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VISION

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TRANSLATIONS CARRIED OUT IN THE SPANISH TRANSLATION CENTERS (ON BASIS OF THE WORKS OF SCIENTISTS OF ANTIQUITY AND MUSLIM EAST)

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ABSTRACT

Up to the present many researches is conducted on due to the history of Spanish translation centers (XII-XIII centuries). However the complete list of the translations created at the Spanish translation centers, such as Toledo, Saragossa, Segovia, Navarra and Barcelona isn't published. We have made the list of the translations created at these translation centers on the basis of results of a research on the subject "The Place of the Toledo School in Studying of Scientific Heritage of Scientists of the East in Europe". Works are classified by on sciences and given in a chronological order in the list. It is necessary to emphasize, the listed works below strongly influenced to development of science of medieval Europe. The translator, translation method, date and place of translation and the role of it in the development of the region's science are not covered. It is obvious that the cause of it is the lack of a well-structured complete scientific book that combines all information in this sphere. Terms above require carrying out a deep research in this sphere. Scientific theories of scholars of Medieval East crossed the threshold of western countries and it was the basis of new science formation and its further development. Plato of Tivoli in a cooperation with Abraham bar-Hiyya translated 2 works. Yehuda ben Moshe in cooperation with Juan D'Aspa translated 2 works, and with Guillen Arremon translated 2 works.

KEYWORDS: Toledo, Saragossa, Segovia, Navarra, Barcelona, translations, translators, exact sciences, natural sciences, humanities.

1. INTRODUCTION

It should be noted that a lot of investigations have been carried out till these days on the life's and heritage of scientists Medieval Muslim East. Although a number of them were fundamental researches, information about their translations and investigations in Europe is general. If we have a look at these works, when the translation of a scholar's work was investigated in Europe in XII-XIII centuries, only the century is given. The translator, translation method, date and place of translation and the role of it in the development of the region's science are not covered. It is obvious that the cause of it is the lack of a well-structured complete scientific book that combines all information in this sphere. Terms above require carrying out a deep research in this sphere.

If we have a look at the activity of Spanish translation centers of XII – XIII centuries, a number of works of scientists of Muslim East were translated into Castilian, Jewish and Latin languages. Scientific theories of scholars of Medieval East crossed the threshold of western countries and it was the basis of new science formation and its further development.

Составлено список

2. RESULT / EXPERIMENTAL (MATERIALS AND METHODS)

2.1. Basing on the careful analysis of the scientific literature devoted to history of the translations in Spain in XII–XIII centuries, compiled list of the translations created at Spanish translation centers, such as Toledo, Saragossa, Segovia, Navarra and Barcelona. Works are classified by on sciences and given in a chronological order in the list.

Total of works: 122, number of authors: 47 (including, 10 scientists of Antiquity, 37 scientists of Medieval). 57 works in the field of the exact sciences (including, 8 of them works of ancient scientists, the 49 works of scientists of Medieval); 33 works on natural sciences (including, 11 of them works of ancient scientists, the 22 works of scientists of Medieval); 32 works on the humanities (including, 11 of them works of ancient scientists, the 16 works of scientists of Medieval, 5 of them on religion and national fairy tales).

Total of translations: 158, number of translators: 35 (including, 26 translators are representatives of the Toledo school, 3 translators worked in Saragossa, 2 translators worked in Barcelona, 2 translators worked in Segovia and Navarra). From them, Gerard of Cremona translated 37 works, John of Seville translated 16 works, Yehuda ben Moshe translated 11 works, Michael Scot translated 10 works, Domingo Gundisalvo translated 9 works, Mark of Toledo translated 8 works, Herman of German translated 7 works, Herman Dalmatin translated 6 works. Adelard of Bath, Alfred of Sareshel, Plato of Tivoli and Isaac ibn Sid translated 4 works each. Petrus Alphonsi and Robert of Chester translated 3 works each. Rudolph of Bruges, Hugh of Santalla and Edigio de Tebladis translated 2 works each. Robert of Ketton, Abraham de Toledo, Bonaventura of Siena, Alvaro de Oviedo and Ferrando de Toledo translated 1 works each. Domingo Gundisalvo in cooperation with Abraham ibn Daud translated 5 works, and with John of Spain was translated 5 works. Plato of Tivoli in a cooperation with Abraham bar-Hiyya translated 2 works. Yehuda ben Moshe in cooperation with Juan D'Aspa translated 2 works, and with Guillen Arremon translated 2 works. Robert of Ketton, Herman Dalmatin, Peter of Toledo

and Mohammed in cooperation translated 1 works. Yehuda ben Moshe and Garci Perez in cooperation translated 1 works, Edigio de Tebladis and Pietro de Reggio in cooperation translated 1 works, Abraham de Toledo and Bernardo el Arabigo translated in cooperation 1 works. Samuel ha-Levi, Joan de Mesina, Joan de Cremona and Yehuda ben Moshe in cooperation translated 1 works.

2.2. Comparison, generalization, observation, systemic analysis, data grouping, theoretical cognition, the method of analogy and historical method.

TABLE 1. The list of translations carried out in the Spanish translation centers

<i>Nº</i>	<i>Name of the work and Author</i>	<i>Name of the translation</i>	<i>Translator</i>	<i>Target language</i>	<i>Year and translation center</i>
WORKS ON THE ASTRONOMY, MATHEMATICS, GEOMETRY, PHYSICS, MECHANICS					
WORKS OF SCIENTISTS OF ANTIQUITY					
1.	«On the Heavens and the World» Aristotle (384 BC – 322 BC)	«De caelo et mundo»	Gerard of Cremona	Arabic →Latin	1165 Toledo
2.	Same work	«De caelo et mundo»	Domingo Gundisalvo	Arabic →Latin	1180 Toledo
3.	Same work	«De caelo et mundo»	Michael Scot	Arabic →Latin	1230 Toledo
4.	«Physics» Aristotle	«Physica»	Gerard of Cremona	Arabic →Latin	1175 Toledo
5.	Same work	«Libre Phisicorum»	Michael Scot	Arabic →Latin	1230 Toledo
6.	«Elements of Geometry» Euclid (325 BC –265 BC)	«Elementorum»	Adelard of Bath	Arabic →Latin	1120 unknown
7.	Same work	«Elementorum»	Herman Dalmatin	Arabic →Latin	1140 Saragossa
8.	Same work	«Elementorum»	Gerard of Cremona	Arabic →Latin	between 1160–1187 Toledo
9.	«On the Measurement of the Circle» Archimedes (287 BC – 212 BC)	«De mensura circuli»			
10.	«Sphaerica» Theodosius of Bithynia (c. 160 BC – c. 100 BC)	«Sphaerics»	Abraham bar-Hiyya and Plato of Tivoli	Arabic→ Yiddish →Latin	between 1134—1145 Barcelona
11.	«Almagest» Ptolemy (90 – 168)	«Almagest»	Gerard of Cremona	Arabic →Latin	1167 Toledo

12.	« Planisphere » Ptolemy	«Planisphaerium»	Herman Dalmatin	Arabic →Latin	1143 Saragossa
13.	Same work	«Planisphaerium»	Rudolph of Bruges	Arabic →Latin	1144 Toledo
14.	« Tetrabiblos » Ptolemy	«Quadripartitum»	Abraham bar- Hiyya and Plato of Tivoli	Arabic→ Yiddish →Latin	1138 Barcelona
15.	Same work	«Tetrabiblon» or «Quatriparito»	Yehuda ben Moshe	Arabic→ Castilian → Latin	1271 – 1275 Toledo
16.	Same work	«Quatriparito»	Edigio de Tebladis	Arabic→ Latin	between 1252 – 1272 Toledo
WORKS OF SCIENTISTS OF MEDIEVAL EAST					
17.	« On the mysteries of obstruction » Mashallah ibn Athari (740–815)	«De rebus eclipsium»	John of Seville	Arabic →Latin	till 1133 Toledo
18.	Same work Mashallah	«Epistola Messahallah in rebus eclipsis Lune»			between 1133–1142 Toledo
19.	« The book about two lots » Mashallah	«De receptione planetarum siue de interrogationibus»			
20.	« About values of planets in a horoscope » Mashallah	«De significationibus planetarum in nativitate»			
21.	« The Book Known as the Twenty-Seventh » Mashallah	«De interpretatione cogitationis»			
22.	« On the knowledge of the movement of the world » Mashallah	«De elementis et orbibus»	Gerard of Cremona	Arabic →Latin	between 1160– 1178 Toledo
23.	« Book of Nativities » Umar Ibn al-Farrukhan al-Tabari (w.b. 762)	«De nativitatibus secundum Omar»	John of Seville	Arabic →Latin	between 1133–1142 Toledo
24.	« Big book of horoscopes » al-Tabari	the name of the translation isn't known	Hugh of Santalla	Arabic →Latin	XII c. Saragossa
25.	« The Introduction to the Science of the Judgments of the Stars » Sahl ibn Bishr al-Israili	«Introductorium ad astrologiam seu de iudiciis [de principiis iudiciorum] seu de	Herman Dalmatin	Arabic →Latin	between 1140–1160 Saragossa

	(c. 786–845)	interrogationibus»			
26.	«The treatise on mundanny astrology» Sahl ibn Bishr	«Prognostica de reuolutionibus»			1138 Saragossa
27.	«Book of Elections According to the Twelve Houses» Sahl ibn Bishr	<u>De electionibus</u>			
28.	«The book on similar subject» Sahl ibn Bishr	«Liber temporum»	Gerard of Cremona	Arabic →Latin	between 1160–1178 Toledo
29.	«The treatise about judgments» Sahl ibn Bishr	«De iudiciis»			
30.	«Book of Birth» Abu Ali al-Khayyat (770–835)	«De nativitatibus»	Plato of Tivoli	Arabic →Latin	1136 Barcelona
31.	Same work	«De iudiciis nativitatum»	John of Seville	Arabic →Latin	1153 Toledo
32.	«Zīj» Mukhammad ibn Musa al-Khwarizmi (783–850)	«Tavole astronomiche»	Adelard of Bath	Arabic →Latin	1126 unknown
33.	Same work	the name of the translation isn't known	Herman Dalmatin	Arabic →Latin	between 1140–1160 Saragossa
34.	Same work	«Tavole astronomiche»	Robert of Chester	Arabic →Latin	Unknown Segovia
35.	«The Book of Addition and Subtraction According to the Hindu Calculation» al-Khwarizmi	«Liber Ysagogarum Alchorismi»	Adelard of Bath	Arabic →Latin	between 1120–1130 unknown
36.	Same work	«Algoritimi de numero indorum»	John of Spain and Domingo Gundisalvo	Arabic→Castilian → Latin	between 1180–1190 Toledo
37.	«The Compendious Book on Calculation by Completion and Balancing» al-Khwarizmi	«Liber algebrae et almucabala»	Robert of Chester	Arabic →Latin	1145 Segovia
38.	Same work	«Liber Alchoarismi de et almucabila tractaus»	Gerard of Cremona	Arabic →Latin	between 1160–1178 Toledo

