.40%. By apply the loss reduction method we can reduce losses in the future and save the energy. We can also find the Transmission and Distribution Loss. These losses should be low if these losses increase that's direct indicate wastage of power and money and efficiency will decrease. So to reduce these losses we have discuss different method .Main reason of these loss is theft of power. We prevent the theft of power in the future. There are also different method for the specified area we can apply by finding the losses. For reducing losses we can apply Arial bunch cable, pre-paid meter. Separating domestic, commercial and industrial feeder we can reduce the loss.

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Annexure-I

Transmission & Distribution losses and Aggregate Technical & Commercial losses

ORIGINALITY REPORT

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SIMILARITY INDEX

PRIMARY SOURCES

1	Rajneesh Pawar, Jitender Singh. "Calculation of T&D Loss % Based on 11/0.4 KV Substation in a distribution utility", 2012 IEEE Fifth Power India Conference, 2012 Crossref	120 words — 8%
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Citation:
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Workplace Spirituality and Managerial Effectiveness

Anil Sardana*

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Abstract

Workplace spirituality includes values like love, non-violence, honesty, peace, quality work and right conduct while some believe treating employees and workers in a caring and responsible way. The concept of workplace spirituality and managerial effectiveness is explained through various perceptions. Recent research has proved that spirituality at workplace can significantly boost the productivity and overall performance of an organisation. Latest studies now aim to provide analysis on how spirituality may be applied to various walks of life, at the private and personal level, and also at the professional and official level. As a result of this, there is now a broader vision as far as organisational techniques of workplace spirituality is concerned. The spiritual potential of each individual must be tapped into for a productive professional output. In this, professionals and the management of organisations themselves are slowly beginning to understand the importance of spirituality in work spaces. They now realise that the appropriate intertwining of spirituality and work. This paper seeks to address how spirituality is linked with workplace behaviour and productivity and how it can enhance the same.

Keywords: Managerial Effectiveness, Organization Effectiveness, Spirituality, Workplace Spirituality

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Editorial Board Excerpt: *Initially at the Time of Submission (ToS) submitted paper had a 31% plagiarism and after rectification it was reduced to 19%, which is an accepted percentage for publication. The editorial board is of an observation that manuscript had a succeeding close watch by the blind reviewer's which at a later stages had been set right and make improvements by an author (anil sardana) in various phases as and when essential to act so. The reviewer's had in a preliminary stages mention with minor revision with a following remark which at a short extent simplified by an author. The annotations related to this manuscript is tremendously perceptible both subject-wise and research wise by the reviewers during evaluation and further at blind review process too. All the comments had been shared at a diversity of dates by the authors' in due course of time and same had been incorporated by the author in totaling. By and large all the viewpoint and reviewer's comments had been integrated in a paper at the end and further the paper had been earmarked and decided under "View Point" class as its highlights and accentuate the work in relation to Workplace Spirituality and Managerial Effectiveness*

1. Introduction

The managers of an organization have a major role to play in its endeavor towards success, as they develop, formulate, and implement techniques in far sighted manner, along with keeping in mind short term needs. This is done to ensure the same through steady growth and development. Still, simply ensuring that managers are working according to the organisational demands is not enough to achieve success. Instead, what the organisation actually requires that efficient management is in place if they want to gain organisational progress at a consistent level.

The Manager's output is most impactful on an organisation. An organisation relies heavily on the output and efficiency of a Manager who is overseeing the various teams working on various projects of the company. How the Manager manages the work and handles the teams significantly influences the profitability of the company. Productivity and success are resulted only when there is a good team effort, and a good team effort can be in place only when the Manager who is in charge of it, handles the work and distributes it well.

In this, managerial effectiveness has been mostly explained through organizational goal achieving behaviour. Bartol and Martin[2], define managerial effectiveness in terms of setting and achieving organizational goals. To go further, Guion argues that the effectiveness of the manager lies in accomplishing all aims of the organization. Indeed then, the manger's aims for the long term goals of the organization is the primary element in determining managerial effectiveness, as said by authors Srinivastava and Sinha. In this, it can be observed that in recent times, workplace spirituality is gaining significant attention, especially when it comes to organizational performance.

It can be said that spirituality has a deep seated link with the quality of an individual's existence. Initially, spirituality, in commonsensical terms, was linked up with religion and religious practices. Later, it became known as an independent way

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of being which was not particularly linked with institutional/mainstream religious traditions. Indeed, while sacred texts and scriptures attributed religious processes to spirituality, in modern times the focus has shifted from the outward practice of religion to a more inward, and meditative process which is subjective and relative in nature. It is no longer considered necessary to practice religion in the formal sense to attain spirituality. Organised, institutional spirituality is no longer deemed the only method for the same. It has come to acquire a more abstract quality which makes it something that can be not just indwelling, but also intimate and individualistic. Spiritually is now said to be something that is so fundamental, that it is innate within us, and needs to be harnessed and evolved through proper channelisation of positive energies. The focus in recent times is more on the internal development of the mind, body, and soul, and a re-energisation of the spirit, which will in turn result in individuals gaining deeper knowledge of values, principles, traditions, humanity and even the cosmos. This would be effective in attaining spiritual growth and development of the human soul.

Thus, it can be said that spirituality, in contemporary times, is understood to be deeply intwined with matters of the human spirit and the soul, as opposed to the material and physical aspects of the being. Accordingly, several sacred texts have generated discourse on matters of spirituality and have advocated specific patterns of behaviour and conduct that would allow for the attainment of the same. Spirituality is now understood to contribute to the office setup and work environment as it strengthens various positive works attributes like organizational performance, organizational commitment, positive work outcome, and spiritual leadership. Moreover, due to its all-inclusive nature, spirituality is used in a very utilitarian manner by some businessmen, while for some businessmen; spirituality is an individual and private concern that has more focus on personal and human values. Similarly, some businessmen relate spirituality to meditation, yoga and prayer sessions and hence use these methods at work. For some others, spirituality is directly linked with being socially responsible and environmentally sustainable. These organisations wish to ensure that the growth and development of the company does not adversely impact nature or society. Such socially conscious and humane work cultures can not just develop exponentially through sustainable methods of growth, but can also enable the advancement of the civilisation at large. The primary focus in this is not material profit, but holistic growth of all individuals and stake holders. It lays emphasis on how it can positively bring change in or impact the environment, serve the community, or contribute towards the betterment of the society as a whole. Thus, spirituality is a way of life that lends an individual a purpose in life, and positively impacts their outlook and thought process, as well as worth ethic.

2. Review of Literature

2.1 Managerial Effectiveness

All organizations are aware of the potency of the managerial class within it. It has been widely acknowledged that mangers have a huge role to play in the functioning of the organization. For this reason, researchers have been forced to investigate the factors that determine such effectiveness. According to Balaraman[3], managerial effectiveness is dependent on behavior of an individual such as how managers communicate, schedule and plan, delegate work and train subordinates. Effectiveness as collective energy of individual mangers in the organization. Other factors recognised by researchers are trends and culture, as said by Pathak et al, Smith and Schwartz, and Vallabh[31,35,39]. Personality also plays a role[4,17,32]. Even according to Narayan and Rangnekar and Ravichandran, managerial effectiveness is determined by human resource practices[25,33].

2.2 Spirituality

Spirituality can be viewed as an area with a broad spectrum. It has come to acquire different meanings, and can take different forms for people belonging to different walks of life/careers/cultures/races. Some believe that spirituality is related to religion while for others it does not hold true entirely. In actuality, spirituality means being humane, and incorporating the power of humanity within us. Writers like Mitroff and Denton[23] have said that specifically, "spirituality inculcates the supreme power that rules the entire universe". It is a feeling, and a kind of proclivity/propensity that comes from inside. It is method though which it becomes possible for individuals to maintain a link with the society and the nature, without become too exclusivist and individualistic. Faith, self-knowledge, love, honesty, forgiveness, optimistic, are all part of spirituality (Freke). According to Taylor, spirituality is finding oneself and being creative, flexible, fun, and having vision in cultural context, spirituality is the state where consciousness is higher than the body mind centred ego and living under such consciousness.

2.3 Workplace Spirituality

Mitroff and Denton in their book believe firmly that religion has very little role to play in spiritual endeavours[23]. God has very little to do with it. Thus, spirituality has no connection with religion and belief. Spirituality is about giving and service, forgiving and loving, meaning and morality[19]. Spirituality in fact eschews all kinds of associations with religious practices and in fact comes from within, and takes root, irrespective of their religion, as said by author named Graber[10]. Three views regarding workplace spirituality are given by Krishna Kumar and Neck[18]. The intrinsic concept is that spirituality comes from within, and the existentialist view is that it comes through the individual.

Organizations have started realizing that by incorporating spirituality at workplace they can boost loyalty and improve the morale of the workers. Authors likeVaill argued that spirituality is important as it can be used to focus on the duties of a manager of an organization[38]. This is all the more significant because spirituality at workplaces and formal setups are gaining more and more focus because people want to feel interconnected and synchronized at workspaces[40]. According to him, managerial leader leads and guides people who are spiritual. Thompson, found that people who are spiritual at their work put compensations and other benefits secondary and give more importance to respect[36]. It must be said that there is a requirement of uniting people who have variegated spiritual commitments and routines[13].

Spiritual leaders benefit organisations as well as employees. Under spiritual leadership, employees become even more focused and responsible, become more accountable at work committed towards work, develop a stronger sense of calling and experience, they even develop a sense of self-growth and from leaders as well[34]. Spiritual leaders make sure that the employees feel engaged, foster unity in a diversified workforce, are sensitive to the stakeholders, promote integrity and encourage a sense of connection[8]. Some further qualities that they acquire are experimental mindset, innovativeness, open-mindedness, harmonious workspaces, kindness, compassion, loyalty and respect.

2.4 Workplace Spirituality and Organization Effectiveness

Nowadays organizations are focusing more at improving the quality of performance both efficiently and effectively. Many people are dissatisfied with their jobs and feel restless and insecure in the organization they work. Studies suggest that issues like job-fulfilment, financial security, self confidence and team spirit are not to be found easily amongst the employed individuals in the economy. Change in the work environment due to actions like restructuring, reengineering, downsizing has caused demoralization in spirituality[21]. Spirituality has therefore emerged as inspiring and flexible concept which is catering towards the needs and aspirations as well as the pressures faced by the employees[2,6,28]. Recent findings point out that spirituality has a surprisingly fruitful impact on the mechanics of an organisation. Factors mentioned above have resulted in positive change in the organisational performance, profitability and its effectiveness.

The need for spirituality in office spaces first began to felt in the early twentieth century when it was finally seen that spirituality is required not just in the private, domestic, and community level, but also at the professional level. Individuals wishing to practice spirituality in their workplace lead to this movement, and took root first in the U.S. after which the trend slowly spread to the rest of the world.

In recent times, the practice of spirituality has come to acquire more meaning, given the fast-paced modern life which is full of tensions and stress. Spirituality has been observed to relive that to a great extent. More and more organisations are embracing workplace spirituality to ensure a better work culture. Activities such as bereavement programs, integration of family with work, inclusivity under which there are diversity programs that allow for the intermingling and adaptation of diverse groups into the office space etc, have allowed the employees to strive for a meaning in their work and connect with the others, as well as the community. The measures taken within work cultures for the ability of workers to achieve spirituality while they pursue their careers have been seen to a have therefore had a positive impact not just on the work environment and organisational growth, but also in the development of the worker as an individual.

Other facets of spirituality within workplaces, which face constant debate and changes as the methods are evolved over time and adapted to suit the different needs of different work cultures are: sustainability, community service and social service, development of principles and core values. In this, the practice of sustainability ensures that each individual is aware of the slowly dwindling natural resources that is available to humankind, and that everything derived from the nature must be used judiciously without exploitation. Technological advancement must not come at the cost of nature at any point. This lessens wastage, and allows for decision-making which is environmentally and socially helpful and safe. The long-term implications of all kinds of decisions towards growth are seen, and the negative sides of such development are tackled with through systematic strategising. The company reviews the possible rewards and off-sides of the business decisions and takes steps for the greater good instead of just the benefit and profit of the company. Similarly, community and social service lays focus on the concept of "giving back" to the community instead of just taking. Managers and employees are aware of this responsibility and take decisions accordingly. In the same way, the development of principles also focuses on the idea of togetherness, while discarding the individualistic way of being. Helping workers in synchronising one's growth, creativity and work methods, benefits the organization tremendously. It allows the employees to hone sound professional and personal relationships, and develop management and other work skills. In this, workers are motivated into delving into the influence that the interpersonal interactions between employees have on their collective psyche.

The basic idea behind workplace spirituality therefore draws heavily from the moral ethical values, values, inspired living, motivation, a balance between personal and professional space, and managerial issues. Organisations that deal with spiritual upliftment are now helping other oganisations to achieve spirituality in workplace. They are deeply concerned with equipping employees in companies acquire a spiritual state of mind and reach their true

spiritual potentials, by gaining an insight into their inner selves, and by connecting with their inner soul. They are focused on resolving issues that deal with conflicts in work places between employees.

In many studies in the past, spirituality in workplace has been found to have links with management as well. In a study conducted in 2005, a positive relation has been established between spirituality in offices and the performance of the organization over all. Another study of secondary school principals in Malaysia by authors like Abdullah (2009) shows the links between efficiency and effectiveness and spiritual state of being. Writers like Kolodinsky have also established such links between spiritual growth and work output[16].

The study has found positive relation between spirituality and factors like high levels of job satisfaction, greater involvement in job, and identification with the organization. A positive relation is also shown among workplace spirituality and attitudes in workers[7]. Commitment towards organization they work in[20,26,37], job satisfaction[29] and the happiness quotient in life[15].

In contemporary times, with the growing trend of profit-seeking in the organisation level at the global level, as well as in the international job scenario, it can be seen that spirituality and material benefits and long-terms profits are compatible and in fact inter-dependent. Several research prove that in organizations where there is spiritual practices on a regular basis, have actually shown better work output and efficiency as well as commitment to growth. This in turns results in a better sense of satisfaction due to the increased productivity. The individuals are in such cases can be seen to be more driven and passionate about the work assigned to them. They are more focused, and because of the peace of mind that they have due to the practice of spirituality at workplace, they are able to function more productively. A great team spirit and drive can be seen in such offices.

Indeed, discussions on the manner in which spirituality has been improved, resulting directly a more holistic growth is important. It is further important to have spirituality in workspace because it allows for organizations to be more ethical so as to foster ethical decision-making in their offices. This in turn allows for a greater development of spirituality and leads to a sense of oneness and solidarity in the office space.

2.5 Main Objective of Research

The primary aim of the research:

- To understand the links between spirituality in workspace and good management.
- To determine the impact of spirituality in organizations on the efficacy of management.

Hypothesis

- There is an exact and direct link between spirituality at workspace and management ethics.
- There is a direct impact of spirituality significant impact of workplace spirituality on managerial effectiveness.

3. Data and Methodology

In this study a survey was done to examine the link between spirituality in workspace and management. About hundred managers were selected by convenient sampling from the public space in India with operations in the energy. This particular sector was selected owing to its growing importance in investment sector, and now it is observed that several that all lot of effective managers are needed[9]. The data was collected by personally distributing the questionnaires to managers after explaining them the conceptual framework of spirituality and managerial effectiveness; in return the response rate with complete questionnaire was only about 82%. The standard deviation of sample was 9.2 and mean age of sample is 37 years. It must be mentioned that from the total of 82 managers who were surveyed, 51% were graduates, and 49% were post graduates.

3.1 Measures

The primary motive is to determine the link between spirituality and managerial effectiveness. The survey makes use of the questionnaire system.

Ashmos and Duchon spirituality scale is used by adapting 24 items. In the original scale there were 7 dimensions whereas in study 3 dimensions are chosen in work and its complete sync with with moral values with that of organizational values[2]. These values are selected because of its importance and recognition in the previous study[22] and this value systems show how there is an involvement of employees in workplaces[27]. It can be found that seven items are found in "meaning in work" and eight in the "alignment of personal values with the organizational values". There are eight in so far as "sense of community" is concerned. The above-mentioned values system which is selected have been rated at 1 to 7 Likert's scale with lowest as 1 which shows lowest agreement and 7 the highest agreement. Responses were derived through summations. The threshold limit is 0.7 which shows that the scale is dependable[30]. For calculating the management efficiency another scale was developed Gupta 1996, this consists of a total of forty five from which the negative items were 10 and positive items were 45. These items have been rated on a Likert's type scale of 1 to 5 in which 1 shows disagreement and 5 shows agreement. The scores of management have been obtained by totaling the responses the Cronbach alpha was calculated and was found to be 0.79. This scale is chosen because of its importance in determining the level of efficiency in Indian managers in supervisory roles[11].

4. Analysis and Interpretaion of Results

The objectives of the paper are achieved by using the coefficient correlation in spirituality in workspace and effectiveness in management which is shown below in Table 1.

Pearson correlation shows the positive relation between workplace dimensions i.e., meaning in work, community feeling, and synchronising of moral values with organizational values with managerial effectiveness. From the correlation it cannot be interpreted the extent to which the workplace spiritualty and managerial effectiveness are related. In order to do this, we have used regression analysis.

Table 2 shows the value of R is 0.60. Which indicates that workplace spirituality and managerial effectiveness are significantly related? The reason for this can be that managerial effectiveness is not dependent solely on motivation and other external factors but also spiritual prowess which brings good and positive energy and behaviour.

Table 3 shows the step wise regression analysis to check the effectiveness with factors of spirituality in workspace. The table shows that meaning in work accounts for twenty six percent of variance in estimating managerial effectiveness. Correspondingly, meaning in work together with sense of community gives thirty percent of variance in predicting managerial effectiveness. Finally adding all the variables account to thirty five percent of variance in forecasting managerial effectiveness. The reasons for this can be that managerial effectiveness is when managers find meaning in their work as it gives them the motivation[12]. Sense of community helps managers in relieving their stress as it provides them with emotional support and thus leads to effectiveness in work[14]. Linking personal values with organizational values creates a favourable environment for performing better and thus having managerial effectiveness[24].

Table 1. Pearson correlation

Variables	Meaning in work	Sense of community	Alignment of values	Workplace spirituality
Managerial effectiveness	0.51*	0.40*	0.53*	0.59*

*significant at p< 0.01

Table 2. Standard regression

Dependence variable	Independence variable	R	R^2	SE	F-value	d.f	Beta
Managerial effectiveness	Workplace spirituality	0.59	0.35	12.00	46.43*	1,83	0.59

* significant at 0.01 level.