39.	«The big book of introduction to science about stars» Abu Ma'shar al-Balkhi (787–886)	«Introductorium in Astronomiam»	John of Seville	Arabic →Latin	1133 Toledo
40.	Same work	«Liber introductorius in astronomiam Albumasaris»	Herman Dalmatin	Arabic →Latin	1140 Saragossa
41.	«The small book of introduction to science about stars» Abu Ma'shar al-Balkhi	«Minus Liber introductorius in astronomiam»	Adelard of Bath	Arabic →Latin	XII c. unknown
42.	«Elements of astronomy on the celestial motions» Ahmad al-Farghani (798–865)	«Rudimentis astronomiae»	John of Seville	Arabic →Latin	1135 Toledo
43.	Same work	«De rudimentis astronomiae»	Gerard of Cremona	Arabic →Latin	1175 Toledo
44.	«On the Revolutions of the Years» Al-Kindi (800–873)	«Introductorium maius» or «De magnis coniunctionibus»	John of Seville	Arabic →Latin	between 1133–1142 Toledo
45.	«The Book of the Judgments of the Stars» Al-Kindi	the name of the translation isn't known			
46.	«On Optics» Al-Kindi	«Optica»	Gerard of Cremona	Arabic →Latin	between 1160–1178 Toledo
47.	«A treatise on the celestial spheres» Qusta ibn Luqa (820–912)	«Libro de la faïçon dell espera»	Yehuda ben Moshe and Juan D'Aspa	Arabic→ Castilian	1259 Toledo
48.	Same book	«Libro de la faïçon dell espera» (corrected version)			1277 Toledo
49.	«On the Sector-Figure» Thābit ibn Qurra (836–901)	the name of the translation isn't known	Gerard of Cremona	Arabic →Latin	between 1160–1178 Toledo
50.	«The book about horoscopes» Abu Bakr al-Khasan (IX c.)	«De Nativitatibus»	John of Seville	Arabic →Latin	between 1133–1142 Toledo
51.	«Revolution birth» al-Khasan	«De revolutionibus nativitatum»	Plato of Tivoli	Arabic →Latin	XII c. Barcelona
52.	«Book of Algebra»		John	Arabic	between

	Abū Kāmil (850–930)	«Liber mathematicis»	of Seville	→Latin	1133–1142 Toledo
53.	« Book of Zīj » al-Battānī (858–929)	«De motu stellarum»	Plato of Tivoli	Arabic →Latin	1116 Barcelona
54.	« Introduction to the Art of Judgments of the Stars » Abu al-Saqr al-Qabisi (died 967)	«Liber introductorius ad magisterium judiciorum astrorum»	John of Seville	Arabic →Latin	1144 Toledo
55.	« Book of Fixed Stars » Abd al-Rahman al-Sufi (903 – 986)	«Los IIII libros de las estrellas de la ochaua espera»	Yehuda ben Moshe and Guillen Arremon	Arabic→ Castilian	1256 Toledo
56.	Same book	«Los IIII libros de las estrellas de la ochaua espera»	Samuel ha-Levi, Joan de Mesina, Joan de Cremona and Yehuda ben Moshe	Arabic→ Castilian	1276 Toledo
57.	« Canon of al-Mansor » Author unknown	«Iudicia Almansoris»	Plato of Tivoli	Arabic →Latin	1136 Barcelona
58.	« The book about the Astrolabe » Maslamah Ibn Ahmad al-Majriti (died 1008)	«Liber de compositione astrolabii»	Rudolph of Bruges	Arabic →Latin	XII c. Toledo
59.	« Cosmography » (Part of «Epistles of the Brethren of Purity») The Brethren of Purity (X c.)	«Cosmographia»	Domingo Gundisalvo	Arabic →Latin	1180 Toledo
60.	« Book of Optics » Ibn al-Haytham (965–1040)	«Liber de opticus»	Gerard of Cremona	Arabic →Latin	between 1160– 1178 Toledo
61.	« Book of on the Configuration of the World » Ibn al-Haytham	«Libro de la Construction del Universo»	Isaac Ibn Sid	Arabic→ Castilian	between 1263 – 1277 Toledo
62.	« On the Heavens and the World » Avicenna (980–1037)	«De cello et mundo»	Domingo Gundisalvo	Arabic →Latin	between 1140 – 1160 Toledo
63.	« Physics » (Part of «The book of healing»)	«Physica»			1180 Toledo

	Avicenna				
64.	« Commentary on Ptolemy's Tetrabiblos » Abu'l Hasan Ali ibn Ridwan Al-Misri (988–1061)	«Quatriparito»	Edigio de Tebladis	Arabic → Latin	between 1252 – 1272 Toledo
65.	« Tables of Toledo » Abū Ishāq Ibrāhīm al-Zarqālī (1029–1087)	«Canonis Arzachel»	Gerard of Cremona	Arabic → Latin	between 1160–1178 Toledo
66.	« Treatise of the aṣafeha » al-Zarqālī	«Tratado de la aṣafeha»	Yehuda ben Moshe and Guillen Arremon	Arabic → Castilian	1231 Toledo
67.	Same book	«Libro de la Aṣafeha»	Ferrando de Toledo	Arabic → Castilian	1256 Toledo
68.	Same book	«Libro de las armellas o de la aṣafeha»	Isaac Ibn Sid	Arabic → Castilian	between 1263 – 1277 Toledo
69.	Same book	«Libro de la Aṣafeha»	Abraham de Toledo and Bernardo el Arabigo	Arabic → Castilian	1277 Toledo
70.	« The book of theoretical astronomy » Nur ad-Din al-Bitruji (died ca. 1204)	«De motibus celorum circularibus»	Michael Scot	Arabic → Latin	1217 Toledo
71.	« Correction of the Almagest » Jabir ibn Aflah (1100–1150)	«Rectus Almagestus»	Gerard of Cremona	Arabic → Latin	between 1170–1178 Toledo
72.	« Book on the Judgment of the Stars » Abu l-Hasan Ali ibn Abi al-Rijal (X – XI)	«De judiciis astrologiae»	Alvaro de Oviedo	Arabic → Latin	Until 1254 Toledo
73.	Same book	«El Libro conplido en los iudizios de las estrellas»	Yehuda ben Moshe	Latin → Castilian	1254 Toledo
74.	Same book	«Liber de Judiciis Astrologiae»	Edigio de Tebladis and Pietro de Reggio	Castilian → Latin	between 1252 – 1272 Toledo
75.	«Universal Table» Ibn Jalaf of Cordoba	«Lamina Universal»	Isaac Ibn Sid	Arabic → Castilian	between 1263 – 1277

	(XI)				Toledo
76.	«The Aim of the Sage» Author unknown	«Picatrix»	Yehuda ben Moshe	Arabic→ Castilian	1256 Toledo
77.	Same work	«Picatrix»		Castilian → Latin	1258 Toledo
78.	«Books of knowledge of Astronomy»	«Libros del saber de Astronomía»		Arabic→ Castilian	1259 Toledo
79.	«The book about crossing» Abu Said Ubaid-Allah (?)	Libro de las cruces		Arabic→ Castilian	
80.	«Alfonsine tables» a group of authors led by Yehuda ben Moshe and Isaac ibn Sid (XII)	«Tabulae alphonsinae»		Castilian → Latin	1277 Toledo
81.	«Book a round astrolabe» Author unknown	«Libro del astrolabio redondo»	Isaac Ibn Sid	Arabic→ Castilian	between 1263 – 1277 Toledo

MEDICAL WORKS**WORKS OF SCIENTISTS OF ANTIQUITY**

82.	«On Airs, Waters and Places» Hippocrates (460 BC –370 BC)	«De aere aquis locis»	Mark of Toledo	Arabic →Latin	between 1210 – 1231 Toledo
83.	«Pulsation» Galen (129 – 200)	«De utilitate pulsus»			
84.	«Need to pulsation» Galen	«De tactu pulsus»			
85.	«Structure of drugs» Galen	«De motibus liquidis»			
86.	«Movement muscle» Galen	«Se motu membrorum»			

WORKS OF SCIENTISTS OF MEDIEVAL EAST

87.	«Practice» Yahya ibn Sarafyun (IX c.)	«Breviarium medicine»	Gerard of Cremona	Arabic →Latin	between 1160– 1178 Toledo
88.	«Phases» Al-Kindi	«De Gradibus»			
89.	«Book of the Ten Treatises of the Eye» Hunayn ibn Ishaq (809–877)	«Liber de oculorum»			

90.	« Introduction to Galen's works » Hunayn ibn Ishaq	«Isagoge ad Tegni Galieni»	Mark of Toledo	Arabic →Latin	1210–1234 Toledo
91.	Same work	«Liber isagogarum»			
92.	« Book of definitions and descriptions » Isaac Israeli ben Solomon (832–932)	«De definitionibus»	Gerard of Cremona	Arabic →Latin	between 1160–1178 Toledo
93.	Same work	«De definitionibus»	Domingo Gundisalvo	Arabic →Latin	1180 Toledo
94.	« The book about primary elements » ben Solomon	«De elementis»	Gerard of Cremona	Arabic →Latin	between 1160–1178 Toledo
95.	« The medical book devoted to Mansour » Muhammad ibn Zakariya ar-Razi (865–925)	«Liber almansoris»			
96.	« The book about division » ar-Razi	«Liber divisionum»			
97.	« Introduction to medicine » ar-Razi	«Introductio in medicinam»			
98.	« Diseases of joints » ar-Razi	«De egritudinibus iuncturarum»			
99.	« The comprehensive book on medicine » ar-Razi	«Locorum quorundam tractatum medecina»			
100.	« Kitab al-Tasrif » Abu al-Qasim al-Zahrawi (936–1013)	«Concessio ei data qui componere haud valet»			
101.	« The Canon of Medicine » Avicenna	«Liber Canonis»			
102.	« Book of Urjuza » («The poem about medicine») Avicenna	«Cantica de Medicina»			
103.	« Commentary on Galen's Ars Parva » Abu'l Hasan Ali ibn Ridwan Al-Misri	«Expositio ad Tegni Galeni»			

104.	«The book about ordinary drugs» Ali Ibn al-Husain Ibn al-Wafid (997–1074)	«De medicamentis simplicibus»			
105.	Same book	«El Libro conplido en los iudizios de las estrellas»	Yehuda ben Moshe	Latin → Castilian	1254 Toledo
106.	«Lapidary» Author unknown Ar. trans by Abu-l Ayis of Chaldean	«Lapidario»	Yehuda ben Moshe and Garci Perez	Arabic→ Castilian	1279 Toledo