Table 3. Step wise regression

Dependent Variable	Independent Variable	R	R^2	SE	F-Value	d.f.	Beta
ME	X1	0.51	0.26	13.84	13.84*	1,83	0.51
ME	X2	0.55	0.30	13.58	18.54*	1,83	0.41, 0.20
ME	X3	0.59	0.35	13.00	16.24	1,82	0.25, 0.12, 0.34

*Significant at p < 0.01 level

5. Summary and Conclusion

Workplace spirituality is gaining expansion in recent times. In the recent times, the work culture, especially given the hectic corporate systems with the growth of the multinationals in the time of globalisation, has changed severely. Recent trend towards retrenchment, downsizing, restructurig, slash and burn practices have had debilitating impact on employee morale. Professional and organisational concepts of efficiency and competence have been altered so that here is rampant exploitation of employees. Work place idioms like"Job-for- life" "Loyalty and absolute loyalty to the employer" have been twisted. Indeed, due to the increased levels of competition, the fear of losing one's job looms large over all individuals working in different organisations. The intermingling of the traditional and cultural with the modern and capitalistic has thus proved to be beneficial. How workplace

spirituality works is because of the dual nature of it. It impacts the employee's psyche and also boosts the growth of the organisation that the employee is working as part of. The organisations are therefore heavily invested and focused upon the development of spirituality in workplaces to be able to reap the benefits of the same. As is said my some researchers, an active spiritual life can help employees find meaning and purpose in their lives and imbibe deeply cherished personal values.

Indeed, spirituality is a bent of mind, it is an inclination in an individual's mind which cannot be forced or streamlined by a religious body. Using spirituality in the professional aspect of life can greatly help one understand one's true potential. A company's overall performance can be significantly improved and boosted through these techniques wherein the employees adopt spiritual values. More employers are encouraging spirituality to boost loyalty and enhance morale. Responses from respondents concluded that Indian managers practice spirituality at the workplace. Conferences, symposia, workshops and short duration training courses can help in creating awareness about spiritual based leadership and workplace spirituality and its implications among masses. A standard pattern should be created in the present set up to accommodate spirituality in the existing framework of business set up to motivate business houses to introduce spiritual values in their business organisation without much disturbance. It is now known that simply high salaries and good incentives which offer lucrative gains will not provide satisfaction to a worker. They need to go a step further and ensure that they have a healthy mind, body, and soul, and that their spirits are rejuvenated if they have to be economically productive. If an organisation has to work well, then the individuals need to be treated humanely.

Conferences/spirituality in seminars/workshops on workplace has also helped at the international levels. Special websites that are devoted to helping organisations gains workplace spirituality are also available. As researchers have pointed out, that the corporate sector has zealously began to incorporate spirituality with the help of conducting workshops, seminars, conclaves, in order to specifically nurture the soul, so as to help employees achieve spiritual growth.

The above-given study thereby attempted to find the relation between workplace spirituality and managerial effectiveness. The results showed that the two are related to each other in a positive way, workplace spirituality is recognised as interpreter of managerial effectiveness. The findings from this study can help in the OD practice by allowing for a sense of community and oneness to develop in the workplace. The results have thrown up several possibilities of further study. It can be seen clearly that the only way ahead is the incorporation of spirituality in office spaces to boost the performance of organisations.

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Annexure-I

WORKPLACE SPIRITUALITY AND MANAGERIAL EFFECTIVENESS

ORIGINALITY REPORT

19%

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Organizational Blunders – Role of HR in Promoting Ethical Values

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Abstract

Corporate ethics is a hotly debated issue nationally and internationally. In the race to get bigger, and richer, we have left ethical values behind. As Human resource managers, we could help turn the tide by ensuring HR leaders play a pivotal role in promoting corporate ethics, identifying and counteracting the challenges HR will face in enforcing the ethical values. However 'trouble' in corporate ethics is just the tip of the iceberg. There are a number of parties with vested political interests ready to claim their share in the business booty. Every now and then we read about corporate scams and crooked politicians trying to cover up for their corporate buddies. These merchants of unethical values reap billions of rupees while the people in general and bright young corporate staff in particular suffer. The objective of the paper is to explore the role of HR in promoting ethical value. Furthermore, the paper also examines how HR ethical values in corporations will reduce government complicity. Our methods, assumptions and conceptual tools will emphasize the fact that HR Professionals can make a difference by enforcing strong ethical values in Corporations. The recommendations suggested by the researcher, if implemented, we hope will make people more aware of ethical values leading to a win-win situation for organizations and the public at large.

Keywords: Business, Challenges, Ethics, Government

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1. Introduction

Today business organizations are synonymous with scandals. Market rigging scandals around the globe have exposed the inadequacy of HR practices in corporations. The human resource seems to avoid the Implementation of basic ethical values on which the crucial decisions are based. Corporation top brass design parameters under which HR experts need to set and enforce norms and standards of ethical values. Corporations have to decide on the ethical stance it's going to take – a compliance, a fair-dealing or/and a good citizen orientation? Fundamentally, it has to enforce ethics as about acting fair and responsible in everything it does. Many companies are taking a piecemeal approach. They have a program – on compliance, diversity, stakeholder engagement and involvement in different areas, safety in every area, privacy, and so on. Essentially, human resource professionals have to graft the ethics onto the organization which is most important through these stand-alone programs. A different and easy approach is to unite ethics into the organization's usual activities – its decision-making, its performance management systems, and above all its management processes[3].

2. Literature Review

The moral infringement happens when people, associations, expert and social orders neglect to manage esteems like genuineness, equity and an unmistakable meaning of what is good and bad[6].

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As a few creators state in late productions, morals additionally turn out to be increasingly an inward worry of associations. Though once the interests of workers were disregarded or just viewed as one of a few partners' interests, the "moral administration of representatives"[36] picks up in centrality. Johns (1995:32) states that "the ideal opportunity for the moral initiative has come". Particularly human asset administration (HRM) assumes a definitive part in presenting and actualizing morals. The work diagrams a few parts of morals in HRM. It portrays moral worries that developed in late HRM faces off regarding the perspective that morals ought to be a vital issue for HR experts. Various moral structures and their application in HRM arrangements and practices are checked on. Here, the attention is predominantly on obstructions and impediments to presenting moral gauges in HRM exercises[31].

The National Business Ethics Survey (NBES) (2000) discovers much that is empowering for associations that are putting their endeavors into working environment morals. For instance, workers have elevated standards for morals inside their associations. More than nine out of 10 respondents say that they "anticipate that their associations will make the wisest decision, not exactly what is beneficial." This finding proposes that most representatives are not all that sceptical about morals at work*.

Dark colored (2003) brought up a great part of the current concentrate on business morals has been coordinated against budgetary defilement, particularly a worry with bookkeeping principles. However, concern has been raised over an extremely wide scope of issues.

The deceptive routine with regards to HRM itself has additionally hit open consideration:

1. Off-shoring and misusing "shabby" work markets;
2. Using youngster work;
3. Reneging on organization annuity assertions;
4. Longer working hours;
5. Increasing work push; and
6. The utilization of questioned and questionable practices in contracting and terminating of workforce.

Cambridge Advanced Learner's Dictionary characterizes Ethos as "the arrangement of convictions, thoughts, and so forth about social conduct and relationship of a man or gathering" while Oxford Advanced Learner's Dictionary characterizes it as "the ethical thoughts and demeanours that have a place with a specific gathering or society". Indian Ethos is about what can be named as "national ethos".

Satyendra Dubey (Indian Express, 2003), an eminent fellow who was working for National Highway Authority of India who was punished for basically making the best decision. He was gunned around by mafia in Gaya in the year, 2003 morning, almost a year after he had griped of defilement on the Golden Quadrilateral task to the Prime Minister's office. Knowing the perils that encompass genuine individuals kicking the entire degenerate framework[24].

The demonstration of passing up an individual is now and again considered as being unfaithful to the association or organization that he or she is joined with. The by and large winning perspective of the shriek blower inside the business, with respect to the administration and partners, is that this individual is a trickster to the association[11].

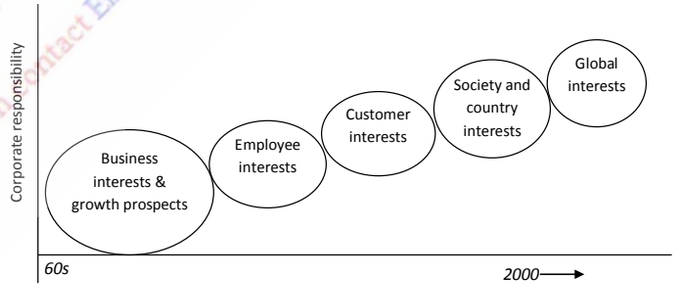
Marshal et.al. (1979) opined that in the discerning perspective of the firm, the representative's fundamental good obligation is to move in the direction of the objectives of the firm and keep away from any exercises that may hurt those objectives. To be exploitative, fundamentally, is to go astray from these objectives to serve one's own particular advantages in ways that, if unlawful, are considered a type of "office wrongdoing**".

3. Research Methodology

This research paper endeavors to toss light on the applied issues related with Role of HR in advancing Ethics. It is engaging examination where the attention is on a reality discovering examination with sufficient elucidation. For this reason, secondary information was gathered. The secondary information was gathered from daily papers, magazines, books, diaries, meeting procedures, Government reports, and sites.

3.1 Changing Face of Ethical Values

Through the times we have seen the importance and role of ethics in many kinds of corporations undergoing massive changes. Not only in the corporate have ethical values undergone a paradigm change, the change is visible in each and every field of human endeavor. Let us try and plot the 'progress' of the corporate through its changing areas of interest (Figure 1).



Source: AT Lawrence, J Weber (2014)***

Figure 1. Changing face of ethical values.

** National Business Ethics Survey (NBES) - "How employees view ethics in their organization", Ethics Resource Centre, 2003.*

*** Marshal B. Clinard, corporate corruption: The Abuse of power (Praeger, 1990).*

****Business and Society: Stakeholders, Ethics Public Policy/AT. Lawrence, J. Weber (2014).*

So with corporations now ready to conquer the globe, what is it that will make them stand apart from the hoard that is ready to crush them under the hoofs of competitive pricing and promotions. We intend to make ethics that bane which will take our national talent forward onto the world scene and the government will help us, albeit ethically.

3.1.1 Ethics in Business

But before we move forward, let us take a look at the world's richest corporations, the 'government empires' that have been 'contributing' a lot to our changing ethical values. One fears the law more than one respects it, and one respects ethics more than one fears it. That significantly brings out the spirit of a code of ethics both by connotation and obligation. Mores embark on where the laws end. Thus the doctrines of ethics are much more venerated than the philosophy of law, and rest above and ahead of their functions and scope. Punishment in the episode of disregard for ethics is more self-inflicted. Unethical behavior of a single person working a particular profession injures and belittles the entire profession together with those who practice it. Such is the case of the infamous lawmakers of our country – the political bodies. A few glaring examples where the government forgot to clean up its act and the corporations made the most of the lack of values are as follows. In all the cases under mentioned, the common man paid the price:

1. Political nexus in stamp paper scam under scrutiny (www.frontline.in/static/html/fl2023/stories/20031121002204700.htm),
2. Piper Alpha disaster: how 167 oil rig workers died (https://www.theguardian.com),
3. Karen Silkwood: Plutonium Whistleblower (time.com/3574931/karen-silkwood),
4. Space Shuttle *Challenger* disaster (www.history.com/topics/challenger-disaster), and
5. DC10 and the Famous Cargo Doors (www.airliners.net › Technical/Operations)

In all the mentioned cases, warnings with an alertness of the hazards and risks went unheeded, and the whistleblowers suffered harsh penalties for their public-spiritedness. And the government did nothing, but tries and covers – up their abysmal performances and failures.

- 300 feared drowned in Kenyan ferry sinking (From Herald Scotland) and that warning had gone unheeded,
- The emission of Union Carbide popularly known as Bhopal gas disaster, India, 3,000 killed and 2,00,000 injured but were ignored by the local authority, and
- Nuclear tragedy, Chernobyl enclosed similar ingredients.

3.2 Corporate and Political Nexus

Corporation's investment in political parties to an amount that could be seen as a corporate capture of the foundation. Critics spot this as a fair and ethical setback, because of the level of business control over government policies and decisions which accompanies the funding. Critics do not suggest that the company should give up, returned, or even limited. The protest is regarding the corporate control, which they see as threatening 'government autonomy', and as inimical to the public good.

Such is the case even with the highly 'advanced' and 'democratic' societies of the world. A few examples are:

- The pharmaceutical companies of the United States,
- The nuclear power corporations of Japan, and
- Meatpacking industries of Europe.

The scams involving politicians of cabinet ministerial levels and companies with 'goody' reputations have been a severe rage to public poise previously falling in the shadow of financial inequality. The companies socially unconscious appeared to justify their irresponsible behavior with the mentality "everyone is doing it".

3.3 An Analysis with Respect to Role of Ethics in Combating Corruption in Business

Following areas are to be considered while making a plan for combating corruption and increased role of ethics in performing business activities:

1. Ethical attribute; which inculcates wisdom/self-control/moral values/courage/justice/social responsibilities in our activities
   - If he exhibits some or even one of them then it is highly possible that the person will tend towards ethical or 'morally correct' decision-making.
2. Policy aspect; by deciding the plan of action to be taken in respect of a certain situation
3. Study the consequences; social benefits and/or personal benefit
4. Evaluate the outcome on the TRUST scale:
   T = Transparency; truly open, which an individual could feel free in expression to all- (Employers, peers, subordinate and even to family and friends)
   R = Responsibility; feel committed to the interests of all to the maximum as far as possible.
   U = Uncompromising; assuring activities towards higher moral values
   S = Successful; producing results with strong values

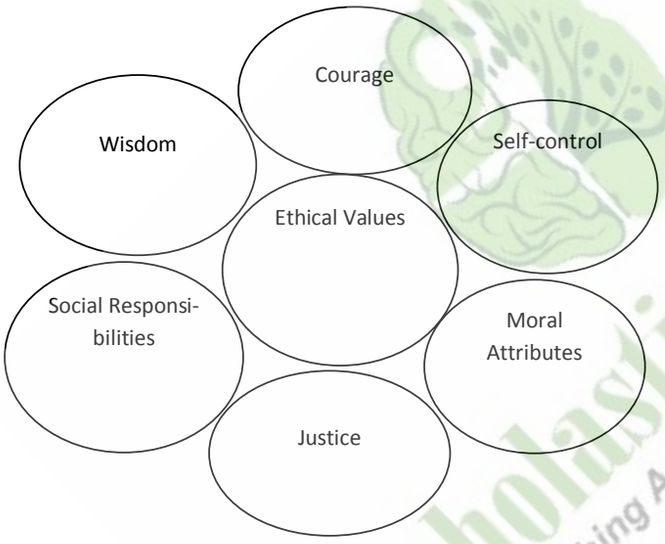
T = Temperate; taking care, avoiding risks, wild decisions, extravagancies in the form of bribes etc.

- Decision making; Compare the results: ethical vs. unethical.

3.4 A Proposed Solution to Unethical Activities

3.4.1 Resolve the Ethical Dilemma Through the Personal Values of Ethicists

Based on the extensive literature review, the researcher has found that if following suggested ethical attributes are being implemented in any of the organizations will lead to overcoming the problem of organizations blunders which ultimately lead to the promotion of business ethics and develop prosperity and lead to the achievement of organization goals (Figure 2).



Source: Journal of Business Ethics 15: 827-838, 1996. © 1996 Kluwer Academic Publishers, Printed in the Netherlands

Figure 2. Resolve the ethical dilemma through the personal values of ethicists.

3.5 Self-Control

- Deal with their impetuous thoughts and distressing emotions as well,
- Stay cool, calm and collected, affirmative, even in difficult moments, and
- Reflect visibly and stay focused under stress.

3.6 Courage

- To present with self-assurance, self-confidence; having charisma, and
- Able to formulate decisions regardless of fears and pressures.

3.7 Moral Attributes

- Act ethically and beyond reproof,
- Construct reliance all the way through their trustworthiness and authenticity,
- Confess their own mistakes and meet head-on with unethical actions in others, and
- Take strong ethical stands, even if they are unpopular.

3.8 Social Responsibility

- Feel empathic and taking the active care of their concerns, and
- Exhibit compassion and value others perspective.

3.9 Justice

- Find a sense of harmless purpose of doing something,
- Utilize the groups' core values in building decisions and illuminating choices, and
- Abide by human and legal laws in pursuing any kind of a goal or mission.

3.10 Wisdom

- What should one do and what not to,
- Intuitive intelligence analyzing the consequences of one's actions, and
- Ability to differentiate between right and a wrong approach.

3.11 Challenges

- The government will have a role to play. There may be more hardships and challenges to face given the active role of governments in the industry,
- Imposing a uniform code of ethics is an uphill task given the diversity of the workforce in Indian conditions,
- Even if such a uniform code is enforced, the fact that it will gain compliance from the workforce is questionable,
- Enforcing ethical practices is both time and money consuming, and
- Ethics is more than obeying the law.

3.12 Suggestions

- Corporations must have the policies to promote, if not require, peers to bring dilemmas to one another's attention,
- Corporations should have set rules and policies to resolve dilemmas and conflicts of interests,
- HR professionals need to be equipped with methods, tools, and equipment to evaluate one's performance on ethical standards already communicated to employees, and
- HR professionals and initiators should set paradigms of attaining progress with ethical attributes.

4. Conclusions

Any organizations efforts to raise ethical standards are noteworthy. They aim at increasing the accountability of governments and businesses and curbing corruption. If one is always to the right and leaves no loopholes, the task may become uphill, but at least at the end of the day one can answer one's own conscience and meet the eyes of those who should always profit – the masses. Unethical practices undermine good governance, distort public policy and lead to the wrong allocation and misutilization of wealth and damage the private sector. Most of all, though, unethical practices hurt those who can afford it the least. Managing it is possible only with the HR implications of those entire stake-holders in the integrity and transparency of that system. HR professionals by unification can raise ethical standards in the industry and in turn the government. Enforcing ethical values is about stamping out scandals, scams, and corruption.

"Corporation's only social responsibility is to make the most of the return so long as it stays within the purview of the game; in open and free competition without deception or fraud".

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Annexure-I

Organizational Blunders – Role of HR in Promoting Ethical Values

ORIGINALITY REPORT

2%

SIMILARITY INDEX

PRIMARY SOURCES

1	www.humanrightsinitiative.org Internet	18 words — 1%
2	Steven M. Mintz. "Aristotelian virtue and business ethics education", Journal of Business Ethics, 08/1996 Crossref	16 words — 1%
3	highered.mcgraw-hill.com Internet	12 words — < 1%
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Real Time Face Recognition in Raspberry Pi: A Guide to Proper Usage of the Available Resources

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Abstract

The use of facial recognition technology is gaining rapid popularity due to its appealing nature and possible use in various fields of life. Its integration into security systems as well as other aspects of technology such as robots has caused researchers around the globe to come up with numerous methods of recognition using different concepts. This paper is a part of a project aiming to develop a robot to be able to identify people in the daily environment. Hence, it makes use of the most readily available and student-friendly development board, the Raspberry Pi, for image processing. The goal of this paper is to compare few widely used methods of face detection and conclude as to which is better at the task.