WORKS ON THE BIOLOGY, METEOROLOGY AND CHEMISTRY**WORKS OF SCIENTISTS OF ANTIQUITY**

107.	«History of animals» Aristotle	«Historia animalium»	Michael Scot	Arabic → Latin	1271 – 1220 Toledo
108.	«Appearance of animals» Aristotle	«De generatione animalium»			
109.	«Bodies of animals» Aristotle	«De partibus animalium»			
110.	«Meteorology» Aristotle	«Meteorologica»	Gerard of Cremona	Arabic → Latin	1160–1187 Toledo
111.	«About plants» Nicolaus of Damascus (64 BC – 4 AD)	«De plantis»	Alfred of Sareshel	Arabic → Latin	XII c. Toledo
112.	«The book about nature secrets» Apollonius of Tyana (1–98)	«Liber de secretis naturae»	Hugh of Santalla	Arabic → Latin	XII c. Saragossa

WORKS OF SCIENTISTS OF MEDIEVAL EAST

113.	«Book of the Composition of Alchemy» Jabir ibn Hayyan (721–815)	«Liber de compositione alchimiae»	Robert of Chester	Arabic → Latin	1144 Segovia
114.	«Book of secrets» ar-Razi	«Secretum secretorum»	Gerard of Cremona	Arabic → Latin	between 1160–1187 Toledo
115.	«Mineralogy» (Part of «The book of healing») Avicenna	«Avicennae Mineralia»	Alfred of Sareshel	Arabic → Latin	XII c. Toledo

116.	« About animals » (Part of «The book of healing») Avicenna	«De animalibus seu Abbreviatio Avicenna de animalibus» or «De animalium»	Michael Scot	Arabic →Latin	1232 Toledo
WORKS ON THE PHILOSOPHY, LOGICIANS, THEOLOGY AND LITERATURE					
WORKS OF SCIENTISTS OF ANTIQUITY					
117.	« The book about emergence and destruction » Aristotle	«De Generatione et Corruptione»	Gerard of Cremona	Arabic →Latin	between 1160–1187 Toledo
118.	« Posterior Analytics » Aristotle	«Analytica Posteriora»			
119.	« Metaphysics » Aristotle	«Metaphysica»	Domingo Gundisalvo	Arabic →Latin	1180 Toledo
120.	Same work	«Metaphysica»	Michael Scot	Arabic →Latin	1220 – 1230 Toledo
121.	« On the Soul » Aristotle	«De Amina»			1230 Toledo
122.	« Nicomachean Ethics » Aristotle	«Ethica Nicomachea»			1220 – 1230 Toledo
123.	Same work	«De Moribus ad Nicomachum»	Herman of German	Arabic →Latin	1240–1256 Toledo
124.	« Rhetoric » Aristotle	«Ars rhetorica»			
125.	« Ethics » Aristotle	«Summa Alexandrinorum»			1243 – 1244 Toledo
126.	« Poetics » Aristotle	«Ars poetica»			1256 Toledo
127.	« Canon of Kings » Ptolemy	«Canon»			1240–1256 Toledo
128.	« On Sense » Alexander of Aphrodisias (fl. 200 AD)	«De intellectu»	Domingo Gundisalvo	Arabic →Latin	1180 Toledo
129.	Same work	«De intellectu»	Gerard of Cremona	Arabic →Latin	1187 Toledo
130.	« The Theology of Aristotle » Plotinus (205–270)	«Theologia Aristotelis»	Alfred of Sareshel	Arabic →Latin	XII c. Toledo
WORKS OF SCIENTISTS OF MEDIEVAL EAST					
131.	« On the Difference between the Spirit and the Soul » Qusta ibn Luqa	«De diffrentia spiritus et anima»	John of Seville	Arabic →Latin	between 1133–1142 Toledo
132.	« The book about definition and »	«De ortu scientiarum»	Abraham ibn Daud and	Arabic→ Yiddish	between 1150–1180

	classification of sciences» Abu Nasr al-Farabi (873–950)		Domingo Gundisalvo	→Latin	Toledo
133.	«Classification of sciences» al-Farabi	«De scientiis»	Gerard of Cremona	Arabic →Latin	between 1160–1187 Toledo
134.	«Indication of ways of happiness» al-Farabi	«Liber excitativus ad viam felicitatis»	John of Spain and Domingo Gundisalvo	Arabic→ Castilian → Latin	1176–1178 Toledo
135.	«Being of questions» al-Farabi	«Fontes quastionum»			
136.	«The book about sense of reason» al-Farabi	«De intellectu»			
137.	«The book about rhetoric» al-Farabi	«Ars rhetorica»	Herman of German	Arabic →Latin	between 1240–1256 Toledo
138.	«The book about a verse» al-Farabi	«Ars poetica»			
139.	«Epistles of the Brethren of Purity» The Brethren of Purity (X c.)	«In artem logicae demonstrationis»	Domingo Gundisalvo	Arabic →Latin	1179 Toledo
140.	«The book of healing» Avicenna	«Sufficientia»	John of Seville	Arabic →Latin	between 1133–1142 Toledo
141.	«The book about soul» (Part of «The book of healing») Avicenna	«Liber de Anima»	Abraham ibn Daud and Domingo Gundisalvo	Arabic→ Yiddish →Latin	between 1152–1166 Toledo
142.	«Metaphysics» (Part of «The book of healing») Avicenna	«Metaphysica»	Domingo Gundisalvo	Arabic →Latin	1180 Toledo
143.	«The comments to the Posterior Analytics» (Part of «The book of healing») Avicenna	«Commentario Analytica Posteriora»	John of Spain and Domingo Gundisalvo	Arabic→ Castilian → Latin	between 1176–1190 Toledo
144.	«Source of Life» Solomon ibn Gabirol (1021 – 1058)	«Fons vitae»	Abraham ibn Daud and Domingo Gundisalvo	Yiddish →Latin	1150 Toledo
145.	«Aims of Philosophers»	«Liber Algazel»		Arabic→	between

	Al-Ghazali (1058–1111)			Yiddish →Latin	1152–1166 Toledo
146.	«The book about the reasons» The author is unknown	«Liber de causis»	Gerard of Cremona	Arabic →Latin	1187 Toledo
147.	Same book	«Liber de causis»	Alfred of Sareshel	Arabic →Latin	XII c. Toledo
BOOKS ON RELIGION AND NATIONAL FAIRY TALES					
148.	«Quran»	«Alchoran»	Robert of Ketton, Herman Dalmatin, Peter of Toledo and Mohammed	Arabic →Latin	1141 Toledo or Navarra
149.	Same book	«Alchoran»	Robert of Ketton	Arabic →Latin	1143 Navarra
150.	Same book	«Alchoran»	Mark of Toledo	Arabic →Latin	1211 – 1212 Toledo
151.	«The 17th surah of the Qur'an»	«La Escala de Mahoma»	Abraham de Toledo	Arabic→ Castilian	1264 Toledo
152.	Same book	«Muhammad échelle»	Bonaventura of Siena	Castilian→ French	1264 Seville
153.	«Panchatantra»	the name of the translation isn't known	Petrus Alphonsi	Arabic →Latin	between 1106 – 1140 Saragossa
154.	Same book	«Calila e Dimna»	Yehuda ben Moshe	Arabic→ Castilian → Latin	between 1252–1284 Toledo
155.	«One Thousand and One Nights»	«Unus mille et noctes»	Petrus Alphonsi	Arabic →Latin	between 1106 – 1140 Saragossa
156.	Same book	the name of the translation isn't known	Yehuda ben Moshe	Arabic→ Castilian → Latin	between 1252–1284 Toledo
157.	«Sinbad the Sailor»	the name of the translation isn't known	Petrus Alphonsi	Arabic →Latin	between 1106 – 1140 Saragossa
158.	Same book	the name of the translation isn't known	Yehuda ben Moshe	Arabic→ Castilian → Latin	between 1252–1284 Toledo

3. CONCLUSIONS

Scientific theories of Eastern thinkers came into all Western worlds through translations from this list. They were basis and impact to further development of science in the continent. These works had been reliable and the most referable source for many centuries for European scientists and the fact that it was the main course book in the continent proves the given idea.

If we consider that the manuscripts of some books of listed scientists have not been preserved so far and their texts have been extended only through Latin translations, the significance of translation works which were made in Spain in XII-XIII centuries rises.

Therefore, incomparable works of East thinkers were the reasonable main source for the development of Europe folk scientific and spiritual potential. It is determined that among these translated works their total number was rather bigger and they were translated for many times. Further age of West scientists used translations particularly of Toledo schools and it shows us the significance of this certain scientific center in expansion of the works of East thinkers throughout the continent.

Consequently, the data is given in our research paper is another result of our investigation. Accordingly, it is natural that the number of the works of Eastern scientists which were translated in Toledo school will rise and the list of their translators will be expanded during our further research.

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COMPARATIVE STUDY OF MANUAL HARVESTING CUM MECHANICAL THRESHING AND DIRECT COMBINING OF WHEAT CROP IN BUNDELKHAND REGION OF UP

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ABSTRACT

The conventional wheat threshing practice was more time and labour consuming and prone to weather hazard for these regions wheat grown farmer began to faster and less tedious ways to thresh wheat. So the effort were continued to develop machine for wheat threshing and in this process in 1950s, the Ludhiana thresher appeared, ushering Indian agriculture in to power thresher age. So there was a need to have a comparative study of manual wheat crop harvesting and its threshing using power wheat thresher system with that of combine harvesting system for their techno-economic adoption in Bundelkhand region of Uttar Pradesh. The cost of manual harvesting using serrated edge sickle, gathering and transport including grain loss was 5975 Rs./ha. The cost of threshing using Sonalika 20 hp PTO operated thresher including grain loss was 4457.58 Rs./ha. The comparative cost of manual harvesting, gathering and transport cum mechanical threshing and direct combining of wheat crop at custom hire rate were 10432.58 Rs./ha and 14827.5 Rs./ha respectively, which showed that there was saving of 29.64 % Rs. in traditional system with respect to combine harvesting. . So the results obtained in Bundelkhand

region of UP showed that the combine harvesting was economical if Bhusa was not a valuable cattle feed, scarcity of labour and uncertain weather condition existed in harvesting season and the early harvesting of crops helped in growing of another crop.