Keywords: Cascades, Convolutional Neural Networks, Face Detection, Face Recognition, Raspberry Pi, Webcam

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1. Introduction

Face recognition is an interesting and important user identification method. In this world where technology makes huge advances every moment, use of face recognition technology has become quite popular. This field has increasingly attracted the attention of researchers throughout the years, witnessing a continuous rise in the number of people taking interest in this technology. Literature survey statistics show that research work in face recognition system is in its booming era, and in the past forty years, the research in this field has increased exponentially[1] (Figure 1).

Face recognition technology makes an attempt to simulate the ability of the human eye to be able to recognize faces. This is made possible by use of feature extraction method which allows the computer to identify and extract points of interest from a given image and compare it with a template to provide results. This project runs a few programs for face recognition using the Raspberry Pi and a webcam. The programs use different approaches, as mentioned above, one being the HAAR cascade classifier and the second being the Convolutional Neural Networks[2]. The cascade method is tested only for face detection as using it for recognition separately becomes quite impractical. Later on, it is combined with machine learning to allow the recognition tasks to be performed.

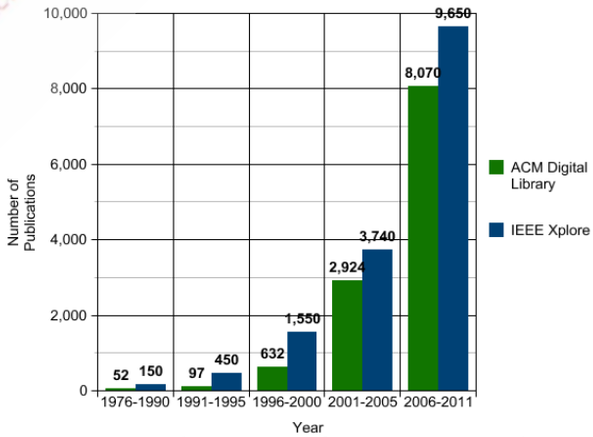

Figure 1. Research Statistics of Face Recognition[1].

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2. Face Detection

The first stage of this paper concentrates on face detection using Haar Cascade and Convolutional Neural Networks. The Haar cascade method is used for the detection of faces using a pretrained file available in.xml format. Suggested by Viola and Jones, the Haar is a feature based object classifier. This is a machine learning based approach that trains cascade functions from positive and negative images. In this case, the images with a face are positive and the ones without a face are negative. It extracts features from an image that are termed as Haar features (Figure 2). Each feature here forms a single value that is the difference between the sum of the pixels in the different regions within the enclosing window. This operation gives out a large number of features amounting up to 1,60,000+ for a detector with a base resolution of 24×24[3].

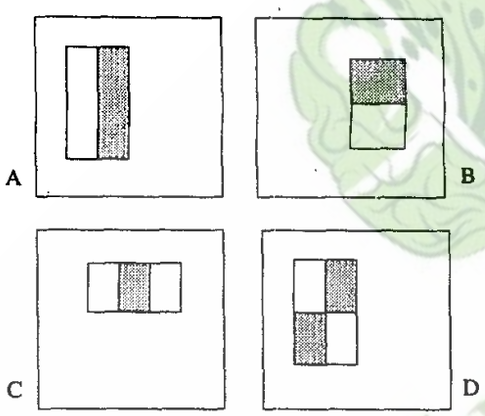

Figure 2. For example, the above squares featuring rectangles show features relative to the detection window. The sum of the pixels which lie within the white rectangles are subtracted from the sum of pixels in the grey rectangles. Nivo-rectangle features are shown in (A) and (B). Figure (1) shows a three-rectangle feature, and (D) a four-rectangle feature[3].

Hence, the cascade uses integral images in order to reduce the features that simplify calculations to operations involving just four pixels. This method when used for faces takes two major things into consideration, one being that, the region of eyes is darker than the region of nose and cheeks. The second being the fact that the eyes are darker than the nose bridge. The use of Adaboost helps with selection of the best features that are based on the error rate of each feature. Hence the final classifier is a weighted sum of each weak classifier picked out separately. The process is sped up by separating the 'face' and 'no-face' region to reduce calculations by allowing the computer to focus on the region that has higher chances of a face being present and ignoring the regions without a face.

A Convolutional neural network works differently compared to the Haar cascade. The CNN (Convolutional Neural Network) consists of three major parts. The convolution, pooling and the fully connected layer. Convolution is a filter applied like a sliding window to extract features from the given input. The filter shifts after each operation by an amount termed as strides. The filter, also known as the Kernel, covers the whole input by the given strides[4]. At each operation, the matrix multiplication of kernel and the current region of input are calculated.

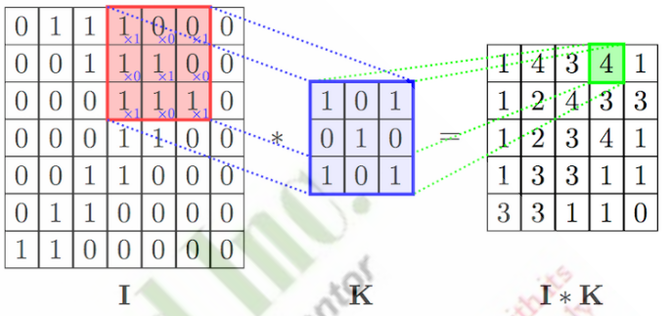

Figure 3. One single operation involving the Kernel (K) and Input (I) at a stage of the convolution to extract features.

When there is a discrepancy in the size of the input and kernel, same padding is used to maintain the size of the input. The ReLU (Rectifier Linear Unit) is used as an activator to increase the efficiency of the network. The next part is pooling, that reduces the dimensionality. The fully connected layer, as suggested by the name, makes sure that each neuron at input is connected to each neuron at output, strengthening the network and allowing better results.

3. Face Recognition

As the Haar cascades will have to be separately trained for each face to be able to recognize faces, their use for face recognition is quite unfeasible. Therefore, they are combined with a machine learning code to allow face recognition. The Haar method is used here to detect the face and then the algorithm teaches the device to recognize the face by extracting various features and marking them as unique[5].

The next method is the usage of dlib machine learning library to allow face detection and recognition. The method used here is the Histogram of Oriented Gradients method to detect faces (Figure 4). The program converts the given input into an image with arrows pointing from lighter to darker regions. It then proceeds to mark major points of interest to recognize the face[6]. The code itself uses very less memory and functions accurately when it comes to face detection.

The third method uses face recognition features that come as an additional library and run on the concepts of machine learning. It uses the eigen faces to train and recognize faces.

The fourth is a combination that uses Haar for face detection and fisher faces for face recognition.

The codes have been made according to the requirements and tweaked to best performance to the knowledge of the author.

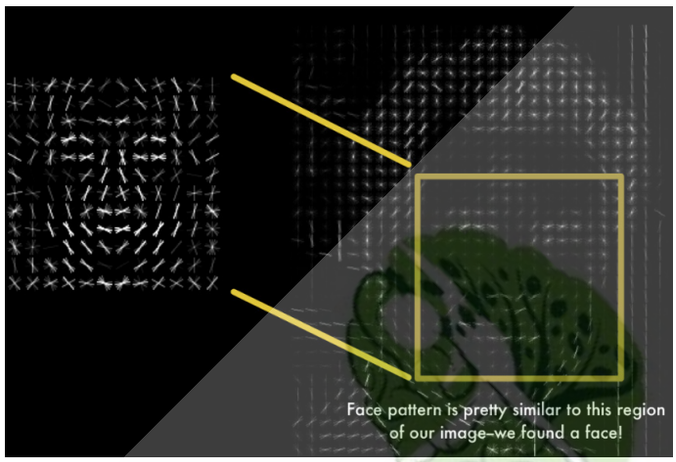

Figure 4. Histogram of oriented gradients.

4. Setup

The setup consists of the Raspberry Pi 3 Model B, and a Logitech C270 webcam (Figure 5). The Raspberry Pi board having the following specs: inbuilt Wi-Fi and Bluetooth module, 1GB Ram, 1.2 GHZ quad-core ARM Cortex A53v. The setup is quite affordable and allows experiments to be carried out without worrying about the cost effectiveness of the project. The Logitech camera allows 720 p video capture and has an inbuilt mike allowing it to serve more than one purpose. Rest of the setup is mostly software that has to be installed to be able to carry out the tests. The following were installed on the Raspberry Pi:

- Raspbian Operating System.
- Python 2.7.13.
- OpenCV 3.1.0 along with extra modules.
- Other dependencies such as numpy, scikitlearn, dlib, face_recognition etc.

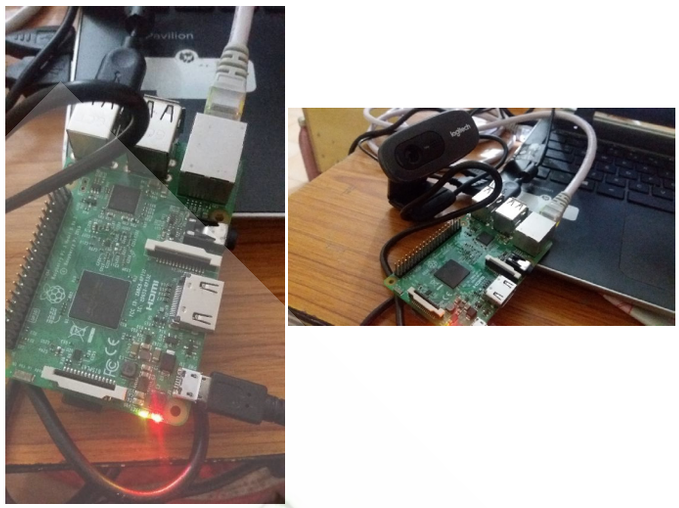

Figure 5. The setup made to run the experiments for facial detection and recognition. The first picture shows the Raspberry Pi board while the second picture shows the whole setup along with the webcam.

Three different codes were used for the experimentation process with a database of a hundred photos to train the system and preinstalled xml files for frontal face recognition. A few different lighting conditions were tested of which provide indifferent results.

5. Results

The results have been presented in terms of CPU usage by the system, accuracy of the method, time to load the program and the user experience. These factors play a major role when it comes to carrying out tasks in real time as the responsiveness of the system forms a criterion to determine the success of the system.

The frontal face detection using Haar cascade was able to detect faces quite smoothly in distance ranging from approximately 0.3 m to 3 m. The detection failed beyond that as it was unable to grab the features of the face beyond that point. The HOG detection algorithm was comparatively slow and took a lot of time to process the images giving about 15 seconds between the changes in each frame. This made the algorithm less responsive and quite the hassle to deal with. The fisherfaces algorithm was very responsive in detection but failed at a few places in identification, typically when more than one

Table 1. CPU Usage

Method	CPU usage in percentage	Accuracy percentage	Time to Load in seconds
Haar Cascade	75–80%	30%	2.34
HOG detection using PCA	25–30%	42%	15.62
Detection using Fisherfaces	60–70%	87%	12.54
Detection using Eigenfaces	60–70%	70%	31.85

person was to be identified. This was then improved by increasing the number of inputs provided during the training. The CPU usage and the other parameters during the programs are tabulated below:

Detection rates, as represented by the table are clearly highest for the fisherfaces detection. The accuracy increased to about 90% after increasing the number of inputs for training.

6. Conclusion

The experiment carried out gives an idea as to the method that would prove to be most effective for application in real world problems such as security systems, interactive environments or social robots. The fisherfaces method proves to be the most useful of all the four tested in the in process. Moreover, the equipment used is easily accessible and proves to be a good tool for experiment even with its own limitations.

There is further scope of improvement in the facial recognition techniques that are used here and can be brought in through code optimization or usage of various other facial recognition features available that have not been explored in this paper.

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Annexure-I

Real Time Face Recognition in Raspberry Pi: A Guide to Proper Usage of the Available Resources

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Design of Computer Vision System for Objects Recognition in Automation Industries

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Abstract

The field of machine vision has been developing at quick pace. The development in this field, dissimilar to most settled fields, has been both in expansiveness and profundity of ideas and procedures. Object recognition is widely used in the manufacturing industry for the purpose of inspection. Mechanically manufactured parts have recognition difficulties due to manufacturing process including machine malfunctioning, tool wear, and variations in raw material. This paper considers the problem of recognizing and classifying the objects of such parts. RGB images of different objects are used as an input. The Fourier descriptor technique is used for recognition of objects. Artificial Neural Network (ANN) is used for classification of different objects. These objects are kept in different orientations for invariant rotation, translation and scaling. Invariant example acknowledgment utilizing neural systems is an especially appealing methodology on account of its closeness with natural frameworks. This paper shows the effect of different network architecture and numbers of hidden nodes on the classification accuracy of objects.

Keyword: Artificial Neural Network, Computer Vision, Fourier Descriptors, Image Processing, Object Recognition

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Editorial Board Excerpt: *Initially at the Time of Submission (ToS) submitted paper had a 36% plagiarism and after rectification it was reduced to 11%, which is an accepted percentage for publication. The editorial board is of an observation that paper had a subsequent observation by the blind reviewer's which at a later stages had been rectified and amended by an author in various phases as and when required to do so. The reviewer's had in an initial stages comment with minor revision with a following remark which at a short span restructured by an author. The comments related to this manuscript is extremely noticeable both subject-wise and research wise by the reviewers during evaluation and further at blind review process too. All the comments had been shared at a variety of dates by the authors' in due course of time and same had been integrated by the author in addition. By and large all the editorial and reviewer's comments had been incorporated in a paper at the end and further the paper had been earmarked and decided under "View Point" category as its highlights and emphasize the work in relation to Design of Computer Vision System for Objects Recognition vis-à-vis automation industries.*

1. Introduction

Object recognition is an amazing human feat. An attempt to develop a machine to mimic human capability is the starting point of object recognition. The term 'recognition' has been used to refer to many different visual abilities, including identification, categorization, and discrimination. Humans effortlessly recognize objects within a fraction of second. People have an exceptional capacity to figure out what things are by essentially taking a gander at them. Unlike computers, humans can easily recognize a face, understand spoken words, and distinguish different styles of handwriting. An attempt to develop a machine to mimic human capability is the starting point of object recognition. The question acknowledgment is a standout amongst the most principal issues of picture handling[18]. Due to the significant variations exhibited by the diversified real world patterns, it is a testing issue against the conflicting brightening, fractional impediment, changing foundation and moving perspective. Programmed (machine) acknowledgment, depiction, arrangement, and gathering of examples are imperative issues in an assortment of designing and logical controls. Invariant example acknowledgment utilizing neural systems is an especially appealing methodology on account of its closeness with natural frameworks[6]. Protest acknowledgment should be possible by utilizing a neural

*Author for correspondence

framework that consolidates parts of human question acknowledgment, together with established picture preparing strategies[5]. Invariance via preparing is accomplished by showing the system a predefined set of examples under various changes, for example, revolution, translation etc. Object recognition is widely used in the manufacturing industry for the purpose of inspection.

2. Literature Review

Fourier Descriptors (FDs) were at first proposed in 1960[2]. FDs are among the most well known shape depiction methods for vision and example acknowledgment applications. FDs allude to a class of techniques, not a solitary strategy, since there are a wide range of manners by which the FDs of a shape can be characterized. Chellappa and Wallace[1,16] used Fourier descriptor for the recognition of objects. The FD is gotten by applying a Fourier change on a shape signature. Another Fourier-based descriptor for the portrayal of the shapes for recovery reasons for existing is presented[11]. This descriptor consolidated the advantages of the wavelet change and Fourier change. Along these lines the Fourier descriptors could be exhibited in different scales, which enhance the shape recovery exactness of the regularly utilized Fourier descriptors. A novel Fourier descriptor (FD) was proposed which was derived from Chord-Length Functions (CLF) obtained through equal-arc-length partitions of a contour[17]. The Fourier descriptor is also suggested as a matching method which was invariant against rotation, expansion, contraction, and translation for object recognition[4]. The structure and weights of ANN were tuned with utilization of transformative idea. In this work pixel-by-pixel shine preparing was embraced with utilization of ANN worldview. A structure for question portrayal in view of fluffy divided charts is discussed[12]. A cross breed approach for picture division in light of the thresholding by fluffy c-implies is exhibited (THFCM) calculation for picture division[8]. A category-independent shape prior for object segmentation introduced[10]. Background elimination technique is used to identify the object[3]. A novel and fast interactive image segmentation algorithm was proposed for use on mobile phones[15]. A disconnected mark acknowledgment and confirmation framework is displayed which depends on minute invariant strategy and simulated neural system (ANN)[14]. Six different FDs were compared which are derived from different shape signatures[20]. An exploratory correlation of shape order techniques was done in view of autoregressive demonstrating and Fourier descriptors of shut forms[9]. Outline shapes from non-blocked 2D objects pivoted, scaled, and interpreted in 3D space were extricated[7]. Another strategy was displayed to separate face from non-confront pictures utilizing Fourier descriptors.

3. Steps for Object-Recognition Systems

Figure 1 shows a block diagram of pattern recognition system.

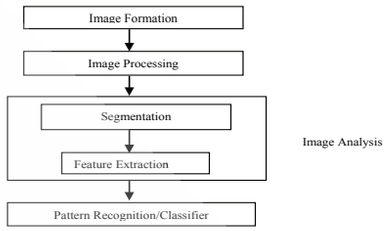

Figure 1. Pattern recognition system.

4. Proposed Method

The overall goal of this paper is to propose algorithms for feature based recognition of 2D parts from intensity images. Most present computer vision systems are custom-designed systems, which can only handle a specific application. This is not surprising, since different applications have different geometry, different reflectance properties of the parts.

5. Image formation

Images are captured with various rotations, scaling and translation. Three objects are taken for classification. Total 80 images of all objects are taken to develop a data set. Figure 2 shows different images of mechanical objects.

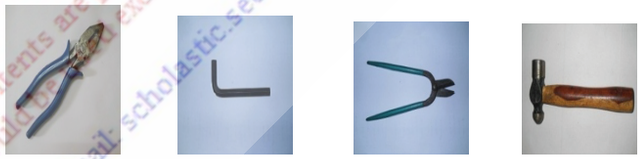

Figure 2. Different images of mechanical objects.

6. Image Processing

For image processing median filter is used. In this filter, value of each pixel is replaced by the median of all the values in the local neighborhood. 3*3 averaging kernel often used in median filtering. The dimension of neighborhood N controls the amount of filtering. Large filter means greater smoothing but loss in image detail results. Figure 3 shows the 3 × 3 mask.

(I-1,J+1)	(I,J+1)	(I+1,J+1)
(I-1,J)	(I,J)	(I+1,J)
(I-1,J-1)	(I, J-1)	(I+1,J-1)

Figure 3. The 3 × 3 mask.

7. Enhanced Images

Figure 4 shows the enhanced image of one object using median filter.

Figure 4. Enhanced image of one object.

8. Image Segmentation

For segmentation of images Otsu method is used[13]. Threshold is found that limits the intra class difference that is defined as a variance of weighted sum of two classes. Figure 5 shows the segmented image of one object.

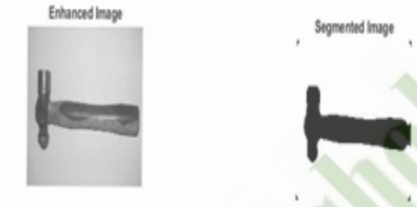

Figure 5. Segmented image of one object.