KEYWORDS: *Combining, Inadequacy, Syndicator, Productivity, appeared,*

INTRODUCTION

India is the second most populous country in the world with an estimated population of 1.25 billion in 2014 and an annual growth rate of 1.3 per cent. About two-third of the population live in rural areas with about 50 per cent still dependent on agriculture for their livelihood. Singh (2001) reported that the economics of ownership of most tractors in India had been justified by custom hiring for on-farm work as well as for off-farm transport and construction activities. During 2012-13 the average farm power available country-wide was about 1.84 kW/ha which comprised about 90 per cent from mechanical and electrical sources and only about 10 per cent from animal power and human labour (Mehta, 2013). This underscores the emphasis on the growth and development of power machinery systems in Indian agriculture. One of the major constraints of increasing agricultural production and productivity is the inadequacy of farm power and machinery with the farmers. Even farmers with small and marginal holdings utilize selected improved farm equipment through custom hiring service (Parashunath *et al.*, 2016). It was advocated that custom hiring services have enough scope for providing better implements to their clients at competitive rates (Ranade *et al.*, 2006; Kulkarni, 2009). Use of Mechanical power is resulting in improved land usage and labour productivity owing to higher gains in farm productivity. For these reasons wheat grower farmers began to look for faster and less tedious ways to thresh wheat. The earliest successful attempt was a bullock drawn Olpad thresher. It reduces the threshing time to less than half and provided seat for operator but it was also not found feasible to thresh the wheat crop timely. So the effort were continued to develop machine for wheat threshing and in this process in 1950s, the Ludhiana thresher appeared, ushering Indian agriculture in to power thresher age. Now days different types of wheat threshers viz. drummy, spike tooth, syndicator, bulk automatic feeding with auto reverse and multicrop threshers have come to scene. Now a days, due to uncertain weather conditions and acute shortage of labour during Rabi season in Bundelkhand region combine harvesters are becoming popular for timely wheat crop harvesting. In spite of this there is still some reluctance in its use because there is loss of wheat straw, which is valuable cattle feed in Uttar Pradesh with the use of combine harvester. Therefore, there is need to have a comparative study of manual wheat crop harvesting and its threshing using power wheat thresher system with that of combine harvesting system for their techno-economic adoption in Bundelkhand region of Uttar Pradesh.

MATERIAL AND METHODS

The study was conducted at Jalaun and Hamirpur district of Bundelkhand region. A group of 12 labourers were employed to harvest 0.1 ha area of wheat crop. Data regarding time required for harvesting as well as pre and post harvest losses were recorded. Manually harvested wheat crop was transported to nearby wheat threshing floor after 13 days of harvesting using tractor trailer. Labour required for crop gathering, loading and unloading as well as tractor use hour for unit area was recorded.

UNIT COST OF CALCULATION**Cost of manual harvesting using serrated sickles (C1)**

$C1 \text{ (Rs./ha)} = \text{No of labour hour required for harvesting 1 ha (man-h/ha)} * \text{daily labour wage rate Rs. } X/8$

$X = \text{labour wage rate Rs./day (8 h working)}$

Gathering and transportation cost (C2)

$C2 \text{ (Rs./ha)} = \text{time required for transport (tractor h/ha)} * \text{custom hire rate of tractor with trailer (Rs./h)} + X/8 * \text{no of man-h/ha for crop gathering and transport}$

Normally tractor with two wheat trailer custom hire rate is Rs. 250/h and its took about 5h/ha and required 66 man-h/ha for gathering and transport.

Therefore, $C2 \text{ (Rs./ha)} = 5*250+66*(X/8)$

Cost of threshing using 20 hp tractor PTO operated thresher (C3)

$\text{Threshing cost } C3 \text{ (Rs./ha)} = \text{tractor custom hire cost with thresher (Rs./h)} * \text{tractor with thresher operating (h/ha)} + \text{labour cost (Rs./h)} * \text{labour (h/ha)}$

A 35 hp tractor with 20 hp thresher custom hire rate was 440 Rs./h and labour required for continuous thresher operation 4 number.

$C3 \text{ (Rs./ha)} = 440 * \text{tractor threshing h/ha} + \text{labour h/ha} * X/8$

Cost of grain loss in manual harvesting and mechanical threshing (C4)

$\text{Cost of harvesting grain loss, } C4a = \text{grain loss (kg/ha)} * \text{wheat price (Rs./kg)}$

$\text{Cost of threshing grain loss, } C4b = \text{grain loss (kg/ha)} * \text{wheat price (Rs./kg)}$

$C4 = C4a + C4b$

$\text{Total cost of harvesting, crop gathering, transport and threshing including grain loss } C5 \text{ (Rs./ha)} = C1 + C2 + C3 + C4$

Cost of direct combining of wheat crop (C'5)

For direct combining of wheat crop secondary data available with respect to combine field capacity and field losses were used in this study. However, field data on custom hire rate of combine harvesting in Bundelkhand region and total grain losses with the use of combine harvester were also collected by field survey contacting progressive farmers of the region. The cost of direct combining was computed as given below.

$C'5 \text{ (Rs./ha)} = \text{custom hire rate (Rs./ha)} + \text{cost of grain loss (Rs./ha)} + \text{cost of bhusa loss (Rs./ha)}$

RESULTS AND DISCUSSION

Manual harvesting of wheat crop using serrated sickles

Data recorded for wheat crop harvesting manually with serrated sickle are presented in table 1. Data showed that the wheat crop of PBW -343 variety was harvested manually after 130 days after sowing. At this stage moisture content (wb) of grain and straw was 10.18% and 8.59% respectively. The area harvested per labour hour was 83.33 m² which gave an effective field capacity 0.0083 ha/h. The labour requirement of manual harvesting using serrated sickle was 120 man-h/ha and post harvest total grain loss was 1.5 per cent. The cost of harvesting and cost of grain loss in harvesting cum gathering were 2610 Rs./ha and 679.50 Rs./ha respectively considering average grain yield of 30 q/ha and wheat grain price as Rs. 15/kg. Thus the total cost of harvesting including grain loss was 3289.50 Rs./ha.

CROP GATHERING AND TRANSPORTATION

Data showed that harvested wheat crop was gathered after 12-24 hour of harvesting. The labour requirement for twine making using paddy straw was 12 man-h for bundle making of one hectare harvested crop. Labour requirement for gathering and bundle making of harvested wheat crop was 32 man-h/ha. Thus the total labour requirement and cost of crop gathering were 44 man-h/ha and 957 Rs./ha at labour average rate of 21.75 Rs./h respectively.

For the transportation of harvested wheat crop labour requirement for loading and unloading were 12 and 10 man-h/ha respectively. The tractor trailer time required for transportation of wheat crop bundles was 5 h/ha. The custom hire rate for tractor with trailer was 250 Rs./h. thus the tractor hire cost with trailer was 1250 Rs./ha for wheat crop transportation. So the total cost of transportation of one hectare wheat harvested crop as 1728.50 Rs./ha and total cost of crop gathering and transportation was 2685.50 Rs./ha.

TABLE1. Performance results of serrated sickle for harvesting, gathering, transportation and threshing of wheat crop

S.N.	Particulars	Performance results
A. Harvesting		
1	Crop variety	PBW-343
2	Plant height, cm	68
3	Moisture content, wb (%)	
	a. grain	10.18
	b. straw	8.59
4	Harvesting stage, DAS	130
5	Crop yield, kg/ha	3020

6	Area harvested/labour, m ²	83.33
7	Field capacity, ha/h	0.0083
8	Stubble height, cm	4.5
9	Pre harvest losses, %	Nil
10	Post harvested losses, %	1.5
11	Grain loss in harvesting cum gathering, %	1.5
12	Labour requirement, man-h/ha	120
13	Labour wage rate, Rs./h	21.75
14	Cost of grain loss harvesting cum gathering, Rs./ha	679.5
15	Cost of harvesting, Rs./ha	2610
16	Total cost of harvesting including grain loss, Rs./ha	3289.5
B. Gathering		
17	Interval between Crops harvesting and crop gathering, h	12-24
18	Labour required for twine making for 1h using paddy straw, man-h/ha	12
19	Labour required for crop gathering and bundle making, man-h/ha	32
20	Total Cost of crop gathering, Rs./ha	957
C. Transportation		
21	Labour required for crop loading, man-h/ha	12
22	Tractor trailer hour required /ha, h/ha	5
23	Labour required for crop unloading at threshing floor, man-h/ha	10
24	Custom hire rate for tractor with trailer, Rs./h	250
25	Labour cost for loading and unloading, Rs./ha	478.5
26	Cost of tractor hire cost with trailer, Rs./ha	1250
27	Total cost of crop transportation, Rs./ha	1728.5

D. Threshing		
28	Labour required for threshing, man-h/ha	24
29	Grain loss in harvesting cum gathering, %	2.86
30	Custom hire rate for tractor with thresher, Rs./h	440
31	Tractor thresher hour required /ha, h/ha	6
32	Cost of labour for threshing, Rs./ha	522
33	Cost of tractor hire cost with thresher, Rs./ha	2640
34	Cost of grain loss in threshing, Rs./ha	1295.58
35	Total cost of threshing	4457.58
	Gross Total	10432.58

DIRECT COMBINING OF WHEAT CROP

Data obtained for direct combining of wheat crop by use of secondary data resources and field surveys are given in Table 2.

Table 2. Performance results of combine harvester

S.N.	Particulars	Results
A	Optimum condition for wheat harvesting	
i	straw moisture content (wb), %	12 (12-14)
ii	grain moisture content (wb), %	14 (13.5-20)
iii	speed, km/h	3.5 (2.5-4.5)
iv	straw grain ratio	1.5 (1.2-1.6)
B.	Field survey data	
1.	Crop harvested	wheat
2.	Crop condition	
i	straw moisture content (wb), %	8.5 (7.9-9.7)
ii	grain moisture content (wb), %	9.55 (8.5-10.9)
iii	straw grain ratio	1.38 (1.35-1.4)

iv	plant height, cm	66 (59-72)
v	pre harvest losses, %	0-2.2
3.	Field condition	
i	size, ha	0.3 (0.2-0.5)
ii	soil type	clay loam
4.	Machine operating condition and performance	
i	speed, km/h	3.0 (2.2-4.3)
ii	cutter bar size, m	3.8
iii	field capacity, ha/h	1 (0.8-1.2)
iv	machine grain losses, %	3.1 (2.8-5.4)
v	stubble height, cm	24 (18-28)
5.	Custom hire rate of combine harvesting	3000 (2500-3500)
6.	Crop yield, kg/ha	3020 (2540-3580)

Data showed that wheat combining was done below the optimum moisture content of the cases, which was on an average 8.5 % of straw and 9.55% of grain against the optimum moisture content of straw 12-18% and grain 14-20 per cent. Pre harvested losses varied from 0-2.2 per cent. The losses were more in few cases due to over maturity of the crop at harvesting. The average field capacity of the combine harvester (Swaraj 8100) machine was found to be 1 ha/h which ranges from 0.8 to 1.2 ha/h. The field capacity was to be low in the field where the length of field was lesser than 50 m. Total machine grain loss varied from 2.8 to 5.4 per cent of the crop yield with an average of 3.1 per cent. During the survey data collection it was noticed that in those fields crop was harvested at low moisture content (below 7%) grain losses were more.

Survey data also revealed that Swaraj-8100 combine was mostly used on custom hiring at the rate of 2500 to 3500 Rs./ha with an average of 3000 Rs./ha. It was also observed that in Bundelkhand region of UP only few farmers liked to use combine harvester for wheat crop harvesting because of loss of wheat straw, which is used as a valuable cattle feed. Most of the farmers desired that if some machine is introduced which can collect the straw along with combine harvesting simultaneously or a separated machine may be put for straw collection and threshing left over crop residue into bhusa would be very much like by farmers for adoption of combine harvesting. This showed that good scope of introduction of straw combine harvester in combine harvested fields for collection of straw and making it bhusa of desired quality. It was assessed that if by way of adopting straw combine harvester farmer is able to recover even 48 % of bhusa and about 100 kg grain per hectare and hiring the straw combine @ Rs. 2000/ha the cost of direct combining will be cheaper than conventional manual wheat harvesting and mechanical threshing at present labour wage rate of 174 Rs./day.