9. Features Extraction

The proposed shape descriptor is inferred by applying two-dimensional Fourier change on a polar-raster inspected shape picture. Because 1D Fourier descriptor cannot capture shape interior content this is important for shape discrimination. The knowledge of shape boundary is required for 1D Fourier descriptor. The obtained shape descriptor is application free and hearty. It has been demonstrated that shape portrayal utilizing FD beats numerous other form shape descriptors. It catches shape better highlights in both spiral and roundabout bearings. The ghastly highlights of a picture are typically briefer than the highlights extricated from spatial area. Turn invariance of a shape is critical in light of the fact that comparable shapes can be under various introductions[19].

The persistent and discrete 2-D Fourier change of a shape picture f (x, y) (0<=x<M, 0<=y<N) are given by Equation (1).

$$F(u,v) == \sum_{x=0}^{M-1}\sum_{y=0}^{N-1} f(x,y)\times \exp\left[-j2\pi ux/M + vy/N\right] \quad (1)$$

10. Effect of Changing Network Architecture

In order to observe the effects of different network architecture, numbers of hidden nodes taken are 5, 10, 20, and 30. The learning rate is set to 0.1, and force term utilized is 0.2. Table 1 shows the variation of overall accuracy with different network architectures. As can be seen from Table 1 20 hidden nodes network structure produced the best results at 1000 iterations (90.5 % accuracy based on overall accuracy and 87.50% based on kappa coefficient). So 20 hidden nodes are selected for further analysis. One important finding is that there is not any considerable change in the network performances after 1000 iterations. The use of 30 hidden nodes did not have any critical impact on the system's execution; in fact it slightly produces worse results.

Table 1. Effect of hidden nodes on overall accuracy and kappa accuracy for data

Number of Iterations (N)	Network Structure							
	52-5-4		52-10-4		52-20-4		52-30-4	
N	(O)%	(K)%	(O)%	(K)%	(O)%	(K)%	(O)%	(K)%
500	86	82.5	88	85	90	87.5	90	87.5
1000	87	83.5	89	86	90.5	87.5	90	87.5
1500	86	82.5	88	85	90	87.5	88	85
2000	86	82.5	88	85	88	85	88	85
2500	86	82.5	88	85	88	85	88	85
3000	86	82.5	88	85	88	85	88	85

11. Testing of Images

After calculating the variation of overall accuracy with different network architectures and the results of different configuration of the sample size of 40 testing images are taken. Table 2 shows the results of the confusion matrix obtained on these testing samples of objects.

Table 2. The confusion matrix of testing samples of objects

=== Confusion Matrix ===

	a	b	c	d	<-- classified as
a	9	1	0	0	a = Object1
b	1	9	0	0	b = Object2
c	0	0	10	0	c = Object3
d	0	0	0	10	d = Object4

12. Conclusion

Classification accuracy is affected by the learning rate and momentum term. ANN is computationally demanding and slow. 20 hidden nodes network structure produced the best results at 1000 iterations (90.5 % accuracy based on overall accuracy and 87.50% based on kappa coefficient). So 20 hidden nodes are selected for further analysis. The learning rate is set to 0.1, and momentum term used is 0.2 gives the best results architectures. The confusion matrix also shows the accuracy of the classifier.

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Annexure-I

Design of Computer Vision System for Objects Recognition in Automation Industries

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DOI: 10.18311/gjeis/2018/20660
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Global Journal of Enterprise Information System

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Skill Development Mission in India- A Step towards Governance and Effectiveness

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Abstract

Skill development plays a significant role in contributing to the growth process of a country. It has more significance in particular to a fast growing economy like India. The demographic transition makes it imperative to generate employment opportunities for more than 12 million youths adding to working age population every year. According to the reports available, it is estimated that during the period of 2005-2012, only 2.7 million net additional jobs were created in India. Skill development is an essential requirement to develop youth and enable them to engage in useful vocations in the future. In India, the governments have been making policies and providing necessary support for skill development through various schemes not only by providing training and managerial skills but also the financial assistance through various channels. However, the success rate of the initiatives and pace of growth of skill development have not been that much encouraging in the past. The present government has taken this mission altogether in a different dimension by expanding the facilities and supports in a big way. This paper presents the present status of the programmes being implemented by the government of India for enthusing skill development in true spirit through various schemes. A separate body to monitor and regulate the Skill development Mission has been constituted known as National Skill Development Corporation (NSDC).

Keywords: Demographic Transition, NSDC, Skill Development

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Editorial Board Excerpt: *At the Time of Submission (ToS) submitted paper had a 22% plagiarism which is a clue as far as originality report is concerned and falls under an accepted percentage for publication. The editorial board is of an inspection that manuscript had a subsequent surveillance by the blind reviewer's which at a in a while stages had been rectified and amended by an author (Satendra Kumar Yadav) in a variety of phases as and when obligatory to do as a consequence. The reviewer's had in an initial stages comment with minor revision with a following remark which at a short span restructured by an author. The comments related to references, abstract and body text is noticeable both subject-wise and research wise by the reviewers during evaluation and further at blind review process too. All the comments had been collective at a variety of dates by the authors' in due course of time and same had been integrated by the author in addition. By and large all the editorial and reviewer's comments had been incorporated in a paper at the end and further the paper had been earmarked and decided under* ***"View Point"*** *class as its things to see and underline the work in relation to skill development mission in an Indian perspectives.*

1. Introduction

"Education, vocational training and lifelong learning are central pillars of employability, employment of workers and sustainable enterprise development".

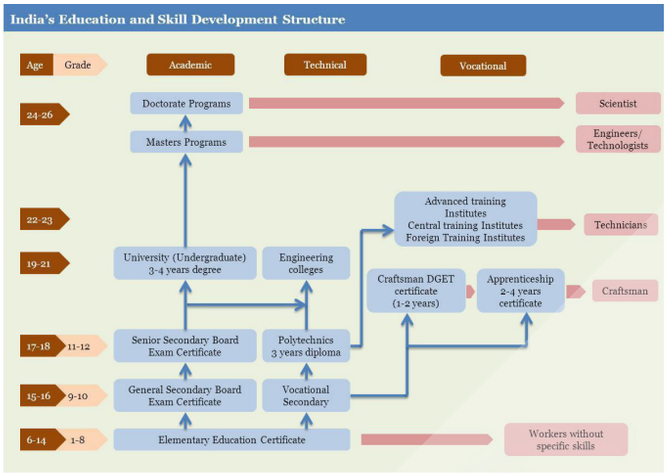
- International Labour Organisation

The schemes that focus development of Skill India Mission include- Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Pradhan Mantri Kaushal Kendras (PMKK) and UDAAN suggest some ways to hasten the process of exploiting the demographic advantages which the India is having internationally. To fasten the venture of skilling India proper convergence, infrastructure, professional and experienced faculty and spatial justice in terms of location of facilities have been focused as the strategy for empowering India through skilling. Skill India a flagship scheme of central government has completed more than two years of its implementation. The scheme aims to fasten the venture of skilling India with proper convergence, infrastructure, experienced learning support and spatial justice in terms of location of facilities for empowering India through skilling.

1.1 Structure of Skill Development in India

The skill development structure in India is very extensive and diverse that provides skills at different levels to heterogeneous population. Skill development can be broadly divided into Education and Vocational Training. The exhibit below presents the framework of Skill Development in India.

*Author for correspondence



Source: World Bank.

Figure 1. India's Education and Skill Development Structure.

1.2 Present Status

Skill Development is one of the very ambitious and crucial schemes of Government of India at present. At present, only 2.3 per cent work force is engaged in formal skill training programs in India as compared to 96% in South Korea, 80% in Japan, 75% in Germany, 68% in the UK, and 52% in USA. This calls for greater amount of efforts to promote skill development schemes in the country at a very large scale. The government has another mission "make in India", the success of this initiative also depends, to a greater extent, on availability of skilled workforce in the country.

2. Objectives of the Study

The primary objective of this study is to understand and assess the performance of some of the selected schemes that are implemented in the current model of skill development. Also, to study the implementation process of these schemes in the context of fundamental principles of skill development mission implementation, supervision and Control. This study has been carried out in conventional manner to examine and findings of the skill development program after completion of two years.

2.1 Research Methodology

The study is based on the secondary data which is sourced from various websites, journals, magazines, articles and media reports. It is an exploratory research. Descriptive research design is employed which is appropriate and matches with the objectives of the study.

3. Requirements of Skilled Workforce by 2022

According to a study conducted by the National Skill Development Corporation of India (NSDC) for the period of 2010-2014, there is an additional requirement of 109.73 million skilled workforces by 2022 across 24 key sectors[8].

In India, the base of knowledge economy has been increasing rapidly, there would be requirements for the highly skilled youths in sectors like IT/ITes, financial services, Bio-technology, Pharmaceuticals and Healthcare. Further, with the government initiatives like, 'Make in India' mission, the demand for highly skilled workforce will further boost.

4. Skill and Employment

Labour Bureau Report for the year 2014 while reflecting on unemployment and employment situation observed that present size of India's formally skilled workforce is just 2 per cent where as in smaller countries like Japan, and South Korea the skilled workforce size is 80 per cent and 96 per cent respectively. According to report on 5th annual employment-unemployment Survey 2015-16 carried out by Labour Bureau, more than 58% unemployed graduates and more than 62% of unemployed post-graduates are found for non availability of job matching skills at national level, as the main reason for their unemployment. The deficiency of skilled workforce is due to the lack of a formal vocational education framework, with variation in quality, inadequate skills training capacity, high school dropout rates and negative perception towards skill development.

Above study indicates that even after various steps initiated to meet the skilled workforce requirement in the country, the skilled workforce is grossly inadequate to fulfill national and international demand of skilled workforce.

5. Schemes and Initiatives through NSDC

5.1 Pradhan Mantri Kaushal Vikas Yojana

PMKVY is the flagship result-based skill development scheme of the Ministry of Skill Development and Entrepreneurship (MSDE). The objective of this scheme is to enable and mobilize a large number of youths to take up skill training to become employable and earn their livelihood. This Scheme was launched on 15 July, 2015, on the occasion of World Youth Skills Day. After pilot project for one year, the government approved the Scheme for another 4 years (2016-2020) to skill 10 million youths of the country with a budget

outlay of Rs 12,000 crores covering 2.4 million youth. Another feature of the scheme is that it focuses class 10th and 12th dropouts. There are two types of schemes as under.

- Centrally Sponsored Centrally Managed (CSCM): 75% of the PMKVY (2016-2020) funds shall be available to MSDE for skilling through National Skill Development Corporation (NSDC).
- Centrally Sponsored State Managed (CSSM): 25% of the funds of PMKVY 2.0 shall be allocated to the States.

The Centrally Sponsored Centrally Managed (CSCM) has three components as presented below:

Short Term Training: The Short Term Training provided at Training Centers (TCs) of PMKVY is expected to benefit youths who are either unemployed or college/school dropouts. Apart from providing training according to the National Skills Qualification Framework (NSQF), TCs shall also impart training in digital and financial literacy and soft Skills. Training duration depends on job role. After successful completion of the training programme Training Partners (TPs) will provide placement assistance to its candidates. Government bears full fees of training and assessment.

Recognition of Prior Learning: Candidates with prior skills or learning experience shall be assessed and certified under this component of the PMKVY. To align the skills of the unregulated manpower of the nation to the NSQF is the main objective of RPL. Project Implementing Agencies (PIAs), such as Sector Skill Councils (SSCs) or any other agencies designated by MSDE/ NSDC, shall be incentivized to implement RPL projects. PIAs may offer Bridge Courses to RPL candidates to minimize skill gaps.

Special Projects: The Special Projects are the important components of PMKVY that will facilitate trainings in premises of Government bodies and/or special areas, corporate bodies and trainings in special job roles. The terms and conditions of Special Projects are different from Short Term Training. A proposing agency can be institutions of State/central Government(s)/ Autonomous entity or any other equivalent body who is interested in providing training to Candidates.

5.1.1 Role of State Skill Development Missions

SSDM shall perform the following processes to support the implementation and monitoring of PMKVY

a. Training Provider Empanelment
b. Training Provider Network Management
   i. Training Provider Operations Support (QA and non QA)
   ii. Monitoring and Evaluation through MIS
   iii. Stakeholder Management

State Governments shall undertake the training programs through their respective State Skill Development Missions (SSDMs). Under CSSM, states will have to recruit/ depute a dedicated team of up-to 5 persons to oversee the implementation of the scheme.

5.1.2 Highlights of the PMKVY Skill Training

- Skill development training would be based on recent studies conducted by the NSDC for the duration 2013-17.
- The target of skilling development will be associated with central Government's programmes like, Make in India, Digital India, and National Solar Mission.
- Primary focus of skill development training is for the first time entrants to the labour market and dropouts Class 10th and 12th.

5.1.3 Implementation Scheme

- PMKVY would be implementing training partners of NSDC. Currently NSDC has over 2300 centers and187 training partners.
- Training providers, affiliated with Government would also be used for training under PMKVY.
- Training under PMKVY would include personal grooming, soft skills, behavioral change for cleanliness and good work ethics.
- Governments and skill councils would monitor skill training under PMKVY.

5.1.4 Present Status

Ministry of Skill Development and Entrepreneurship (MSDE) set up Sharada Prasad Committee to review the performance of skill councils. The committee found that NSDC trained 1.8 million individuals which is more than its target.1.2 million youths. They were certified by the council during phase I. PMKVY phase II was launched in the following year with a target to train 10 million individuals by 2020. Out of which, 4 million individuals were certified for the RPL and 6 million got fresh training. Committee reported that the targets of the schemes were too high to attain. Committee also reported that NSDC and its partners provided skill training to around 6 lakh youths till September 1, 2017. Only 72858 trained individuals were placed which is 18% of trained youths. Committee observed that PMKVY focused mainly on the short-term skill development courses that resulted in low rate of placement.

5.2 Pradhan Mantri Kaushal Kendras (PMKK)

Pradhan Mantri Kaushal Kendras (PMKK), the model skill centers will be set up in every district of the country, ensuring coverage of all the parliamentary constituencies.

5.2.1 Salient Features of PMKK

- State of the art infrastructure
- PMKK specific External and Internal Branding
- Smart Classroom- Every PMKK is required to have at least one classroom equipped with audio-visual facilities to conduct virtual trainings, interactive sessions and industry seminars/webinars.
- Mandatory training in the manufacturing trades
- Model course curriculum and trainers as per SSC specifications.

5.2.2 Present Status

- 36 Training Providers (TPs) have been shortlisted for setting up of PMKK in 463 PMKKs in 443 districts (341 Parliamentary constituencies) of India
- PMKK Phase 1: 269 districts were allocated to 24 training providers (TP)
- PMKK Phase 2: 194 PMKKs in 174 districts were allocated to 22 TPs (10 TPs have been selected in both Phase 1 and Phase 2)
- As of February 7, 2017, 78 PMKKs have been set up and location for setting up of PMKK has been finalized for 197 additional PMKKs
- Out of 78 PMKKs, 62 PMKKs have been inaugurated by the Hon'ble MPs
- Target of 1,72,360 has been allocated under PMKVY II to 59 PMKKs
- Out of the 341 PCs allocated for setting up of PMKK, TPs have been able to meet the MP's in 254 constituencies
- Based upon roll out plan received from the TPs, 130-140 PMKKs shall be set up by March 2017

5.2.3 Way Forward

The whole concept is unique where quality of training has been a focal point. Further wider availability of training centers across the district in the form of hub is another unique feature of this mission. Each hub shall operate multiple spokes to create access to skill development training and provide localized delivery. The Hub would support the spokes in terms of quality control, training of trainers, training content, internal assessments, mobilization, operations and placement linkages.

5.3 Udaan

National Skill Development Corporation (NSDC) will implement this scheme which is meant for the youths of Jammu and Kashmir. Udaan is an initiative for diploma engineers, graduates and post-graduates youth of Jammu and Kashmir (J&K). The objective of the scheme is to provide training and job opportunities to the youths of J&K. Udaan will also focus on providing exposure to corporate sector of India towards talent pool available in J&K. The target of scheme was to train 40,000 youths in J&K over a period of 5 year.

As on 30th November, 2016- 84 leading corporate across different sectors like Retail, IT, ITES, Manufacturing, BFSI, Auto, Real Estate, Infrastructure, and Textiles etc. have committed to train 19, 245 youth by 31st March, 2017. 84 corporate like Titan, Schneider, TCS, Infosys, Accenture, KPMG, Indian Overseas Bank, Yes Bank, Apollo Medskills, Frost and Sullivan, Bajaj Allianz, Tata Motors, Genpact, Cognizant etc. have so far taken part in 113 Udaan Mega selection drives, selecting 24,312 candidates for training under different sectors in current year. Udaan Mega Drives act as a platform where multiple corporate go together to mobilize youth of J&K for Udaan training program across the state. As on 30th November 2016, 24,312 candidates have joined training of which 5,480 are currently undergoing training in 18 cities across India. 17,111 candidates have completed training of which 9,632 candidates have been offered job in various sectors. To promote this scheme, there has been rigorous marketing campaign in support of state government of J&K for out reaching to the renowned corporate sector and active involvement of local development agencies for smooth implementation of the scheme.

5.4 The STAR Scheme

Standards Training Assessment and Reward (STAR) is another program that was announced in the Union Budget 2013-14 with an aim to encourage skill development training by providing monetary rewards to individuals after completion of skill development training. The objectives of STAR are:

- To improve productivity of existing manpower and align the training and certification to the market needs of country.
- To provide monetary incentives to increase productivity and employability of youths. Under this scheme, an average of Rs.10000 per individual will be provided as reward after completion of training.
- 10 lakh youths will be benefited which will cost at an approximate of Rs. 1,000 Crores.

This scheme will be implemented through NSDC and various Training Providers, Sector Skill Councils and Assessment Agencies. STAR targets to provide skill development training to 80 percent of the entry-level workforce required in various sectors.

The STAR Scheme envisages Recognition of Prior Learning (RPL) by providing an opportunity for enhancing skills and knowledge of existing workforce. It is expected that the industry will proactively nominate their employees to undertake courses aligned to the national occupational standards to increase productivity of the existing workforce.

Table 1. STAR scheme snapshot

SSCs affiliated to STAR	20
Job Roles	287
Affiliated Training Partners	Total – 1,232
Training Centres	6,402
Assessment Agencies	50
Assessors	1,566
Total Enrolments	12,18,892
Training Completed	8,05,928
Total Certified	1,29,978

Source: NSDC

5.4.1 Achievements

The STAR scheme was first launched on a pilot basis on 16th August, 2013, where 390 candidates were trained under 8 Sector Skill Councils on courses aligned to 15 different job roles (national occupational standards). Out of the 390 candidates who were part of the pilot phase, 293 cleared the assessment. The Scheme was subsequently rolled out from September 16, 2013 and currently there are 12,18,892 candidates already enrolled under the STAR Scheme. 1,232 training organizations (NSDC affiliated partners, Government affiliated partners and other private training providers) are engaged under the Scheme covering around 6,402 training centres across the country. 50 independent assessment agencies are affiliated with various Sector Skill Councils (SSC). They conducted assessments through individual assessors. Assessment results of 4,12,354 candidates were received as of 13th June, 2014, out of which 3,04,578 have cleared assessment.

5.5 Pradhan Mantri Yuva Yojana (Scheme Related To Entrepreneurship)

The Scheme aims at creating an enabling eco-system for entrepreneurship promotion among youth through entrepreneurship education and training, advocacy, easy access to entrepreneurship support network and promotion of social entrepreneurship. The scheme Pradhan Mantri Yuva Udyamita Vikas Abhiyan (YUVA) Yojana was launched by hon'ble Minister, MSDE on 09-11-2016.

The Entrepreneurship Education Programmes under the Scheme will be rolled out in early part of the next financial year.

The specific objectives of the scheme are as follows:

- To Educate early stage entrepreneurs.
- To connect entrepreneurs with funding and business services, networks of peers, mentors and incubators.
- Entrepreneurs will be supported through Entrepreneurship Hubs (E-Hubs).
- PMYY will be implemented through Public and Private Partnership (PPP) mode.

5.5.1 Outcome

The Scheme involves an estimated expenditure of Rs. 499.94 crore and is likely to create approximately 30,000 start-ups over five years resulting into creation of approximately 2, 60,000 direct and indirect jobs (NSDC Website).

Besides, the Scheme would witness setting up of a total of 360 Social Enterprises. In the process, a strong Pool of Mentors' and 'Faculty Facilitators' will be created under the Scheme. The scheme has full-fledged mechanism for monitoring at different levels through a Project steering Committee.

5.5.2 Technical Knowledge Partner

An important aspect of this scheme is availability of Technical Partner. The Wadhwani Foundation, a California base, not for profit organisation is the technical knowledge partner for implementation of the scheme.

The Wadhwani group will be contributing approximately 10% of the total cost of scheme, in the form of right to access (via a link) and use the Learning Management System and entrepreneurship training content for different beneficiaries; participation of Institutes of Higher Learning in its annual Event; grant of access to the Faculty to an electronic version of the Handbook for Entrepreneurship Campus Eco-system Development and need-based advisory/training/consultancy services towards implementation of the Scheme.

5.5.3 Entrepreneurship Courses

In addition to the above programs, there are different types of entrepreneurship courses launched by the government for the upcoming youth entrepreneurs. Some of them are described hereunder;

- **Institutes of Higher Learning**: The six levels, each of six months' semester, map to 6 Phases in the recommended journey for learning entrepreneurship which focus on Orientation, Discover, Practice, Start-up, Growth and Expansion.

The first three levels of entrepreneurial learning will be compulsory for every student enrolled. Besides, selected Institutes of Higher Learning will be encouraged to offer Courses on Social Entrepreneurship of 15 hours' duration.

- **Schools (10+2):** The students enrolled in schools (10+2) will be offered two Courses, (i) Foundation Course: Exploring Entrepreneurship and (ii) Advanced Course: Getting ready to start a venture, each of 15 hours' duration.
- **Industrial Training Institutes:** the students enrolled in ITIs will also be offered the same courses as at school level but with duration of 3 months (15 hours) and 6 months (60 hours) respectively.
- **Entrepreneurship Development Centers**: The 30 hour course will be spread over 3 months time, beside short-duration Modular Courses for specific business skills.

The training programs will be implemented in close co-ordination with the State Governments through a Network of Entrepreneurship Resource and Co-ordination Hubs. This network will have National Entrepreneurship Resource and Co-ordination Hub (National E-Hub) where an apex body has been established at NIESBUD, NOIDA. Further, there will be 5 Regional Entrepreneurship Resource and Co-ordination Hubs (Regional E-Hubs) at NOIDA, Hyderabad, Kolkata, Ahmedabad and Guwahati and 50 Nodal Entrepreneurship Resource and Co-ordination Hubs (Nodal E-Hubs) set-up throughout the country. The Institutions for establishing 5 Regional E-Hubs have been identified. A total of 9 Nodal E-Hubs will be set-up during first year of the Scheme.

5.5.4 *The Entrepreneurship Hubs at Institution Level*

The entrepreneurship education programs will be delivered through establishing 3,050 Entrepreneurship Hubs at selected/identified existing institutions based on pre-defined criteria: 2200 E-Hubs in Institutes of Higher Learning; 300 in Schools; 500 ITIs and 50 EDCs.

A total of 260 Project Institutes have been enrolled under the Scheme so far. Besides, the process of empanelling about 140 Government ITIs, in consultation with the DGT, there are about 100 late applications under different categories, which are under process.

5.5.5 *Financial Assistance to Project Institutes*

All the Government Project Institutes and Entrepreneurship Development Centres will be given financial assistance for a maximum amount of Rs.3 lac for setting up infrastructure under the Scheme besides annual maintenance charges in respect of the equipment. All the empanelled Project Institutes will be given financial assistance towards training of identified faculty facilitators under the Scheme and Honorarium for Faculty Facilitators.

6. Findings

The following are the findings about the skill development projects being implemented for the youth in India.

Ministry of Skill Development and Entrepreneurship has trained 1.17 crore people under its program during last 2 years (2015-17).

- More than 28 lakhs trained under Pradhan Mantri Kaushal Vikas Yojana.
- Rs. 12000 crores allocated by Central Government Ministry for their flagship scheme.
- 600% increase in candidates trained in 2017 compared to 2014 under NSDC's short term fee based Skill Development Model.
- 200 PM Kaushal Kendra have been opened to provide quality training.
- The plan is to provide 1 centre at each district thus 556 centres to be established across the country.
- An amount of more than Rs.93 crore is committed under Corporate Social Responsibility (CSR) for skill development in 2016-17.
- According to the reports, only 5% individuals got placed after skill development training under the Pradhan Mantri Kaushal Vikas Yojana (PMKVY).
- According to official information, only eight youths have received certificates till now.
- The efforts made so far have been tremendous but the results and progress is not that encouraging. There is an important observation which says, "It's very logical to ask training partners to give the NSDC reports on their placement record, especially those training partners, parent or subsidiaries companies of which are running various business activities. They can be asked how many candidates they themselves have employed out of the total trained candidates from their own institutes," says Colonel NB Saxena (retd), former executive technical member of the Construction Skill Development Council.

7. Recommendations

- The Output: Input ratio of skilled workforce has increased but not to a desired level.
- The strategies of skill development and growth calls for multidimensional approach. In this regards, one can take reference of East Asian model where quality of Manpower is hard to match.
- There has to extra focus towards quality manpower in the manner that manufacturers are also attracted to India.
- We have excellent engineers, executives and management people but it is a top heavy Trickle down approach which does not work effectively in the Indian concept.
- There is a need to enhance the skill of every Indian.

8. Conclusion

No doubt, skill development is ambitious program of Government of India. Currently India is facing a severe shortage of skilled workforce. Only 2.3% workforce of India is formally skilled compared to 96% in South Korea, 80% in Japan, 75% in Germany, 68% in the UK and52% in USA. Therefore, there is a dire need to impart skills in more efficient way. Similarly success of many initiatives like Make-in-India depends on availability of the requisite skilled manpower. It is the high time that Skill India movement needs concerted attention to achieve desired goals. NSDC overshot its target by training 1.8 million people, and certified another 1.2 million. The second phase or PMKVY 2.0 was launched the following year, with a budget of Rs 12,000 crore to skill 10 million youth by 2020. Of those, 6 million were to be provided fresh training and 4 million were to be certified for the RPL programme. However, no evaluation was conducted of PMKVY 2015 (the first version of the scheme) to find out the outcomes of the scheme if this program was serving the twin purposes of providing employment to youth and meeting the skill needs of the industry before launching such an ambitious scheme.

Pradhan Mantri Kaushal Kendra (PMKK) is envisioned to evolve into a hub for delivery of skill development training having a network of training spokes in the district. Each hub shall operate multiple spokes to create access to skill development training and provide localized delivery. The Hub would support the spokes in terms of quality control, training of trainers, training content, internal assessments, mobilization, operations and placement linkages.

The need therefore arises to find out the reasons that are responsible for not getting better responses from the beneficiaries of these programs. There may be several reasons like lack of interest and enthusiasm among the youth to take up entrepreneurial vocations, inadequate arrangements for quality training at different levels, lack of innovative projects and ventures, non availability of financial assistance to take up the projects etc. The areas that need better management should be prioritized to make this program result oriented. A pragmatic approach is called for. Right from the independence, there has been series of programs implemented to promote self employment but the desired results could not be achieved due to faulty implementation and thereby large scale misappropriations of the assistance and subsidies extended for the success of these programs. However, the present program has been implemented on different footings with proper arrangements of training and infrastructure, suitability of projects and provision of required finance. Therefore, all needed efforts should be taken up at different levels for the success of these programs.

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Annexure-I

Skill Development Mission in India- A step towards Governance and Effectiveness

ORIGINALITY REPORT

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Empirical Study of Cyber Crimes in India using Data Analytics

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Abstract

The progression of technology has prepared man reliant on Internet for all his needs. Internet has given man trouble-free entrée to the whole thing while sitting at one position. Social networking, online shopping, storing data, gaming, online studying, online jobs, every promising thing that man can imagine of can be made through the means of internet. Internet is used in approximately every bubble. With the development of the internet and its associated payback also developed the thought of cyber crimes. Computer crime or cyber-crime in India has been embryonic hastily. Cyber crimes can be distinct as the prohibited acts where the computer is used moreover as an instrument or an idea or in assistance. The expression is a wide-ranging term that covers crimes like phishing, credit card frauds, bank robbery, illegal downloading, industrial espionage, child pornography, kidnapping children via chat rooms, scams, cyber terrorism, creation and/or distribution of viruses, Spam and many more that are addressed by the Information Technology Act, 2000.

Keywords: Analytics, Computers, Crime, Cyber, Data

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1. Introduction

In modern life, cybercrime is an evil having its origin in the growing dependence on computers. In a day and age when everything from microwave ovens, refrigerators to nuclear power plants is being operated and controlled by mouse clicks, the crimes have started taking place even in the cyber space[4]. As there is a sharp increase in the number of mobile and internet user penetration in the country, the cybercrime is also rising proportionately. The exploitation and abuse of computers and IT platforms have given birth to this new age crimes which includes tampering of digital documents, damage or loss to computer resource/utility, obscene publication or transmission in electronic form, hacking, ignorance in compliances of orders of regulatory authorities, un-authorised access/attempt to access protected computer system/network, frauds related to Digital Signature Certificate, cybersquatting, phishing attack, email spoofing, cyber defamation including sending threatening e-mails[3].

During the year 2011 and 2015, more than 32,000 cases of crimes were reported in India and more than 24,000 cases were registered under the IT Act, various sections of Indian Penal Code (IPC) and State Level Legislations (SLL)[1].

There are multiple causes of cybercrime such as revenge, settling scores, greed, extortion, disrepute, including pranks. India being a large country with huge population and IT savvy citizens with high IT penetration rate. According to Mark Rutte, the annual cost of cybercrime to the global economy is more than $4 billion.

2. Research Objectives

The main objectives of the research are to analyse the cybercrimes in India with reference to the authentic data available. The data thus obtained has been standardised, studied and exhaustively analysed to study the following using analytical tools:

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i State-wise analysis and comparison of cybercrimes in India
ii Category wise analysis of various Cyber Crimes
iii State and Crime-wise Analysis
   a. Revenge/Settling Score
   b. Greed/Settling Score
   c. Extortion
   d. Prank
   e. Fraud/Illegal Gain
   f. Eve Teasing
iv Cybercrime for Monetary Gains
v Correlation between various types of Cyber Crimes

3. Methodology

The data has been sourced from Open Government Data Platform of India (data.gov.in) for the fulfilment of the above research objectives. The dataset comprises of state-wise listing of cybercrimes such as Revenge/Settling scores, Greed/Money, Extortion, Cause Disrepute, Prank/Satisfaction of Gaining Fraud/Illegal Gain, Eve teasing/Harassment, Others. Finally total of cybercrimes occurred and registered in particular states have been also calculated for the year 2013.

The data thus obtained has been standardised, analysed and the results have been displayed graphically.

4. Data Analytics and Observations

The observations and the results as obtained after exhaustive analysis of the data as obtained from the authentic source has been elaborated as follows[2]:

4.1 State-Wise Analysis and Comparison of Cybercrimes in India

It is evident from the above graph that the highest number (907) cases of cybercrimes have been registered in the state of Maharashtra[7].

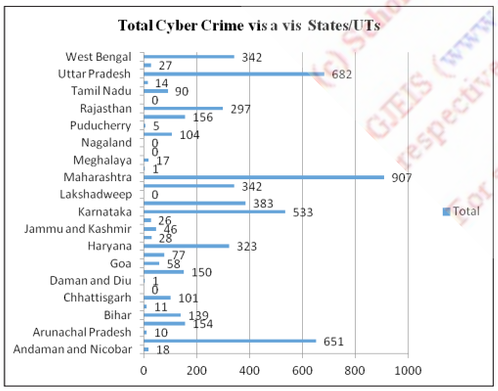

Figure 1. State-wise Total Cyber Crime.

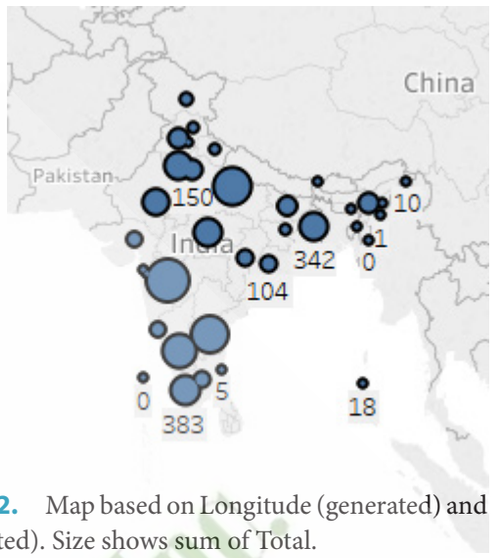

Figure 2. Map based on Longitude (generated) and Latitude (generated). Size shows sum of Total.

- Number of registered crimes in the state of Karnataka, Andhara Pradesh and Uttar Pradesh is more than 500.
- Rajasthan, Kerala, MP and Haryana have crime rate around 300.
- Punjab, Orissa, Delhi, Chattisgarh, Bihar and Assam have more than 100 cases.
- Lakswadeep, Dadar and Nagar Haveli and Sikkim have zero crimes. This may be attributed to limit IT infrastructure and related facilities available at these places.

4.2 Category Wise Analysis of Various Cyber Crimes

The analysis is based on various types/categories of cybercrimes such as Revenge/Settling scores, Greed/Money, Extortion, Cause Disrepute, Prank/Satisfaction of Gaining Fraud/Illegal Gain, Eve teasing/Harassment, Others[6].

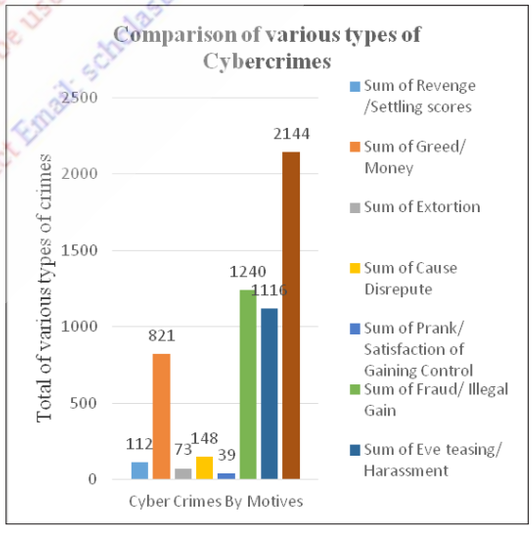

Figure 3. Comparison of various types of Cybercrimes.

- It is observed that the crimes included under 'Others' category have maximum number of occurrences.
- Crimes committed on account of Fraud and Illegal Gain is also significant followed by eve teasing and harassment.

4.3 State and Crime-Wise Analysis

4.3.1 Revenge/Settling Score

- It is observed that that the state of Kerala leads in this category as compared to any other state.
- Barring Maharashtra, Orissa, Uttar Pradesh and West Bengal, the Crime on account of revenge/settling score is negligible/zero in most of the states.

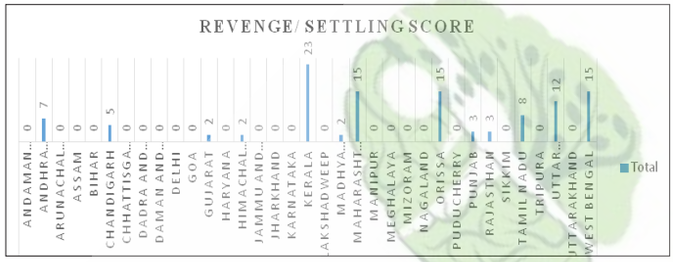

Figure 4. State-wise Analysis of Revenge/Settling Score.

4.3.2 Greed/Settling Score

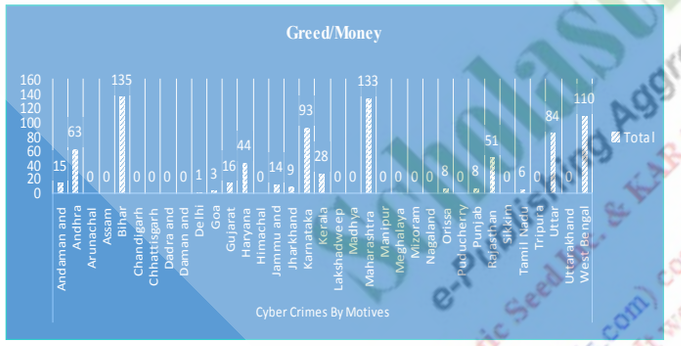

Figure 5. State-wise Analysis of Greed/Settling Score.

It is observed that the-

- Crimes on account of greed/settling scores are quite significant in the states of Bihar (135), Maharashtra (133) and West Bengal (110).
- Andhra Pradesh, Haryana, Rajasthan and Uttar Pradesh lie between 50 to 100 under this category.
- Other states have almost negligible crime under this category.

4.3.3 Extortion

It is observed that the

- Crimes on account of extortion are high in the states of West Bengal and Uttar Pradesh followed by Maharashtra.

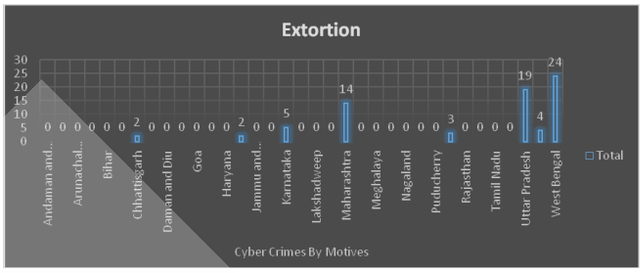

Figure 6. State-wise Analysis of Cybercrime Extortion.