Cost of direct combining of wheat crop (Rs./ha)

$C = \text{custom hire rate Rs./ha} + \text{cost of grain loss Rs./ha} + \text{cost of bhusa loss Rs./ha}$

Data obtained in study and assumptions

Custom hire rate of combining	3000 Rs./ha
Grain loss	$3020 \times 3.1\% = 94 \text{ kg}$
Cost of grain loss	$94 \times 15 = 1410 \text{ Rs./ha}$
Straw loss	grain yield* straw grain ratio $= 30.2 \times 1.38 = 41.67 \text{ q}$
Wheat straw price	250 Rs./q
Straw cost	$41.67 \times 250 = 10417.5 \text{ Rs./ha}$
Cost of combine harvesting	C
	$3000 + 1410 + 10417.5$
	$= 14827.5 \text{ Rs./ha}$

TABLE 3. Comparative cost of traditional wheat crop harvesting with mechanical threshing with that of direct combining.

S.N.	Cost component	Harvesting and threshing system	
		Traditional system	Combining
1.	Harvesting, Rs./ha	2610.00	3000 (custom hire)
2.	Gathering of harvested crop, Rs./ha	957.00	--
3.	Transportation of harvested crop, Rs./ha`	1728.50	--
4.	Threshing cost, Rs./ha	3162.00	--
5.	Grain loss, Rs./ha	1975.08	1410.00
6.	Straw loss, Rs./ha	--	10417.5
7.	Total cost, Rs./ha	10432.58	14827.5
8.	Saving in traditional system w.r.t Combining, %	29.64	

NOTE:

1. labour wage rate 174 Rs./day (8h)
2. Wheat grain rate 1500 Rs./q
3. Wheat straw rate 250 Rs./q
4. Custom hire rate of tractor with trailer 250 Rs./h
5. Custom hire rate of 20 hp thresher with tractor 440 Rs./h
6. Custom hire rate of combine 3000 Rs./ha

Data given in table 3 showed that cost of harvesting, gathering and transportation of harvested crop were 2610, 957 and 1728.5 Rs./ha respectively where as the cost of threshing was 3162 Rs./ha. Cost of grain loss in harvesting cum threshing was more than that of direct combining, but in case combine harvesting bhusa was entirely lost which is a valuable cattle feed accounting 10417.5 Rs./ha. The total cost of traditional system and direct combining system were 10432.58 and 14827.5 Rs./ha respectively which showed that there was saving of 29.64 % Rs. in traditional system with respect to combine harvesting.

CONCLUSIONS

The conventional wheat threshing practice was more time and labour consuming and prone to weather hazard for these regions wheat grown farmer began to faster and less tedious ways to thresh wheat. So study was done to compare manual wheat crop harvesting and its threshing using power wheat thresher system with that of combine harvesting system for their techno-economic adoption in Bundelkhand region of Uttar Pradesh. The cost of manual harvesting using serrated edge sickle, gathering and transport including grain loss was 5975 Rs./ha. The cost of threshing using Sonalika 20 hp PTO operated thresher including grain loss was 4457.58 Rs./ha. The comparative cost of manual harvesting, gathering and transport cum mechanical threshing and direct combining of wheat crop at custom hire rate were 10432.58 and 14827.5 Rs./ha respectively, which showed that there was saving of 29.64 % Rs. in traditional system with respect to combine harvesting. So the results obtained in Bundelkhand region of UP showed that the combine harvesting was economical if Bhusa was not a valuable cattle feed, scarcity of labour and uncertain weather condition existed in harvesting season and the early harvesting of crops helped in growing of another crop.

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SHEEP REARING AS A STRATEGY OF ENVIRONMENTAL PROTECTION AND SUSTAINABLE DEVELOPMENT

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ABSTRACT

Recent years have seen a number of changes in the management of forests. There is a major shift towards a more decentralized and people oriented forestry. Responding to scarcities, villagers have started organizing themselves to reverse degradation and restore productivity. The result has been a renewal of degraded ecosystems. The destruction of natural forests for timber, cropland, fuel wood, pasture, urbanization have had an impact on many poor rural families who are dependent on forest resources for fuel, fodder, food, medicine, housing etc. The deterioration of forests has accelerated soil erosion, sedimentation of rivers, increased flooding, and overtaxed the land's capacity to regenerate and sustain. It is now being recognised that local communities need to be involved in establishing sustainable forest management systems. Governments are opening a number of opportunities for sustainable forest management and biodiversity conservation by decentralizing authority and responsibility for resource management in different parts of the world. The various initiatives have led to greater access and control of forest resources by local people, in turn resulting in improvement in forest protection and management and reducing pressure on resources. Substantial areas of degraded forests have been rehabilitated and new forests planted. Local people have started supporting forest conservation where they have been able to reap financial returns from benefit-sharing schemes.

The Present paper is based on Socio Economic Study of shepherd in Mahaboobnagar of Andhra Pradesh. Most of these are shepherd groups depend on sheep rearing in tradition inherent over years. Most of these villagers are poor and depend heavily on sheep rearing actives. These social groups are with land and without land, with sheep and without sheep. The shepherds in

most of these areas are undertaking sheep rearing as a very important survival and income generating activity. However they earn lesser and lesser incomes as the size of their sheep starts diminishing return to scale.

KEYWORDS: *Decentralized, Accelerated, Biodiversity, Diminishing*

INTRODUCTION

Sheep rearing is an important allied activity to agriculture. In Mahabubnagar district it is the most important survival strategy particularly during drought prone region. Most of the villages are having acute water problem with higher pastoral resources on a lower web. Most of the areas are dry and rain fed. One or two crops are grown in the area. When drought occurs it is their inherent under lying strategy towards socio-economic wellbeing and traditional herdsman ship.

The Present paper deals with socio economic and environmental aspects of shepherds in Mahaboobnagar district of Andhra Pradesh. The present study is based on field work in (6) villages of Mahaboobnagar district. The majority of them are shepherd who depend on sheep rearing in tradition and inherent over years. Most of these are poor and depend heavily on sheep rearing activities. These social groups are with and without land with and without sheep.

The shepherds in most of these villages are undertaking sheep rearing as an important occupation for their survival and income generating activity. However they earn lessor and lessor incomes as the size of their sheep starts diminishing return to scale. This is due non commercialization. Most of these are organized into Yadava Sanghams with rotating credit system and regional rural banks and cooperative banks.

The prominent Kuruva and Golla caste groups either are involved in agriculture or work as labour in addition to undertaking sheep rearing and grazing as a principle occupation. The pastoral nomads across Southern Telangana are working over the years in manuring woolen blanket making and intense grazing. However, during drought, there is a problem to sheep as they are to move to different places of water points. Further they are subjected to diseases. The government veterinary department freely supplies vaccination. The supplement nutrients such as B complex syrup, calcium are available in the nearby areas.

The participant observation in the study village's shows that most of the shepherds have favourable correlation between herd size and land possession and the process of sheep rearing is involved with increase in herd size their land in possession.

METHODOLOGY AND OBJECTIVES OF THE STUDY

OBJECTIVES:

1. To assess the socio-economic conditions of the shepherds.
2. To assess asset possession sheep rearing strategy of the shepherd groups.
3. To assess environmental impact on sheep rearing activity.

METHODOLOGY:

A sample of 10% of shepherd households has been taken and information is collected through canvassed a structured schedules and group discussions. A total of 29 households belonging to

Kuruva caste groups have been studied. The collected data are analyzed using simple averages and percentages.

THE STUDY AREA:

The present study is undertaken in Peddakothapally, Bacharam, Kalwakol, Jonnalaboguda, kollapur and Somasila villages falling under the purview of Peddakothapally and Kollapur Mandals of Mahaboobnagar district of Andhra Pradesh.

Table 1 explains that as the sheep herd size is increasing their land ownership also increases. This is the reason that as benefits accrues to the shepherds as they purchase more land and assets.

The tables further reveal that the first column 1 indicated category of sheep size. In 10-49 herd size, 6 households, column (2) exists consisting 20.6 households (3) and there are 150 sheep column (4) which consists of 5.5% Column 5 of the total number of households studied are 29. The sheep less households are 14% of the total flock size. Altogether the total herd size in 29.6. The most herd size is owned by the 800-1000 herd size (27.5%)

TABLE – 1: NUMBER OF HOUSEHOLDS AND CATEGORY OF SHEEP

Category of sheep size	Number of Households	% of Households to the total number of households	Number of Sheep	% of the sheep to the total number of sheep
10-49	6	20.6	150	5.5
50-74	8	27.5	150	5.5
75-149	4	13.5	410	14.0
150-199	3	10.0	450	15.0
200-499	2	7.0	500	16.5
500-749	1	3.5	500	16.5
800-1000	1	3.5	800	27.5
Sheep less	4	14.0	--	--
Total	29	100	2960	100

Table 2 reveals that the shepherd possesses more irrigated and dry lands as their increased number of sheep herds. The table shows that the shepherd possesses more irrigated wet and dry lands in adequate numbers. Most of the household's posses land and also posses sheep. However most of the land particularly wet land in owned by small as well as large (households) sheep categories. For example, in the herd size category of 150-199 size possess 24 acres of dry

and 24 acres of wet land. Similarly in Table 2, the flock size group of 500-749, 1 household possesses 65 acres of dry land and 65 acres of wet land which indicates that a few individuals own more sheep and more land.

TABLE – 2: HOUSEHOLDS WITH AND WITHOUT SHEEP AND LAND

Category of sheep-size	No. of Households		No. of Households		Total land with sheep	
	With land	Without land	With sheep but without land	With land but without sheep	Wet	Dry
10-49	6	-	-	4	2	34
50-74	6	3	-	-	-	-
75-149	3	2	3	-	7	15
150-199	4	-	-	-	24	24
200-499	3	-	-	-	15	-
500-749	1	-	-	-	65	65
500-1000	1	-	-	-	5	-
total	24	5	3/10.5%	4	118	138

Table 3 shows that 93% of Households are with land and with sheep. 3.5% are with land but without sheep. 10.5% of the households are without land but sheep possess. However, 3.5% are without any land or sheep. The Table further explains that 93% of the shepherd families more or less possess either land or sheep. There is 1 (3.5%) household who possesses land but does not possess any sheep. There is only 1 household (3.5%) which out any land and sheep.

The table 3 further indicates that out of the total of 29 households, 1 household (3.5%) owns no land and no sheep. The remaining 28 households (96.5%) are with land and with sheep.

TABLE – 3: ASSET POSSESSION OF THE HOUSEHOLDS

No. of Households with land with sheep	No. of Households with land without sheep	No. of Households without land but with sheep	No. of households land without but without sheep
27 93%	1 3.5%	3 10.5%	1 3.5%

Table 4 shows that out of the 29 households studied, 3.5% are without land and sheep. However, (28) 96.5% are with land and with sheep.