4.3.4 Prank

It is observed that the -

- Crimes on account of prank are high in the states of Maharashtra, Punjab and Uttar Pradesh.
- The remaining states have negligible or no crime.

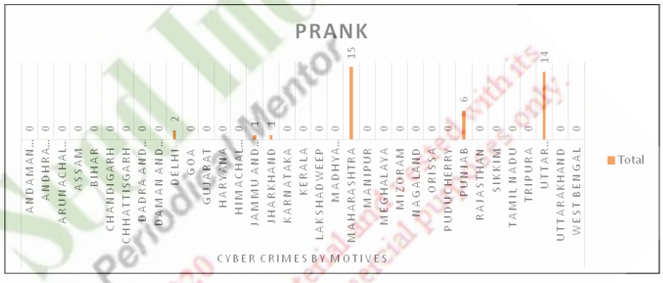

Figure 7. State-wise Analysis of Cybercrime Prank.

4.3.5 Fraud/Illegal Gain

It is observed that the-

- Crimes on account of Fraud/Illegal Gain are highest in the state of Uttar Pradesh.
- The states such as Andhra Pradesh, Maharashtra and Karnataka have significant crime under this category.
- The remaining states have negligible or no crime under this category.

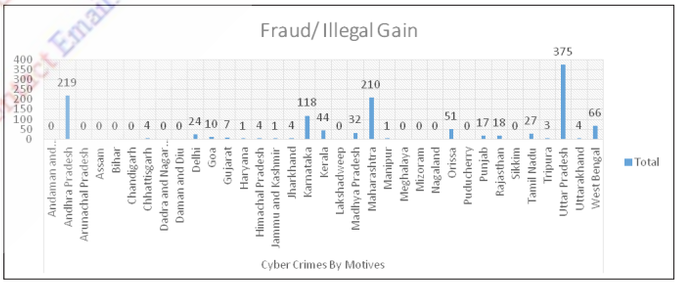

Figure 8. State-wise Analysis of Cybercrime Fraud/Illegal Gain.

4.3.6 Eve Teasing

It is observed that the-

- Crimes on account of eve teasing are highest in the state of Uttar Pradesh.

- Maharashtra and Andhra Pradesh have significantly high rate of such crime.
- Karnataka, Madhya Pradesh and Rajasthan account for moderate rate under this category.
- The remaining states have negligible or nil crime under this category.

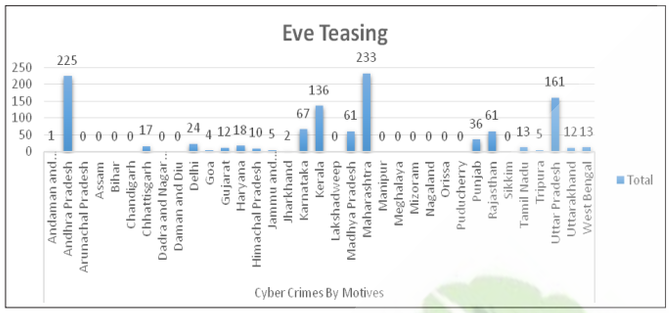

Figure 9. State-wise Analysis of Cybercrime Eve Teasing.

4.3.7 Others

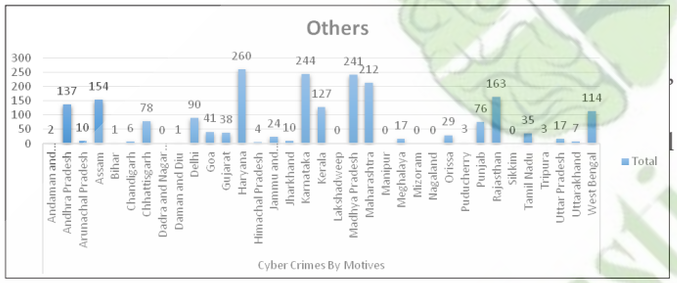

Figure 10. State-wise Analysis of Other Cybercrimes.

4.4 Cybercrime for Monetary Gains

The chart below gives the total number of cybercrimes carried out for monetary gains. Uttar Pradesh is the state with maximum crimes whereas Arunachal Pradesh, Assam, Chandigarh Daman & Diu, Lakshadweep, Manipur, Meghalaya, Mizoram, Nagaland, Puducherry and Tripura has negligible crime on account of monetary gains.

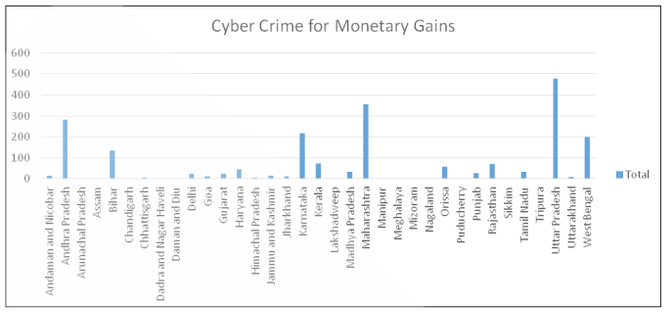

Figure 11. State-wise Analysis of Cybercrime for Monetary Gains.

4.5 Correlation between Various Types of Cyber Crimes

It is observed that the correlation between Fraud/Illegal Gain and Eve teasing/Harassment is highest (0.83) followed by Fraud/Illegal Gain and Prank/Satisfaction (0.76).

5. Conclusion

It is clear from the above study and analysis that with the advancement in technology the instances of cybercrime is also increasing. The highest number cases of cybercrimes have been registered in the state of Maharashtra, followed by Karnataka, Andhra Pradesh and Uttar Pradesh with more than 500 cases of cyber crimes. Rajasthan, Kerala, MP and Haryana have crime rate around 300 whereas Punjab, Orissa, Delhi, Chhattisgarh, Bihar and Assam have more than 100 cases of reported cyber crimes[5].

Table 1. Correlation between various types of cybercrimes

	Revenge / Settling scores	Greed/ Money	Extortion	Cause Disrepute	Prank/ Satisfaction of Gaining Control	Fraud/ Illegal Gain	Eve teasing/ Harassment	Others
Revenge/Settling scores	1.00							
Greed/Money	0.44	1.00						
Extortion	0.53	0.65	1.00					
Cause Disrepute	0.50	0.46	0.33	1.00				
Prank/Satisfaction of Gaining Control	0.41	0.49	0.63	0.65	1.00			
Fraud/Illegal Gain	0.53	0.60	0.65	0.37	0.76	1.00		
Eve teasing/Harassment	0.60	0.58	0.42	0.64	0.65	0.83	1.00	
Others	0.26	0.44	0.21	0.40	0.18	0.30	0.51	1.00

6. Recommendations

Generally, the literate class happens to commit cybercrime, hence it is essential to spread awareness among the people about implications related to this crime. The Cyber law may be revisited time to time so that it acts as deterrent to commit such crimes. Further, the law should be able to find a perfect balance between cybercrime protection and infringement of people's rights.

State level stringent monitoring of such crimes may be introduced in addition to the present infrastructure/efforts that exist with the Centre. The states like Uttar Pradesh, Andhra Pradesh, Maharashtra, Karnataka, Bihar and West Bengal account for higher crime with respect to monetary gains, corrective actions may be taken towards this area. AP, Maharashtra, Kerala and UP have high cybercrimes against women and hence need policing and corrective action[4].

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Annexure-I

Empirical Study of Cyber Crimes in India using Data Analytics

ORIGINALITY REPORT

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SIMILARITY INDEX

PRIMARY SOURCES

1	data.gov.in Internet	60 words — 4%
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Factors Differentiating Career Selection among Accounting Students

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Abstract

This research aims to explore factors differentiating career selection among accounting students in selecting their future career. The subjects of this research were 200 accounting students from several public and private universities in Indonesia. Semi-opened ended questionnaires with five Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree) was used in this study. Descriptive statistics were used to describe the characteristics of variables and MANOVA was employed to test research hypothesis. The results of this research show that student career selection significantly varies among financial rewards, professional recognitions, work environments and labor market consideration. Vice versa, only professional training and social values do not affect students in selecting their future career. Findings are discussed and recommendations are provided to policy holders and further researchers.

Keywords: Accounting, Career, Indonesia, Selection, Students, University

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Editorial Board Excerpt: *At the Time of Submission (ToS) submitted paper had a 08% plagiarism which is an excellent indication as far as originality report is concerned and falls under an accepted percentage for publication. The editorial board is of an observation that paper had a subsequent surveillance by the blind reviewer's which at a in a while stages had been rectified and amended by an author in a range of phases as and when required to do so. The reviewer's had in an initial stages comment with minor revision with a following remark which at a short span restructured by an authors (Amra and Sukirno). The comments related to references, conceptual and body text is perceptible both subject-wise and research wise by the reviewers during estimation and further at blind review progression too. All the comments had been combined at a diversity of dates by the authors' in due course of time and same had been incorporated by the author in totaling. By and large all the editorial and reviewer's comments had been integrated in a manuscript at the end and further the paper had been earmarked and decided under "**Research Thought**" kind as its highlights and accentuate the work in relation to Career Selection among Accounting Students and the factors which played an important role in differentiating.*

1. Introduction

According to Indonesian Accounting Association (IAA), accounting fresh graduates universities in Indonesia were 35.304 in 2010. This number was increased from the prior years, that 24.402 in 2009, 25.649 in 2008, 27.335 in 2007, and 28.988 in 2006. But, a thousand graduate students could not realize their dreams to be a professional accountant.

While IAA stated that Indonesia needs at least 452.000 but in now are only 15.940 professional accountants available. This number is fewer than Malaysia's accountants 30.236, Filipina's accountants 19.573, Singapore's accountants 27.394, and Thailand's accountants 56.125.

Accounting students who have chosen an alternate career, in the way of success usually get problems[11]. A number of accounting students are obstructed to achieve their dreams because they do not know about rights and obligations to be a professional accountant.

Career can determine the happiness, according to Agung[5] "By career, someone could suffice of achievement needs, identity, activity, human relation, and outer livelihood". So, the accuracy of selection and determination of career is the most important point in human life.

Generally, the graduation of accounting bachelor degree students has three alternative choices[2]. First, accounting fresh graduate could directly work in a company, government institution, or non-government institution. Second, accounting fresh graduate advances his study. Third, accounting fresh graduate took profession certification.

Motivation affects people to select a career. Research of Maslow[6] stated that someone willing to do something because of their physiological needs such as eating and drinking, safety

*Author for correspondence

needs such as self-safety, needs of love such as family, social needs such as position in the environment, and self-actualization such as improving life skill.

Motivation can be caused by perception and willing. Oktavia[11] stated the perception of sacrifice on the profession is a factor that motivates students to select the career. Aprilyan[2] also said that students select a career as there is a positive perception about the career. Nurmayasari[10] explained that willing is one of the factors that motivates the selection.

Research that has been conducted by Wicaksono[16] and Widyasari[17] finds that perception of accounting students could motivate career selection as accountant educator, government accountant, corporate accountant, or public accountant significantly. This is viewed by salary or financial reward, professional training, professional recognition, social value, working environment, Labor market consideration, and personality perception. Research of Merdekawati and Sulistyawati[7,13] stated that professional training. Professional recognition, social value, and working environment affect career selection.

Setiyani[14] stated that salary, professional training, professional recognition, and working environment factors in selecting a career. Besides, social value, intrinsic value, and Labor market consideration are not factors that affecting career selection.

This study provides a broader understanding of previous research findings, different theoretical views, and factors influence career selection among accounting students.

2. Method

A total of 200 accounting students from several public and private universities in Indonesia were participated in this study. This study explores the impact of salaries, professional trainings, professional recognitions, social values, and working environments, and labor markets on career selection among accounting students.

Salaries or financial rewards for some companies are the main attraction of employees[17]. Salaries or financial rewards were measured by three items that are high initial salary, pension fund, fast salary increment[17].

Professional training is aimed to add interests, talents and professional skills. Professional training can be measured with Rahayu[17]: Pre-work training, Professional training, Routine work training, Work experience.

Professional recognition in this study is the recognition of achievements that can increase the position or get more facilities. Professional recognition can be measured with Rahayu[17]: More opportunities to develop, There is recognition when achieving, Requires many ways to promote, Requires expertise to succeed.

Social values are shown as factors that reveal a person's ability in society or a person's worth that can be seen from the perspective of others in his environment[17]. Social values can be tested with Rahayu[17]: Process to promotion, Opportunity to perform social services, Opportunity to interact with others, Personal satisfaction, Opportunity to run a hobby outside of work, Attention to individual behavior, Prestige work in the eyes of others.

Working Environment is the nature of work, the level of competition, and the number of working pressures are the environmental factors of work that can affect the selection of career[17]. The work environment is measured in terms of work that is routine, attractive, and often overtime. In this study, the working environment is an independent variable which is denoted by the letter X5.

According to Widyasari[17], "Labor market considerations include job security and the availability of employment or ease of accessing job vacancies". Rahayu[17], Labor market considerations can be measured by: Secured working (sparse layoffs), Good Employment opportunities.

Semi-opened ended questionnaires with five Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree) was used in this study. Descriptive statistics were used to describe the characteristics of variables and MANOVA was employed to test research hypothesis.

3. Results and Discussion

3.1 Descriptive Statistics

From the total of respondents (200 students), the most favourit profession selected by students is as a corporate accountant (80 students), followed by as a public accountant (58 students), then as a governmental accountant (54 students) and finally the least favourit profession is as an educator (8 students).

Based on data analysis, it can be seen that salary or financial reward, and professional training are highly considered in selecting students' future career. Meanwhile professional recognition, social values, and labor market are ranked by students in medium category and indicate that those are less considered by students in selecting their future career.

3.2 Hypothesis Testing

Table of Manova test below represents the impact of salary or financial reward, professional training, professional recognition, social value, working environment, and labor market on career selection among students.

Salary or financial rewards become one aspect for students to consider a career in the selection ($F = 4{,}745$; $p = 0{,}003$). Students often wish a big salary. This is because a big salary or financial reward can suffice the needs of daily life and the rest can be saved. A big salary or financial reward also enables a person to be independent without financial help from parents or others[4]. Widyasari[17] revealed that a salary or financial reward is a

Table 1. Manova of factors affecting student career selection.

Variable	F	p	R *Square*
Salary or Financial Reward	4,745	**0,003**	0,068
Professional Training	1,510	0,213	0,023
Professional Recognition	5,027	**0,002**	0,071
Social Value	1,047	0,373	0,016
Work Environment	3,156	**0,026**	0,046
Labor Market Consideration	3,640	**0,014**	0,053

attractive factor that students consider in choosing a profession. Stolle's[1] stated that high starting salaries, pension funds, and award potential can make a person interested in choosing a career. Widyasari[17] stated that students prefer to be a public accountant because of the bigger and faster chance to get a job and make money.

Students will also take into account of professional recognition (F = 5,027; p = 0,002). Such professional recognition provides more opportunities to growth. Recognition for performance will enable people to improve their quality of works and in turn their better career in the future Oktavia[11]. Professional recognition has a significant impact on career selection among students[2,14,16].

Work environment was found differentiate students in selecting their furute career (F = 3.156; p = 0.026). Students are motivated factors such as job can be done quickly or easily completed, the job environment is fun, the job is routine, the job is more challenging, but students avoid a job with high pressure, high competition, and take overtime[8,11,14,17].

This research found that students perceived differently among labor market (F= 3.640; p = 0.014). This finding implies that students tend to choose a job in which provider facilitated detail information about the job. The more detail information abouta job the students can get, the greater the students tend to select the job. Oktavia[11] stated that labor markets motivate students in choosing a career. Widyasari[11] confirmed that detail information about a job equipes students compare among professions before they select the fittest job.

Nevertheless, this research found that professional training does not have impact on career selection among students (F = 1,510; p = 0.213). This finding is in line with the research conclusion made by Prastyawan, Yuniharisa, Nanda and Hutapea[3,9,12,18].

This research also found that social value does not differentiate career choices among students (F = 1,047; p = 0,373). Students perceived that their future career as an accountant will not be considered higher or better in the community[12,14,15].

4. Conclusion and Recommendation

In general statement this study found that financial rewards, recognition, work environment, and labor market considerations became factors significantly considered by students in selecting their future career. On the other hand, students did not significantly consider professional training and social values as factors counted in their future career selection.

The research recommends that firstly, job providers are better to publish their detail information regarding financial rewards, recognitions, work environmentsto job seekers. Secondly, tertiary education institutions are urged to countinously improve their facilities in enabling students to be a qualified and professional corporate accountant, public accountant, government accountant dominantly, or as an educator even. Lastly, fot further researchers are suggested to examine other relevant internal and external factors influence students in selecting their future career.

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Annexure-I

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Feature Matching Techniques for Speaker Recognition

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Abstract

Speaker recognition is a stream of biometric authorization which deals with the automatic identification of individual person using some inherent characteristics of that individual. The last stage of this system is the classification of feature templates generated during the previous stage i.e. feature extraction. This classification stage, also known as feature matching, provides the final decision about the speaker under observation. Hence, it is most important to use appropriate feature matching technique to get the accurate result. There are numerous feature matching techniques which can be used for the purpose. The present work provides an analysis of the various feature matching techniques used in the final step of a speaker recognition system. These techniques can be categorized in Statistical techniques, Soft-computing techniques and hybrid techniques. Statistical techniques include: "Vector Quantization (VQ), Gaussian Mixture Model (GMM), Hidden Markov Model (HMM) etc.", while Soft-computing techniques are "Artificial Neural Network (ANN), Support Vector Machine (SVM) and Fuzzy logic etc." Hybrid techniques make use of both the above said techniques.

Keywords: Artificial Neural Network (ANN), Feature Matching, Speaker Recognition, Gaussian Mixture Model (GMM), Support Vector Machine (SVM), Vector Quantization (VQ)

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1. Introduction

Speech is the most important mean of exchanging information among humans. Hence, speech may also be primary mean of exchanging information between humans and machines. Speech recognition is related to the extraction of the linguistic message in the uttered speech while speaker recognition is identifying a person who is speaking. Speaker Recognition (SR) is a stream of biometric authorization which deals with the automatic identification of individual person using some inherent characteristics of that individual. The final step of a SR system is the classification of unknown and known speaker models generated from the information gathered during feature extraction. This classification stage, also known as feature matching, provides the final decision about the speaker under observation. Hence, it is most important to use appropriate feature matching technique to get the accurate result. There are numerous feature matching techniques (Figure 1) which can be used for the purpose. In the present paper some important feature matching techniques are detailed. Generally used speaker recognition models are codebook model, artificial neural network model, statistic model, and template model[1].

Speaker can be recognized with the help of various techniques. Major categories of these techniques are:

- Statistical techniques.
- Soft Computing techniques.
- Hybrid techniques.

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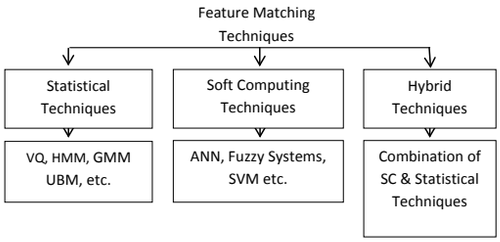

Figure 1. Feature matching techniques.

In section 2, statistical feature matching techniques are discussed and section 3 presents soft-computing techniques for the task. Section 4 gives hybrid techniques and the paper is concluded in the next section.

2. Statistical Techniques

These techniques include 'HMM', 'GMM', 'UBM', 'VQ' and many more. Some are explained in detail here.

2.1 Vector Quantization

VQ model was proposed for speaker recognition in 1980s[2] and it was originated basically from data compression. VQ is a very simple text-independent speaker model. Primarily VQ is utilized for ensuring the computation at fast rate and for light-weight practical implementation[3]. But competitive accuracy can also be achieved by combining VQ with background-model adaptation. The average quantization distortion can be given as:

$$D_Q(X,\dot{R}) = \frac{1}{T}\sum_{t=1}^{T} \min_{1\le n\le N} d(x_t, r_n) \quad (1)$$

Where X = $\{x_1, x_2, ..., x_T\}$ and $\dot{R}$ = $\{r_1, r_2, ..., r_N\}$ are test utterance feature vector and reference vectors respectively. D (x,r) is the Euclidian distance $\| x_t - r_n \|$. Smaller is the value of D_Q higher is the likelihood that X and $\dot{R}$ originates from same speaker. Hypothetically, all the training vectors can be used as reference vector , but to reduce computational complexity some clustering method is used to reduce number of vectors. For instance, K-means method can be used to get a reduced set of vectors (codebook). Moreover, optimization of codebook size is important than clustering method. Vector quantization is basically reduces the size of feature vector by mapping vectors of a larger distribution to smaller number of areas in the space. Every mapped area is known as a "cluster" and may be classified by the center of the area known as "*a code-word*". These "code-words" for all the clusters is known as "*Codebook*".

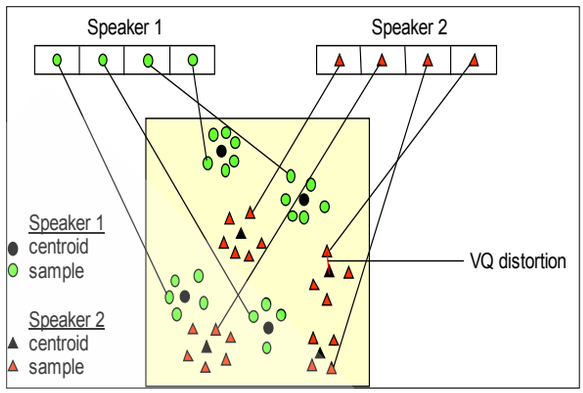

Figure 2. Vector quantization codebook formation.

Figure 2 illustrates a typical speaker identification task. It shows merely a two dimensional space representing the acoustical space of single speaker each. Small 'circles' of green colour are representing "Speaker 1" and red 'triangles' are for "Speaker 2". A vector quantized code book is obtained for all the speakers known to the system by utilizing this "clustering algorithm" during the "training phase" of the SR system. These generated "code-words" known as "centroids" are represented in Figure 2 by "black circles and black triangles" for respective speaker 1 and speaker 2. The discrimination of both the speakers can be done on the basis of centroid's locations. The difference in positions of a vector and the nearest code-word of "codebook" is known as "VQ-distortion". Then, in the next stage i.e. "recognition phase", speech sample of an unknown speaker is "vector-quantized" utilizing previously trained "codebook" and resulting VQ-distortion is calculated. The speaker having lowest distortion is declared as recognized speaker of input speech sample.

2.2 Gaussian Mixture Model (GMM)

This method is an extension of vector quantization model having overlapped clusters. It means that a feature vector have a non-zero probability of evolving from individual clusters. GMM has become a base method for robust speaker recognition[4]. A GMM is represented by "λ" and it's "Probability Density Function (PDF)" as:

$$p(x \mid \lambda) = \sum_{i=1}^{K} P_i G\left(x \mid \mu_i, \sum_i \square\right) \quad (2)$$

where K is no. of "Gaussian components", P_i is "prior probability" of i^{th} component and,

$$G\left(x \mid \mu_{,} \sum_i \square\right) = (2\Pi)^{-\frac{d}{2}} \mid \sum_i \square \mid^{\frac{1}{2}}$$

$$\exp\left\{-\frac{1}{2}(x-\mu_i)^T \sum_i \square^{-1}(x-\mu_i)\right\} \quad (3)$$

is a "d-variate Gaussian density function" having "mean vector μ_i", and "covariance matrix $\sum_i$". Also $P_i \geq 0$ are constrained as $\sum_{i=1}^{K} P_i = 1$. A huge amount of training data is the requirement for estimating the parameter of a full covariance GMM and this process is also computationally expensive. Thus, the diagonal covariance matrices of GMM are generally used to align the principle axes of the Gaussian ellipse with the coordinate axes as it reduces the computational complexity. To train a GMM, the parameters $\lambda = \left\{P_i, \mu_i \sum_i\right\}_i^K = 1$ are estimated from a sample $X = \{x_1, x_2, \ldots\ldots, x_T\}$. Generally ML (Maximum Likelihood) estimation is used. The "average log likelihood of X with respect to λ" can be given as:

$$\text{LLavg}(X, \lambda) = \frac{1}{T}\sum_{i=1}^{T} \log \sum_{i=1}^{K} P_i G\left(x_t \mid \mu_n, \sum_i\right) \quad (4)$$

This value indicates whether the unknown vectors are evolved from λ or not. For a given data likelihood may be maximized utilizing "Expectation Maximization (EM) algorithm"[5]. EM algorithm may be initialized using K-means and only few EM iterations are required. Estimation of optimal number of EM iterations is very important for a given task. Research has shown that separate model for male and female speaker have better performance than a single model for both. The adaptation of the new speaker model during the enrolment is carried out with the background model of the respective gender.

There are several methods used for adaptation out of which most important are "Maximum A Posteriori (MAP)" and "Maximum Likelihood Linear Regression (MLLR)". The adaptation method is selected on the basis of available amount of training data. MAP is applied where hundred hours of "training data" is used while MLLR is more effective for short utterances of few seconds. The matching each frame with others in GMM requires intensive computations. In GMM-UBM model, the score (13) is calculated fast by determining the top-C (generally C=5) scoring Gaussian from UBM for individual test utterance[6].

Additional techniques for fast computation includes Gaussian component evaluations, reduced number of vectors, and speaker models. In Hidden Markov Model (HMM) phonetic information is used for speech recognition but in GMM no such information is used explicitly and all "spectral features" of separate phonetic classes are combined to form training set for GMM. Due to this reason, test feature is phonetically misaligned with Gaussian component and it could bias the match score.

The problem of mismatching of phoneme is elaborated with phonetically motivated tree structure and an independent GMM for different phonetic classes. For example, P-GMM (phonetic-GMM) utilizing a "Neural-Network Classifier" for broad phone classes from 11 different languages is described in[7].

3. Soft Computing Techniques

These include "Artificial Neural Network (ANN)", "Genetic Algorithm (GA)", "Support Vector Machine (SVM)" and "Fuzzy Systems" etc.

3.1 Artificial Neural Network

It is used in several pattern classifying applications. It has the advantage that feature extraction and pattern matching can be performed with one artificial network which enables the simultaneous optimization of both. It is also very easy to combine different subsystems using ANN[8]. Artificial neural network is network of computing "neurons", and represents "parallel-distributed processing" structure. ANN is inspired by the bio-logical structure of human brain which is made up of the neurons. An important property of NN is its capability of approximating an arbitrary non-linear function. As "Artificial Intelligence (AI)" requires typically higher capability of taking non-linear decisions, NN could be a better choice in AI. ANN contains nodes, commonly arranged in different layers, and connections are made with the help of "weight elements", known as synapse. At all nodes, "weighted inputs" are "aggregated", "thresholded", and applied to "activation function" for generating output of a particular node. This process is illustrated in the Figure 3.

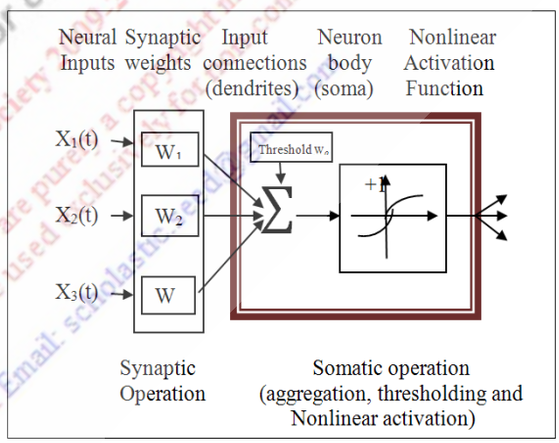

Figure 3. Operation at a node of NN.

3.2 Support Vector Machine

SVM is probably the most powerful classifier for speaker recognition systems. SVM can increase the accuracy when combined with GMM. SVM is a robust discriminative classifier which is equally applicable on "spectral", "prosodic", and "high-level" features. Furthermore, this technique is advantageous due to its ability to classify unseen data. It is a *binary* classifier modelling a decision boundary (*Separating Hyperplane*) between two classes as shown in Figure 4.

In case of verification, training vector of reference speaker is kept in one class and may be labelled as +1 while the training vectors of background (imposter) population are contained in second class labelled as "1". These labelled vectors are used to find a hyperplane which maximize the "margin of separation" of both classes. Discriminative function of SVM can be defined as[9]:

$$f(x) = \sum_{i=1}^{N} \alpha_i t_i K(x, x_i) + d \quad (5)$$

Here $t_i \in \{+1, -1\}$is the ideal output value, $\sum_{i=1}^{N} \alpha_i t_i = 0$ and $\alpha_i > 0$. x_i (Support vector), α_i (weight of x_i) and d (bias term) are obtained from training data by some optimization process. K (kernel function) can be given as $K(x, x_i) = \varnothing(x)^T \varnothing(x_i)$, where ø is mapping of the input space to high dimensional kernel feature space.

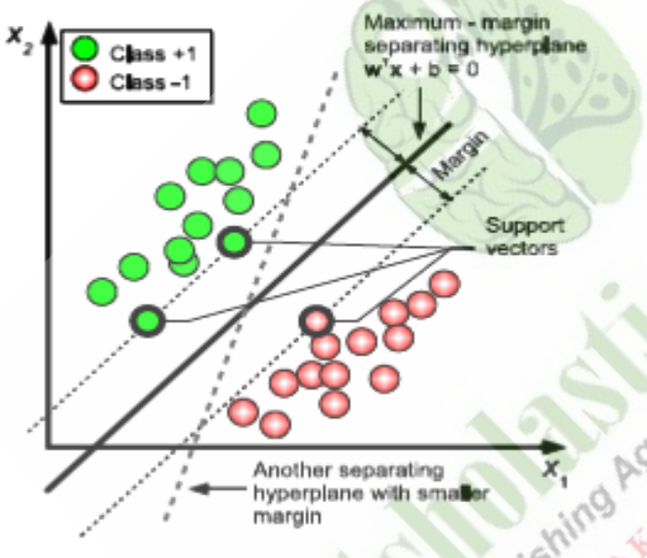

Figure 4. Principle of support vector machine[9].

3.3 Fuzzy Systems

"Fuzzy Logic (FL)" technique is utilized in image processing for "edge detection", "feature extraction", "classification", and "clustering". FL is capable enough to imitate human brain in effective manner based on logical reasoning. Reasoning explores decision making in respect of precision and certainty that involves processing costs. The extent to which "imprecision and uncertainty" can be tolerated, is explored by considering basic human capability for understanding "distorted speech", "decipher sloppy handwriting", "comprehend nuances of natural language", "summarize text", and "recognize and classify images". Fuzzy system may be used to design an inference system mapping fuzzy if-then-else rules. Fuzzy system makes use of linguistic variables matching human thought process. Fuzzy system has the capability for modelling of arbitrarily complex non-linear function to certain accuracy. Fuzzy systems can model a multi-input, multi-output system.

Zadeh was the first to introduce this term "Fuzzy Logic" in the work "Fuzzy sets," which explained mathematical aspects of "Fuzzy set theory". But Lukasiewicz was the pioneer in proposing a systemized replacement to the "bi-value logic of Aristotle" having choice of only "True or False". Lukasiewicz's proposal was to add one more value to these two as "possible," and a numerical value is assigned along with the two possible values. Then, four and five valued logics are also proposed by him. After that, it was proposed by him that, in fact, an infinite valued logic can possibly be derived. Fuzzy logic can also model the inherently imprecise conditions.

The crisp sets are extended to fuzzy sets. Crisp set allows either complete or no memberships, while fuzzy set allows partial memberships too. In crisp sets, whether an element x is a member or non-member of set A, it is represented by a membership function μA(x). If μA(x)=1 then $x \in A$ and μA(x)=0 then $x \notin A$. Fuzzy sets introduced "partial membership" in addition. A "fuzzy set A" on a universe of discourse U is defined by a characteristic function μA(x) that can take values in between [0,1]. Fuzzy set represents common sense linguistic labels like slow, fast, small, large, heavy, low, medium, high, tall, etc. A membership function is essentially a curve that defines how each point in the input space is mapped to a membership value (or degree of membership) between 0 and 1[10].

4. Hybrid Techniques

Next generation techniques are hybrid techniques which make use of both statistical techniques as well as soft computing techniques to achieve the higher efficiency in speaker recognition. These techniques are very much useful in Forensic Speaker Recognition because forensic data is generally not a clean data and hence robust techniques are required for this kind of systems.

5. Conclusion and Future Scope

The importance of feature matching techniques in a SR system is discussed in the present work. Three categories of these techniques namely, statistical, soft-computing and hybrid techniques are detailed in the paper giving an insight of various feature matching techniques from each category. Out of the various available techniques, "VQ, GMM, SVM, ANN and Fuzzy logic" are discussed in detail. Each of the above techniques has their respective advantages and disadvantages, but researches have shown that ANN and GMM are the best techniques for speaker recognition. For future research, the combination of two or more of the above mentioned techniques can be utilized to evolve a new hybrid technique for increasing the efficiency of the speaker recognition system.

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Annexure-I

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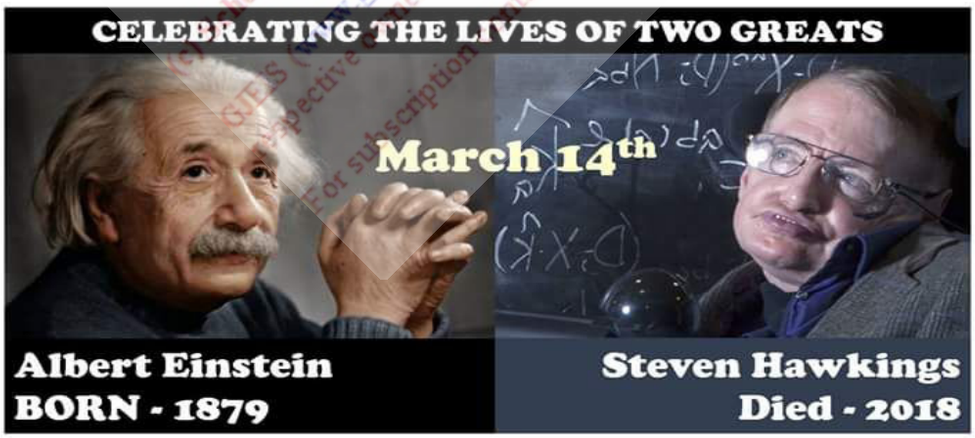
HOMAGE

Former Lucasian Professor of Mathematics at the University of Cambridge and Author of a Brief History of Time which is an International Bestseller

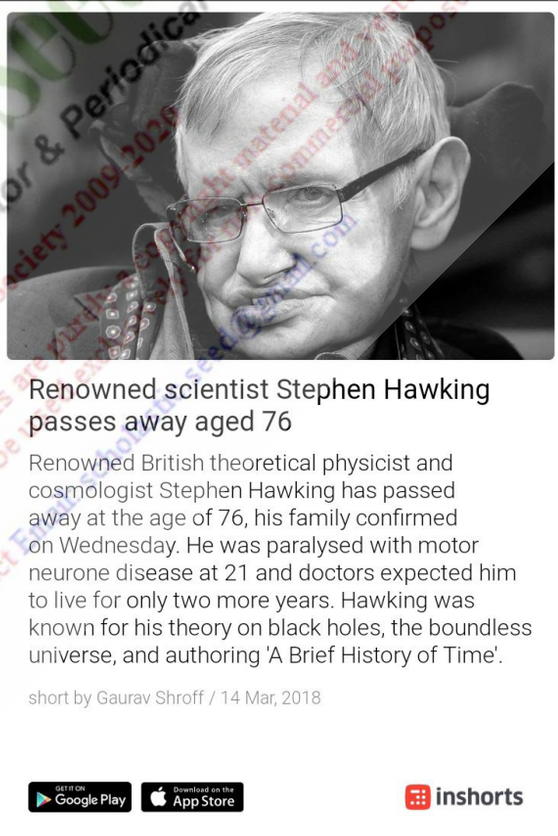
Stephen William Hawking

Stephen William Hawking CH CBE FRS FRSA (8 January 1942 – 14 March 2018) was an English theoretical physicist, cosmologist, author, and Director of Research at the Centre for Theoretical Cosmology within the University of Cambridge. His scientific works included collaboration with Roger Penrose on gravitational singularity theorems in the framework of general relativity and the theoretical prediction that black holes emit radiation, often called Hawking radiation. Hawking was the first to set out a theory of cosmology explained by a union of the general theory of relativity and quantum mechanics. He was a vigorous supporter of the many-worlds interpretation of quantum mechanics. Hawking was a Fellow of the Royal Society (FRS), a lifetime member of the Pontifical Academy of Sciences, and a recipient of the Presidential Medal of Freedom, the highest civilian award in the United States. In 2002, Hawking was ranked number 25 in the BBC's poll of the 100 Greatest Britons. He was the Lucasian Professor of Mathematics at the University of Cambridge between 1979 and 2009 and achieved commercial success with works of popular science in which he discusses his own theories and cosmology in general. His book A Brief History of Time appeared on the British Sunday Times best-seller list for a record-breaking 237 weeks. Hawking had a rare early-onset slow-progressing form of motor neurone disease (also known as amyotrophic lateral sclerosis "ALS" or Lou Gehrig's disease) that gradually paralyzed him over the decades. Even after the loss of his speech, he was still able to communicate through a speech-generating device, initially through use of a hand-held switch, and eventually by using a single cheek muscle. He died on 14th March 2018 at the age of 76.