TABLE – 4: ASSET POSSESSION OF THE HOUSEHOLDS

No. of Households	Households without land and sheep	Households with land with sheep	Total
29	1 (3.5%)	28 (96.5%)	29 (100%)

MAJOR FINDINGS OF PARTICIPANT OBSERVATION OF TRADITIONAL SHEEP HERDERS (ELDERS).

A study across several villages in the study area reveals that the acute water shortages exist during drought period. This constantly coincides with the over flooding of water logging during the rainy season. The problem of water flow during the rainy season which causes less value to the price and storage of manure as the entire net chain-mesh surrounding and less vegetation area leads (chittadi: Massey lands water flows in to top soil), and liquidation of manure of sheep droppings and thokkidi means the foot-steps of sheep to manure into wet lands leading to ecological problems to sheep rearing and soil fertility. However if there is protective grasses grasslands and forest cover and improved water shortages escape technology. During drought there is a possibility to avoid water logging. This necessitates the area of sheep grazers location will be helped to takeout from their profession as the government help in the form of assistance (for ex: veterinary assistance) to the shepherds particularly shepherds with large numbers of flocks. The supply of link-chain mesh nets to provide protection from cold and warming of the sheep.

Similarly the problem of sheep survival in a form of question. The danger is under lied as the past experience shows that the death of sheep while crossing the railway tracks along the railway crossing area. This was happened to the unluck faced by the owner flocks who suffered the loss both psychological and economical non-benefits. The problem is occurred during the summer season in the railway track near Jadcherla in Mahaboobnagar district of AP where nearly 500+ sheep were feared dead while crossing the railway track as the goods train rammed on to the sheep flocks while crossing the track on the crossing zone pathway.

Further there is a fear to the sheep flocks during the grazing and nesting sheep animals are caught and stray Fox, Henna the loss of life caused to sheep as these particular animals wounded the sheep and carried out the sheep into forest zone.

Another incidence of sheep flock loss is attributed to witch craft where the shepherd groups are subjected and feared to large scale perish of flocks, where this is considered as a problem which occurred particularly to follow the rituals to Gods and Goddesses to protect their flock from the above threats and their inability to meet the requirements as envisaged by the believes related to their at norms of sheep.

CONCLUSIONS:

An analysis is made along with the examination of land and sheep possession and assessment of availability of labour and crops in the study area. The problem is indicated as the herd-size

decreases, the land possession also decreases. The government should help these small herd owner shepherds and particularly during drought period. The local level employment programmes and raising of certain fodder varieties of grasses, foliage and intensive grazing along with a long term sustainable policy regarding less sheep, landless and small herder shepherds should be given financial assistance and development works should be undertaken. A pastoral development study in Africa, (Daniel K.Nelagala) (pastoralism and rural development) indicates that as the summer and winter season occurs, the shepherds find it difficult to graze the animals. However during cropping season and adequate rainfall, the development activities i.e., Government schemes, the shepherds find it easy to get additional labour and the sheep flocks are grazed sufficient, due to availability of foliage and water points. The shepherds earn more incomes and flock rearing becomes viable.

SUGGESTIONS:

Realizing the socio-economic benefits accruing the sheep herders, it is convenient to say that the business is profitable to the considerable extent to large herd flock owners and as were as economic to the small herd stock owners. However the Government and Non-government organisations could help at this stage of intervention and finally heck, i.e. medicine help, financial assistance and weaving technology (woolen spindles)

Woolen blanket weaving and fertilization of the top soil and manuring. Further there shall be proper mix of sheep foliage and fodder varieties to graze these animals with the vertical forestry horizontal and linkages.

Further, the problem of sheep and livestock and their very survival is in question. Particularly during the important festivals like Bakrid and masamma local festivals which are religious festivals on these occasions at large scale sheep herds are scattered and slaughtered, sheep, cows, bullocks are left out with mercilessly. These dumb animals should be protected if not adequately grazed. This is the responsibility of environmentalists, economists, people god realising, government, NGOs and other agencies, institutions which work on the safeguard of these unlucky animals.

The ongoing process of sheep rearing would enable the sheep herders to go on their activities and also the land owners shepherds will subsequently engaged in farming activities and alternative agricultural labour activities such as sowing, weeding and harvesting work during summer slack reason. Which enable the herder agriculturist earn considerable income. They busy with in kharif and rabi seasons. However the process of sheep rearing is not so problematic as visualized in the above analysis because, the adequate rainfall during 2010-2011 which helped shepherd to work on farms, agricultural labour, leasing in and leasing out of shepherd, and land, woolen products as locally called Kambali or Gongali. This costs Rs.600-900 per piece. The problem of acute shortage of water sources and improved grazing possibility around these drought prone regions. The framer shepherds will earn income as expected then more man, nature and environment would follow since accessibility of credit from banks, financial institutes and other government agencies such as the consumers demand and the production increased labour as well as raised wages. However, keeping the view of drought and scarce rainfall in the future time it is obvious that more care is taken to improve watersheds and improve fodder varieties and drought resistant feed.

The problem of sustainability: what make linked social and ecological systems resilient, and thus likely to be sustainable? Case studies of social-ecological systems have revealed a tight connection between social and ecological resilience, diversity and sustainability, where social resilience means the ability of communities to recover from environmental or social or economic or political shocks without fundamental changes in social relationships and economic circumstances.

Rangeland outcomes are influence by changes at different geographic scales for example, pasture composition on particular properties changing in response to stocking rates, government land tenure policy of a region, land changes in global market conditions. They are also influenced by variables changing on different time scales-fast-changing variables include grass growth, animal numbers and interest rates; intermediate-rate variables include soil loss and woody plant cover; slow-changing variables include climate change, aquifer depletion and infrastructure deterioration. Linkages will occur across scales. For example, global market conditions for pastoral products can affect stocking rates on individual properties and commercial out comes on properties can lead to political pressure to change national policies for drought assistance.

Change in the rangelands is influenced by unpredictable events occurring at the global and national level, such as El Niño climate variations and changes in wool prices and at the local level, such as soil erosion and family crises. When unpredictable events are combined with the individual autonomous behavior of plants, animals, pastoralists and other human interest groups, the potential for alternative paths of change is enormous.

In case of Indian rangelands, self-organisation is exhibited when rainfall, government land management policies, the financial circumstances of graziers, grazing animals, the mix of grasses and shrubs, drought may combine in variety of ways to produce multiple possible outcomes of management. Each component of the system is changing continuously and the relations between them are complex and non-linear. Thus change is irregular and unpredictable it may be gradual, it may be abrupt and discontinuous. There is no single equilibrium to which the rangeland system tends; rather it appears to have two stable states, a grass land and a woody shrub land, with irregular adjustments between the two dictated by constantly evolving interactions between system components.

What are irrational are the ongoing land-grass management policies, the forestry programmes are a little not conclusive to the aspiration of the government and people particularly shepherds, livestock owners and the grazing animals. There is a need to increased stress on positive ecological sustainability as the nurture of government and statehood on implication of forest and land development policies. The shrub moisture, grass land eco-system, cultivation on steep slopes, form forestry, social forestry, agro forestry and seri culture are very much pertinent to sustainable development as an environmental protection.

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PECULIARITIES OF PHRASEOLOGICAL UNITS IN THE LANGUAGE OF POETRY

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ABSTRACT

Main approaches to learning, enlightening expressive-aesthetic resources of phonetic and lexical-semantic levels of literary texts were considered in this article. In addition, major features of peculiarities of phraseological units in the language of poetry analyzed and outcomes with shortcoming were suggested as a result of the work. Finally, this implemented research could be the basis of the future studies as whole. Not only words but also the whole set of phrases – phraseological units and expressions from some literary sources – “winged words” can be stylistically and emotionally tinged. Other expressions bear the colloquial character, for example, gone stark mad or crazy, which appeared in speech from the daily life. Henbane – poisonous plant, one who eat it goes mad. In “The fairy tale about the fisher and fish” the old man says to his old wife when she wanted to be a queen: «What, you old lady, gone stark mad”. On this an interesting poem has been built which make one to think over the value of every hour, every minute of human life. So, in the poem of Rozhdestvensky “Listen attentively” the theme of murder appears. However, the modern meaning of the phraseological unit left with a lurch based on semantics of homonymic verbal noun nose (from the word bear). As for the scientists, sustained word combination leave with a lurch meant reject in matchmaking, remain with declined tribute, i.e. with a nose (with what brought with a gift).

KEYWORDS: *Pun, synonym, antonym, homonym, parody, barbarism, archaism, history studies, dialect studies, obsolete words, stylization, phraseology, phraseological novelties, macaronic poem, epigraph.*

INTRODUCTION

Writers address phraseological richness of Russian language as an inexhaustible source of speech expressiveness. Phraseological units are often used in bells lettres in their ordinary language form with their inherent form. Phraseological means of the language revive with the pen talented writers, become the source of new literary images, jokes, unexpected pans(ERKINOV, 2007).

Not only words but also the whole set of phrases – phraseological units and expressions from some literary sources – “winged words” can be stylistically and emotionally tinged. Phraseological analysis of bells letters pursue the following goals: define the content of phraseological units being used by the writer; deduce the sources from which this phraseology was taken; show how the author uses this material creatively, changes its image, renewing it and ero и transferring it from one stylistic sphere to another one(Ajwad et al., 2014).

Being engaged in one work the authors apply the following sources of phraseological means: 1) proverbs, 2) bells lettres, 3) folklore.

One of them is stylistically neutral. For instance, the expression *heel of Achilles* which came to literary language from the mythology means *weak, vulnerable part of human body*. One can recall the myth about Achilles, in the body of whom there was the only unprotected heel because his mother kept him on this place sinking to the water of underground river Sticks. This expression can be used as in colloquial speech as well as in bookish style(Sirojiddinov, 2015).

Other expressions bear the colloquial character, for example, *gone stark mad or crazy*, which appeared in speech from the daily life. Henbane – poisonous plant, one who eat it goes mad. In “The fairy tale about the fisher and fish” the old man says to his old wife when she wanted to be a queen: «What, you old lady, gone stark mad”.

The analysis of creative work of many Russian poets of XX century shows that they eagerly used phraseological units. Let’s take, for instance, works of R. Kazakov:

We are your reliable workers, We easily *collect the thread from the world, after the rain on Thursday*. Here – bygone – to the festivity.

I would sparrow feeling afraid, been shot, As if all knots are untied

hibernate – not for the first time. And all by which to live,

already being at the end ...

Contextual phraseological units are characterised by the fact that they are created through common language phraseological models, but are more imaginative and expressive for the clearly defined context. Part of components are preserved in such phrases and this allows the listener or reader correlate them with usual phraseological units.

Thus, the phraseological unit transformed occasionally by A.P. Chekhov remains in passive vocabulary: blue stocking → pink stocking.

Blue stocking	A woman deprived of femininity and charm, preoccupied with bookish and scientific interests.
Pink stocking	A woman having pleasant look, but a little but stupid, preoccupied with the care of her husband and children.

However in most cases the usage of phraseological units in the speech of writers are accompanied by their reconsideration, modernization which transforms well-known phrases into contextual-speech, occasional ones.

Increasing the expressiveness by transformation of phraseological units and its concurrent contamination with other phrases is observed in poetic language of I. Snegova:

... Tangle of fiery strands

Shrouded up to house's roof,

And I, as Firs, in «"Cherry orchard",

By one – alone forgotten in it.

It is often that to create the second semantic plan in the works there can be a word with a direct meaning and in the form of metaphorically sensible component.

For example, in the poem of R. Kazakov "Don't follow me as a schoolgirl" increasing the expressiveness and deepening the sense is achieved by connecting the word *difficult* and the phraseological unit *power of gravity* – "aggregate of spiritual and physical feelings":

And some day you will tell me, being brave, in such a way that I will understand - how your *power of gravity* is *difficult* for you alone.

Phraseological creative work of writers is expressed in regeneration of customary for the words of contexts in which they are usual. Words transferred from one surrounding to the other undergo interesting sensible and stylistic changes (Calhoun, 2013).

Thus, R. Rozhdestvensky wide uses phraseological units modifying them in different ways. In phraseological unit *kill the time* the verb *kill* preserves its direct meaning. On this an interesting poem has been built which make one to think over the value of every hour, every minute of human life. So, in the poem of Rozhdestvensky "Listen attentively" the theme of murder appears:

They kill the time

insolently and prayerfully.

They kill the time

bashfully and heartrendingly.

Thus, learning phraseological relations of words has the primary significance not only for characterizing semantic processes taking place in words when including them into the new phraseological context, but also for determining creative features of the writer who deals with phraseological innovation.

“Language is inexhaustible in combination of words”, - stated A.S. Pushkin. Each talented writer opened in native language new possibilities of using words. Even in its time Karamzin advised authors think up, compile expressions, divine the best choice of words, give old lexemes the new semantics.

The task of the writer is to express imaginative *Задача писателя выразить образное view*, that is why he takes into account the association with semantics of words and phraseological units of his time.

Thus, in one of his epigrams used the phraseological unit *left in the lurch*, which in XIX century, as well as in the modern Russian language, had a meaning “ *be disappointed* “:

Take treatment – or you be *Panglos*,
 You are the victim of harmful beauty–
 And so you will be *left in the lurch*,
 When you will not have a nose .

Pun is built on contrasting one of the components of the phraseological unit to the word *nose* in its free use in the meaning of “*body of sense*”. In the epigram A.S. Pushkin uses the reminiscence, the language expression of which is a proper name of the scientist-optimist Panglos, who lost his nose because of illness. The poet with an anthroponymy *Panglos* reminds about the novel of Walter titled “Kandid”. However, the modern meaning of the phraseological unit *left with a lurch* based on semantics of homonymic verbal noun nose (from the word bear). As for the scientists, sustained word combination *leave with a lurch* meant *reject in matchmaking, remain with declined tribute, i.e. with a nose (with what brought with a gift)*.

Phraseological innovation of writers can show itself in imaginative expressions by using reminiscence as well. For instance, V. Mayakovski surprisingly strongly and capaciously converted aphorism of Esenin in his poem “To Sergey Esenin”:

Precedent citation by Esenin	Reminiscence of Mayakovski
To die in this life is not a new thing, But to live also is not the newest event ...	It is not difficult to die in this life, But, it is more difficult to make a life.

Depending on the interaction of word’s semantic fields entered into phraseological unit by a writer or the word added by him/her to provide explanations the inner form will not be restored but it is lost in more degree. E.g., on analogy with the phraseological unit *drop the matter* in the meaning of “not pay attention to smth anymore” A.P. Chekhov creates the expression *обпазьер*

выражение *shake one's legs*, which preserves the phraseological meaning of a language phraseological unit, because the context of the story "In Moscow on Trubnoy Avenue" indicates it, where the writer was talking about thrush in the cage: "It was a long time that it *gave up all hopes of freedom*"».

However, inner form is lost because of such change: the semantics of phraseological unit *give up all hopes of* reflects the real phenomena – the habit of people to give up something when they decide not to pay attention to what was they worried about (Hasanova, 2016).

The imaginative content given by A.P. Chekhov in this sentence represents the overlapping of the semantics of phraseological unit *give up all hopes of* with the free word combination *shake one's legs* and other words consisting the sentence. Examples of such types in the language of A.P. Chekhov's works are not rare:

My brains gave up thinking and refusing to compile.

Both ships run aground.

Conversion of phraseological units does not always aims at expressing imaginative impressions occurring in the mind of the writer. Sometimes it is conditioned by the size of the poem, in which the form and structure of the set phrase is not stipulated. In this case the unsuccessful language experiments will occur. One can talk about unsuccessful attempt in converting the phraseological unit *be famishing or tighten one's belt* is very sensitive to the semantics of the word by the poet A. Tvardovski. This phraseological unit sprung up from the metaphor in the language of the public has the meaning *starve* (nothing on the shelf). Tvardovski changes the last word in his phraseological unit:

The Grachevs – the lard on a clasp,

The Frolows – tighten their belt.

Shelf, as is known, – "high platform (*in the bathhouse*), where people steam". There is no need to prove that from such a conversion the phraseological unit lost all its sense and image.

Many phraseological units of authors gained blaze of publicity and firmly set in phraseological stock of Russian literary language. To demonstrate this we represent the following table:

Author	Phraseological units of Russian language
Pushkin	My friend, let us devote wonderful impulse of our soul to the Motherland. Comrade, believe me: she ascends, the dawn of fascinating happiness. You are heavy, fur hat of Monomakh. Blessed are those who was young from the youth. Open the window to the Europe. Welcome sun, let the darkness hide. All ages are obedient in front of love. God gives the habits to us. We all learn little by little, by somewhat and somehow we learn. My uncle is the most honest in rules. What the coming day is preparing for me. Tradition – despot among the people. Running is in the life of the mouse.

<i>Lomonosov</i>	The science nourish the youth, happiness is served for the old.
<i>Karamzin</i>	Language is important for the patriot. Nothing is everlasting under the moon. Magic of red imaginations.
<i>Krilov</i>	That was a box that opened of itself. The cart is still upon the selfsame spot. It was several time that repeated to the world, that cajolery is vile, harmful. And Vaska listens and eats. Trishkin's coat: at the expense of something else. I didn't notice an elephant. A bear's service; disservice. Have feathers on one's snout; be mixed up in the affair. There is no animal stronger than the cat. A crow in peacock's feathers or a beggar on horseback. Every family has a freak.
<i>Griboedov</i>	Nothing to do but take care of a relative. Happiness takes no account of time. Easy said, but hard to believe.
<i>Lermontov</i>	Thoughts breathing with power, word bend as a jewel. You cannot wash with all your black blood, the truthful blood of the poet.
<i>Nekrasov</i>	Were the worst times, but fouls were not there. How did you come to such a life?
<i>Gogol</i>	You cannot find the right word for the writer. And what a Russian doesn't like high speed? Invisible laugh through invisible to the world tears. Everything went topsy-turvy. Lady pleasant by all features. Ugly and all. Dead souls.
<i>Turgenev</i>	My friend Arkadiy, don't speak so graciously. The fathers and the children. Superfluous men. The language of native aspen.
<i>Shedrin</i>	The literature does not die! Never dies! Warmed up words cost nothing. We do not have in between: or snout or the pen please. Iidushka Golovlev.
<i>Mayakovski</i>	Life is good and to live is better. At the top of one's voice. My police protects me.
<i>Chekhov</i>	To the village to the grand-pa. The man who lives in a shell. Nothing has to be done. Twenty two misfortunes. The space in diamonds. Conciseness – is a sister of a talent.

Thus, lexical richness of Russian language and phraseological innovations of writers assist in livening and updating the meaning of commonly known words(Zanca, 1991).

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ORGANIZATIONAL CLIMATE- A CONCEPTUAL REVIEW

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ABSTRACT

Organisational climate is also referred to as the “situational determinants” or “Environmental determinants” which affect the human behaviour. Climate of an organisation is somewhat like the personality of a person. Just as every individual has a personality that makes him unique and different from other persons. Each organisation has an organisational climate that clearly distinguishes it from other organisations. The hierarchical atmosphere can influence the human conduct in the association through an effect on their execution, fulfillment and mentalities. Authoritative variables impact the conduct by helping the person in framing a view of the association. The sort of atmosphere that an association looks for is dependent upon the kind of individuals it has, the sort of innovation, level of training and expect activities of individuals in it. Interest inspires individuals to add to the circumstance. They are offered chances to utilize their drive and inventiveness towards the destinations of the association. Interest utilizes the innovativeness of all people. They are offered chances to utilize their drive and inventiveness towards the destinations of the association. Interest utilizes the innovativeness of all people, in this way every one of them contribute something in basic leadership. Commitment is not quite the same as assent on the grounds that in assent the individual just affirms what has as of now been chosen.

KEYWORDS: *Innovativeness, Interchangeably, “Situational Determinants”, “Environmental Determinants”*

INTRODUCTION

The concept of organisational climate was formally introduced by the human relationists in the late 1940s. Now it has become a very useful metaphor for thinking about and describing the social system. Organisational climate is also referred to as the “situational determinants” or “Environmental determinants” which affect the human behaviour. Some persons have used organisational culture and organisational climate interchangeably. But there are some basic differences between these two terms.

According to Bowditch and Buono, “Organisational culture is connected with the nature of beliefs and expectations about organisational life, while climate is an indicator of whether these beliefs and expectations are being fulfilled.”

Climate of an organisation is somewhat like the personality of a person. Just as every individual has a personality that makes him unique and different from other persons. Each organisation has an organisational climate that clearly distinguishes it from other organisations.

Basically, the organisational climate reflects a person's perception of the organisation to which he belongs. It is a set of unique characteristics and features that are perceived by the employees about their organisations which serves as a major force in influencing their behaviour. Thus, organisational climate in a broad sense, can be understood as the social setting of the organisation.

MEANING AND DEFINITION:

Before understanding the meaning of organisational climate, we must first understand the concept of climate.

“Climate in natural sense is referred to as the average course or condition of the weather at a place over a period of years as exhibited by temperature, wind, velocity and precipitation.”

However, it is quite difficult to define organisational climate incorporating the characteristics of natural climate. This is so because the most frustrating feature of an attempt to deal with situational variables in a model of management performance is the enormous complexity of the management itself. People have defined organisational climate on the basis of its potential properties. A few important definitions are as given below.

According to Forehand and Gilmer, “Climate consists of a set of characteristics that describe an organisation, distinguish it from other organisations are relatively enduring over time and influence the behaviour of people in it.”