*Author for correspondence

Born 8 January 1942 Oxford, England Died 14 March 2018 (aged 76) Cambridge, England Resting place Westminster Abbey Dean's Yard, Westminster, London	**Education** St Albans School, Hertfordshire **Alma mater** University of Oxford (BA) University of Cambridge(MA, PhD)	Known for Hawking radiation A Brief History of Time Penrose–Hawking theorems Bekenstein–Hawking formula • Hawking energy • Gibbons–Hawking ansatz • Gibbons–Hawking effect • Gibbons–Hawking space • Gibbons–Hawking–York boundary term • Thorne–Hawking–Preskill bet **Awards** • Adams Prize (1966) • Eddington Medal (1975) • Maxwell Medal and Prize(1976) • Heineman Prize (1976) • Hughes Medal (1976) • Albert Einstein Award (1978) • Copley Medal (2006) • Presidential Medal of Freedom (2009)



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Biographical Note of a Luminary in an Area of EIS

Heading TIFAC as an Executive Director and established "Nuclear Fusion in National and International Labs in India and USA"

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Prof. Prabhat Ranjan, is heading TIFAC as its Executive Director. TIFAC is an autonomous body of DST and is setup as India's Technology Think Tank. During his tenure, TIFAC prepared 'Technology Vision 2035' document, which was released by Hon'ble PM in January 2016. Prof. Ranjan has worked on Nuclear Fusion in National and International Labs in India and USA and made major contributions to this field for nearly two decades. He also served as Professor at Dhirubhai Ambani Institute of ICT in Gandhinagar for 11 years. His remarkable innovative contributions include India's Moon Mission, Wildlife and Agriculture sector. He is particularly known for his innovations in the field of assistive technology that has helped to put smiles on the faces of many persons with severe disability. He had obtained his PhD from University of California, Berkeley and did college education from IIT Kharagpur and University of Delhi. He has received many awards and accolades for his contribution to Science, Technology and Society.

TIFAC Genesis

Need for undertaking technology forecasting and assessment studies on a systematic and continuing basis was highlighted in the Government of India's Technology Policy Statement (TPS) of 1983. It further made mandatory, for the Ministries and Agencies with large investments or large volume of production to provide a technology forecast covering their requirements over a 10 year or longer period and for evolving suitable strategies for development based on priorities. Subsequently, as per the recommendation of Technology Policy Implementation Committee (TPIC) in 1985, Cabinet approved the formation of TIFAC in mid 1986 and TIFAC was formed as a registered Society in February, 1988 under the Department of Science and Technology as an autonomous body. It was mandated to assess the state-of-art of technology and set directions for future technological development in India in important socio-economic sectors. As a unique knowledge network institution in India, TIFAC activities encompass a wide array of technology areas and fill a critical gap in the overall S & T system of India. The organization has carried out technology foresight exercise, facilitated and supported technology development; prepared technology linked business opportunity reports and implemented mission-mode programmes.

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Overview

Global Markets and operations make it mandatory for organizations to rethink business innovation and research activities. Business research and innovation contribute considerably in improving the organizations productivity & quality and also refines the business strategies. There is a worldwide growth in competition to attract Research and Innovation and to achieve Sustainable Global Competitiveness, the organizations need to reform and strengthen their Business Research and Innovation systems and policies in sustainable and ethical manner. There is also a need to improve understanding how to ensure good Governance for economic and social development. This special issue will provide empirical and conceptual contributions that explore the organization's motivation to embrace Responsible Innovation and Research for Sustainable business in era of Globalization.

Topics

Contributors are welcome to submit Papers/Articles/Chapters but the topics are not limited to the following:

Block-1: Business Research	
• General Business Research Methods • Globalization, Business and Systems • Research & Development and Innovation • Any other Interdisciplinary Research related to Business, Research and management	
Block-2: Sustainable Development	
• Sustainable Business Models • Innovation for Sustainable Development • Corporate Responsibility and Sustainable Development • Entrepreneurship and Sustainable Development • Sustainable Business in Digital Age • Business Sustainability	
Block-3: Technology and Innovation	
• Digitization Era • E-Commerce/E-Business • Big Data Security and Challenges	
Block-4: Management Information Systems	
• Business Information System • Business statistics/Econometrics • Operational Research • Business Analytics	

Block-5: Corporate Social Responsibility and Ethics	
• Corporate Social Responsibility and Digital Revolution • Corporate Social Responsibility and Sustainable Development Goals (SDGs) • Corporate Social Responsibility and Business Ethics • Corporate Social Responsibility Initiatives • Corporate Social Responsibility Strategies	
Block-6: General Management & Operations	
• Innovative Practices in Management & Operations • Challenges, Threats & Opportunities in managing start-ups • Re-building business processes with Research Tools & Techniques • Evolution of Fintech Companies & financial inclusion • Changing dynamics of regulatory framework • Need for stringent regime in handling scams and bad loans	
Block-7: Entrepreneurship	
• Entrepreneurship and Knowledge Management • Entrepreneurship and Sustainability • Building Entrepreneurial Ecosystem • Small Business and Entrepreneurship • Emerging trends in Entrepreneurship • Entrepreneurial Behaviour and Research • Entrepreneurship and Innovation	

Paper Submission Procedure

- Submission for the special issue should be submitted online at http://www.informaticsjournals.com/index.php/gjeis/user/register?registerAs=author
- All submissions will be subject to the standard review process followed by Global Journal of Enterprise Information System (GJEIS).
- All manuscripts must be original and unpublished work.
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The deadline for submission of papers to the special issue is 15th September 2018

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Kesharwani, Sanyukta
Kesharwani, Subodh
Kesharwani, Subodh
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Khanna, Akansha
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Kumaraguru, Ponnurangam
Kurbel, Karl

L

Lall, Brejesh
Lamba, Tripti
Landge, Sagar
Lather, Anu Singh
Lilien, Leszek
Limsarun, Tanakorn
Lobo, Jose

M

Madapusi, Arun
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Mahajan, Ruchi
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Maurya, Sushil. K.
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Missika, Jean-Louis
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Mohan Goyal, Lalit
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Mukherjee, Abhisek
Munshi, Vispi

N

Nadeem Faisal, Chaudhry M.
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Narendra, Preeti
Narula, Anupam
Narula, Parminder
Nath Sharma, Narender
Nayak, Tapan Kumar
nee Bali, Ritu Kochhar
Neely, Andy
Nigam, Rachna
Niranjan, Sunil Kumar

O

Oberoi, Shelly
Oberoi, Shelly
Oberoi Dham, Swati
Olson, David
Organero, Mario Munoz
Othmane, Lotfi Ben
Owusu, Ebenezer Oduro

P

Pakki, Suresh
Pande, Salil
Pandey, Navneet Kumar
Pandey, Shikha
Pandiya, Sudhanshu
Panja, Biswajit
Pardeshi, Veeraj
Patel, Ajay
Piyasirisilp, Teetima
Pradeep Kumar, M.
Pradhan, Rojalin
Prakash, Anuj
Prakash, Gyan
Prakash, Shakti
Prakash Yadav, Gyan
Pramanik, Rupali
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Pratap Singh, Bhanu
Prateek, Manish
Priya Arora, Anu
Priyanka,
Purohit, G. N.
Pushpa Kumar, L.
Pyngavil, Rajesh
Pyngavil, Rajesh S.

R

Radhi, Ali
Raheja, Neha
Rai, Gulshan
Rai, Jyotsna
Rai, Shweta
Rai, Sunny
Raina, Dalip
Rajput, Namita
Rajput, Pranav
Raju, N. V. S.
Raju, Nimiya
Ralli, Neha Chhabra Nee
Ramasubramanian, Hemalatha
Ramayah, T.
Ranjan, Shiv
Rao, Nancy
Rashid, Ammar
Rathee, Rupa
Raut, Prasanna
Rognsoy, Tone M.
Romenkumar Singh, Khundrakpam
Roy, Ramendu
Roy, Tanushree

S

Sagar, Mahim
Sahani, Jay Kishore
Sahay, B. S.
Saini, A. K.
Saini, Anil K.
Salim, Mairaj
Sang, Ankita
Sangwan, Pardeep
Saraswat, Manish
Saraswat, V. K.
Sardana, Anil
Sarita,
Sarkar, Madhulika
Sarkar, Madhulika P.
Sarna, Lokender
Saurabh, Kumar
Sawaridass, A.
Saxena, Anurag
Saxena, Ritesh
Saxena, Vipul
Schneider, Bradley
Sehrawat, Ankita
Sehrawat, Kanchan
Selmi, Tarek
Seth, Ishaan
Setia, Minaxi
Shah, Hassan
Shah, Hassan Ahmad
Shahmahmoudi, Reza
Shailesh, K. S.
Shamrao Shedage, Ajay
Shankar, Ravi
Sharma, Aashima
Sharma, Ashwini
Sharma, Chitra
Sharma, Dhiraj
Sharma, Durgansh
Sharma, Durgesh
Sharma, Gagan Deep
Sharma, K. C.
Sharma, Manu
Sharma, N. K.
Sharma, Neetu

S

Sharma, Nitika
Sharma, Rachna
Sharma, Rahul
Sharma, Rahul
Sharma, Rakhi
Sharma, Ritika
Sharma, S. K.
Sharma, Saurabh
Sharma, Shivam
Sharma, Sudhansh
Sharma, Vaishali
Sharma, Vinita
Sharma et al., Vinay
Shede, Khushal
Shekhar Singh, Siddharth
Sheoran, Dinesh
Sheravi, Sachin
Sherry, A. M.
Shilpa,
Shinde, Ankita
Shivali,
Shivarajappa, M.

Shrivastava, Sarika
Shukla, M.
Shukla, Rajendra Kumar
Shukla, Somendra
Siba, K.
Siddiqui, Fauzia
Simon, Rajbala
Singh, Alok
Singh, Amar
Singh, Amishapriya
Singh, Amit Kumar
Singh, Anurag
Singh, Balwant
Singh, Bhagwan
Singh, Brijesh
Singh, Devika
Singh, Dharam Bir
Singh, Dharm Bir
Singh, Gurbir
Singh, Gurjit
Singh, Himanshu Shekhar
Singh, Kavita
Singh, Manish
Singh, Mili
Singh, Neeraj Kumar
Singh, Nilu
Singh, Panchali
Singh, Prateek
Singh, Roma
Singh, Sanjeet
Singh, Shikha
Singh, Surender
Singh, Vinod Kumar
Singh, Yashpal
Singh, Yashvant
Singh Chahar, Shweta
Singh Dhindsa, Kanwalvir
Singh Rawat, Kratika
Singh Tandon, Manvinder
Singhal, Kunal
Singholi, Ajay
Singholi, Ajay K. S.
Sinha, Ritu
Siwach, Parveen
Sobolevsky, Stanislav
Solanki, Nakul
Somani, Yash R.
Somnath Shinde, Rajesh
Son, Joon
Sood, Reeva
Srivastava, Sona
Subodh Kesharwani, Dr.
Subramani, Vaidehi
Suresh, P. V.
Sushil,
Suyal, Kamladevi
Syed, Asif Ali

T

Talan, Amogh
Talan, Gaurav
Talwar, Ritu
Tandon, Deepak
Tandon, Manvinder
Tariyal, Monica
Tarun,
Tayal, Devender K.
Tewari, Sanjay
Thakur, Tripta
Tikkha, Neelam G.
Tikkha, Neelam. G.
Timbadia, Virag A.
Tiwari, Akhilesh
Tiwari, Mahendra
Tiwari, Pooja
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Tyagi, Narendra Kumar
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U

Ujala, Umair
Ujala, Umair

V

Vadi, Vikas Rao
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Wadhwa, Bharat
Wadhwa, Soni
Wadhwa, Subhash
Waghodekar, P. H.
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Weerakoon, Kapila G.
Wilde, Jason

Y

Yadav, B. S.
Yadav, R. C.
Yadav, Sarad Kumar
Yadav, Suman
Yadav, Sunil Kumar
Yadav, Sunil Kumar

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B

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IES Management College and Research Centre
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IGDTUW
IGIT
IGNOU
IGNOU Regional Centre
IGNOU, School of Tourism and Hospitality Service Management (SOTHSM)
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IIMT Engineering College
IIPA
IIT
IIT-D & IIM-A
IITM
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JIIT University
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KRDWG
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MAIMT
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Shaheed Bhagat Singh College, University of Delhi
Shambunath Institute of Engineering and Technology
Sharda University
Shinawatra International University
Shinawatra University
Shri Mata Vaishno Devi University
Shri Venkateshwara University
Somaiya Vidya Vihar
SOMS, IGNOU
Sri Aurobindo College (Eve), University of Delhi
Sri Aurobindo College, Delhi University
SRI Aurobindo College, University of Delhi
Sri Guru Granth Sahib World University
SRM University
SRMSCET
St John's College
Systems at EWOS Group

T

Tata Consultancy Services
TCS
Thapar University
The Australian College of Kuwait
The Chinese University of Hong Kong
The Univeristy of Faisalabad
The University of Faisalabad
Tilak P.G. College
Trinity University

U

UIM
United College of Engineering and Research
United Institute of Management
Universidad Carlos III de Madrid
Universita di Genova
Università di RTM NU
University of Allahabad
University of Dammam
University of Delhi
University of Delhi South Campus
University of Kelaniya
University of Kota
University of Manchester
University of Michigan-Flint
University of Nebraska-Lincoln
University of Ontario Institute of Technology
University of Pecs

University of the South Pacific
University School of Information and Communication Technology, Guru Gobind Singh Indraprastha University
University School of Management Studies, GGS Indraprastha University
University Utara Malaysia
Unviersiti Sains Malaysia
UP Athletics Association
UP Rajarshi Tandon Open University
UPES
UPRTOU
UPVUDSM University
URKUND

V

Vajja Technologies Pvt Ltd.
Vidya College of Engineering
Vidyavardhini's College of Engineering and Technology
Vishveshwarya Group of Institutions
Vishveshwarya Institute of Engineering &Technology
Vishveshwarya School of Business Management (VSBM)
Vivekanad Institute of Professional studies (VIPS)
Vivekananda Institute of professional studies, GGSIP University

W

Western Michigan University
Wipro Limited

X

XLRI Jamshedpur – Xavier School of Management

Z

Zakir Husain P. G. Evening College

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Global Journal of Enterprise Information System

GJEIS in collaboration with Informatics Publishing Limited and KARAM Society, publishes a peer-reviewed open access e-journal in Enterprise Information System (EIS) areas of business which covers IT linkages in business, finance, marketing, management, organizational behaviour, buyer behaviour and other relevant fields. It also covers many aspects in Information System and related areas. The journal provides an international forum for the exchange of ideas, principles and processes concerning the application of diverse topics of EIS to organizations, institutions and the world at large. GJEIS considers research submissions in several categories but revolves around three buzzwords Enterprise Information and System Journal takes into consideration professional plagiarism detection and prevention technology for it's scholarly publication and research article in order to ensure the originality of written text before publication. The GJEIS receives submissions only through it's journal website http://www.informaticsjournals.com/index.php/gjeis .

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Type of Articles

We are soliciting different types of article which mainly focuses on research issues in the EIS and IT related areas.

1. Empirical Research Papers (ERP) report on completed EIS research that complies with rigorous scientific standards. ERP present original results of completed research studies with the aim of obtaining feedback from fellow researchers. [Limit 16 Pages]

2. Theme Based Papers (TBP) are short papers that present the design and preliminary results of ongoing EIS research studies with an endeavor of obtaining early feedback and further guidance from experts and peers. TBP will be evaluated using the same academic standards as regular research papers (except for completeness requirements). [Limit 12 Pages]

3. Case Study Based Papers (CSBP) describes real-life experiences with EIS that authors wish to share with fellow practitioners and EIS researchers. They focus on problems and solutions in specific contexts. Their aim may be to help other practitioners facing similar problems or to solicit help and possible solutions from other practitioners (or EIS researchers). [Limit 10 Pages]

4. View Point (VP) is a situation for which something is pragmatic or considered as a point of view. The purpose of VP is to share different views about the IT related products and what individual think about that. [Limit 8 Pages]

5. Research Thought (RT) can refer to the opinion or arrangement of research ideas that effect from thinking, the act of producing thoughts on diverse interdisciplinary collaborative research areas or tools with which researcher can formulate it's research paper, choose a method for undertaking a study, write up for findings and discuss the outcomes in a discussion section. In this head author can throw a light on various research tools which can be helpful in formulating a research paper. [Limit 5 Pages]

6. Student Research Initiatives (SRI) is a research initiative by a grass-root researcher and technocrats. This head facilitate students/learners to pursue independent academic and imaginative effort and engage in research under the supervision of a faculty mentor with an intention to heighten student research as a means of collaborative learning, critical thinking and the establishment of knowledge. [Limit 12 Pages]

7. Dissertation Snapshot (DS) is an excerpt from a researcher's own thesis or dissertation which had been previously published or submitted in the form of research project or its own doctoral work. The rationale is to raise the curtain on an application and thought used by researcher in a brief manner with an intention to promote the future researchers to sequel their thoughts. [Limit 10 Pages]

8. Questionnaire Format (QF) A new philosophy called "Questionnaire Format" had been introduced, in which we are going to publish distinguish questionnaires that navigates the usefulness of it in building research and how to communicate with the respondents . The rationale behind introducing this QF is to give a glimpse about the structure and the pedagogy. QF on the other hand provides a niche to grass-root researcher about their various thoughts related to preliminary research and facilitate them in linking with a respective research papers which the researcher had visualize or going to plan in a coming future. This is a new inventiveness under the GJEIS Academic Social Responsibility(GASR) and would be complimentary/charitable in nature. [Limit 5 Pages]

9. Book Review (BR) is a literary criticism in which a book is analyzed based on content, style, and merit. BR can be a primary source opinion piece, summary review or scholarly review. Books can be reviewed for printed periodicals, magazines and newspapers, as school work, or for book websites on the internet. A book review's length may vary from a single paragraph to a substantial essay. Such a BR may evaluate the book on the basis of personal taste. Reviewers may use the occasion of a book review for a display of learning or to promulgate their own ideas on the topic of a fiction or non-fiction work. [Limit 3 Pages]

10. Biographical Note of the Luminary in an Area of IS We as per our culture acknowledge in every issue a great leader, Entrepreneur, Technocrats, Academician etc., who contribute a lot to a society in an area of IS. [Limit 2 Pages]

11. Great Enterprise Contribution to Society in Information System Perspectives deals with those enterprises contributing a lot to the society, and considering themselves a wizard in the field of Information System, we publish their profile, with the intention that their creation/contribution would be viewed and duly appreciated by the corporate and academics, all-around the globe. The purpose behind this is to broadcast the most visually powerful, immersive and engaging rich media applications on the Web. [Limit 2 Pages]

12. Award is something given to a person or a group of people to identify their fineness in a definite field especially in an area of EIS, it is rather a certificate of excellence for their contribution in academia or in a corporate world. This start throws a light on an entity or a gamut of researcher who had been honored for their extra ordinary input. [Limit 2 Pages]

13. Homage means great respect and tribute, or something done to honor a person. We in GJEIS pay homage to our ancestor's and say prayers in admiration to their memory which includes academicians, technocrats and great thinkers. The special respect would be shown publicly by sharing their achievements and contributions in writing which includes images, excerpts, testimonials, write-up, etc. [Limit 2 Pages]

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