According to Campbell, “Organisational climate can be defined as a set of attributes specific to a particular organisation that may be induced from the way that organisation deals with its members and its environment. For the individual members within the organisation, climate takes the form of a set of attitudes and experiences which describe the organisation in terms of both static characteristics (such as degree of autonomy) and behaviour outcome and outcome-outcome contingencies.” Thus, organisational climate is a relatively enduring quality of the internal environment that is experienced by its members, influences their behaviour and can be described in terms of the value of a particular set of characteristics of the organisation. It may be possible to have as many climates as there are people in the organisation when considered collectively, the actions of the individuals become more meaningful for viewing the total impact

upon the climate and determining the stability of the work environment. The climate should be viewed from a total system perspective. While there may be differences in climates within departments these will be integrated to a certain extent to denote overall organisational climate.

CHARACTERISTICS OF ORGANISATIONAL CLIMATE:

The nature of organisational climate will be clear from the following characteristics:

1. General Observation:

Authoritative atmosphere is a general articulation of what the association is. It is the outline discernment which individuals have about the association. It passes on the impressions individuals have of the hierarchical inner environment inside which they work.

2. Dynamic and Immaterial Idea:

Hierarchical atmosphere is a subjective idea. It is extremely hard to clarify the parts of authoritative atmosphere in quantitative or quantifiable units.

3. Novel and Locale Personality:

Hierarchical atmosphere gives an unmistakable personality to the association. It clarifies how one association is not the same as different associations.

4. Persevering Quality:

Hierarchical atmosphere developed over a timeframe. It speaks to a generally continuing nature of the inner environment that is experienced by the authoritative individuals.

5. Multi-Dimensional Idea:

Authoritative atmosphere is a multi-dimensional idea. The different measurements of the hierarchical atmosphere are singular self-rule, specialist structure, administration style, example of correspondence, level of contentions and collaboration and so on.

VARIABLES AFFECTING AUTHORITATIVE ATMOSPHERE:

Authoritative atmosphere is a sign of the states of mind of hierarchical individuals towards the association. Analysts have utilized the information identifying with individual impression of hierarchical properties in distinguishing authoritative atmosphere. Indeed, even in this unique circumstance, there is an awesome measure of assorted qualities.

Litwin and Stringer have included six variables which influence hierarchical atmosphere. These elements are:

- (i) Authoritative Structure: Impression of the degree of hierarchical requirements, rules, controls, formality,
- (ii) Singular Obligation: Sentiment self-rule of working for oneself,
- (iii) Rewards: Emotions identified with being certain of sufficient and proper prizes,
- (iv) Hazard and Hazard Taking: View of the level of test and hazard in the work circumstance,
- (v) Warmth and Support: Sentiment general great association and accommodation winning in the work setting.
- (vi) Resilience and Strife: Level of certainty that the atmosphere can endure, varying conclusions.

Schneider and Barlett give a more extensive and methodical investigation of atmosphere measurements.

They incorporate the accompanying variables:

- (i) Administration Bolster,
- (ii) Administration Structure.
- (iii) Sympathy toward new workers
- (iv) Between office struggle,
- (v) Specialist reliance and
- (vi) General Fulfillment

Taguiri has recognized five components affecting the authoritative atmosphere on the premise of data gave by administrators.

These are:

- (i) Works on identifying with giving an ability to read a compass or reason to their occupations setting of goals, arranging and criticism,
- (ii) Open doors for practicing singular activity,
- (iii) Working with an unrivaled who is very aggressive and skillful.
- (iv) Working with agreeable and lovely individuals,
- (v) Being with a benefit situated and deals arranged organization.

KATZ et. al. have recognized five components which influence singular execution in association;

- (i) Standards introduction,
- (ii) The nurturance of subordinates,
- (iii) Closeness of Supervision,
- (iv) Universalism,
- (v) Advancement accomplishment introduction.

Lawrence James and Allan Jones have arranged the accompanying variables that impact authoritative atmosphere:

- (i) Authoritative Setting: Mission, objectives and goals, work and so on.
- (ii) Hierarchical Structure: Measure, level of centralisation and working strategies.
- (iii) Initiative Process: Administration styles, correspondence, basic leadership and related procedures.
- (iv) Physical Environment: Representative wellbeing, ecological anxieties and physical space qualities.
- (v) Hierarchical Qualities and Standards: Congruity, devotion, indifference and correspondence.

Richard M. Hodgetts has ordered hierarchical atmosphere into two noteworthy classifications. He has given a similarity with a chunk of ice where there is a part of the ice sheet that can be seen from the surface and another part that is under the water and can't be seen. The variables in the noticeable part that can be watched and measured are called Clear elements and the components that are not unmistakable and quantifiable are called incognito elements.

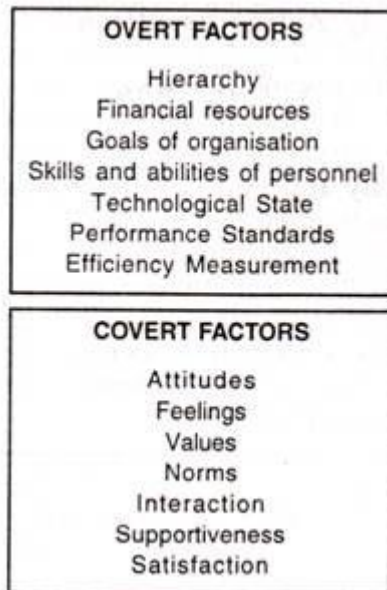
Both these elements are appeared in the accompanying figure as an icy mass:

The consequences of the above reviews demonstrate that it is extremely hard to sum up the fundamental substance of authoritative atmosphere, in view of these reviews. In any case, some expansive speculations can be drawn and it can be presumed that four essential components are to some degree basic to the discoveries of generally studies.

These elements are:

- (i) Individual self-sufficiency.
- (ii) The level of structure forced upon the position.
- (iii) Compensate Introduction.
- (iv) Thought, warmth and support.

Another normal calculate can be regard of contention and collaboration. In any case, this calculate is utilized alternate points of view by various individuals.



Effect of Authoritative Atmosphere:

Authoritative atmosphere impacts, as it were, the execution of the workers since it majorly affects inspiration and occupation fulfillment of individual representatives. Hierarchical atmosphere decides the workplace in which the representative feels fulfilled or disappointed. Since fulfillment decides or impacts the proficiency of the representatives, we can state that authoritative atmosphere is straightforwardly identified with the productivity and execution of the workers.

The hierarchical atmosphere can influence the human conduct in the association through an effect on their execution, fulfillment and mentalities. There are four instruments by which atmosphere influences the conduct of the representatives.

1. Imperative Framework:

Hierarchical atmosphere can work as a requirement framework in both the positive and negative sense. This should be possible by giving data to the representatives about what sort of conduct will be compensated, rebuffed or overlooked. Consequently, conduct can be impacted by changing degrees of prizes and disciplines. Such an imperative framework would impact the conduct of those individuals who are most inspired by those particular qualities which are relegated to various behavioral results.

2. Assessment of Self As well as other people:

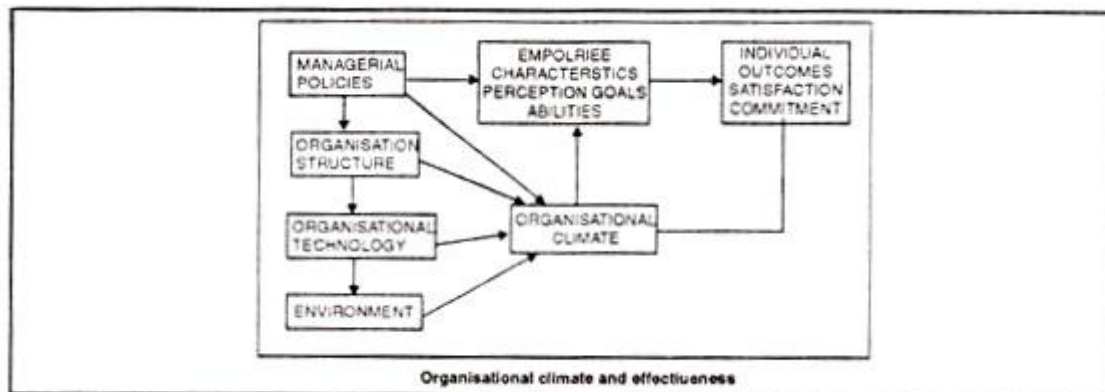
Authoritative factors may influence conduct through assessment of self as well as other people. In this assessment procedure both the physiological and mental factors will be related. Such assessment will influence the human conduct.

3. By Going about as Jolts:

Hierarchical components can impact human conduct by going about as jolts. As boosts they impact individual's excitement level, which is a motivational variable coordinating human conduct. The level of excitement will specifically influence the level of initiation and consequently execution.

4. By Helping the Person to Frame an Observation:

Authoritative variables impact the conduct by helping the person in framing a view of the association. The observation then impacts conduct. Subsequently, great hierarchical atmosphere is instrumental to higher worker fulfillment, better human relations and higher profitability, the part of atmosphere can be clarified with the assistance of the accompanying figure.



The elements demonstrated in the figure speak to real determinants of atmosphere in an association and in that capacity speak to critical ranges of administration concern. On the off chance that workers fulfillment and occupation execution are to be enhanced, the administration must adjust these components so that the representatives see atmosphere as ideal to them. Different research thinks about additionally affirm the positive relationship between hierarchical atmosphere and worker execution.

Frederiksen on the premise of research facility studies including 260 center level directors presumes that diverse hierarchical atmosphere has distinctive effect on human execution. He outlines his discoveries in the accompanying proclamation.

"It creates the impression that the measure of regulatory work in the fortified employment is more unsurprising in an atmosphere that supports development .than in one that energizes standard systems and that in an inventive atmosphere, more prominent efficiency can be anticipated from individuals with aptitudes and states of mind that are connected with autonomy of thought and activity and the capacity to be beneficial in free unstructured circumstances."

This review recommends that the execution was more unsurprising for subjects who worked in a steady atmosphere than the individuals who needed to work in a conflicting natural atmosphere. Conflicting atmosphere was having circuitous effect on profitability. Another research facility ponder demonstrates that critical contrasts were found in execution and fulfillment of individuals in fluctuating authoritative atmospheres.

For instance, in this review, three sorts of hierarchical atmospheres were made:

- (i) Tyrant organized.
- (ii) Law based benevolent and
- (iii) Accomplishing business.

It was found that the accomplishing association delivered the most as far as cash volumes, quantities of new items and cost sparing advancements. Individuals in fair amicable environment communicated most extreme fulfillment with their occupations. Nonetheless, individuals in the dictator organized association delivered products of most elevated quality due to right determinations put by government orders. Different reviews have demonstrated the comparable outcomes.

Measurements of Hierarchical Atmosphere:

The essential measurements or parts which all in all speak to the atmosphere of an association are as examined beneath:

1. Prevailing Introduction:

Prevailing introduction of the association is an essential determinant of atmosphere and it is the significant worry of its individuals. On the off chance that the predominant introduction is to hold fast to set up standards and directions, the atmosphere is described by control. In the event that the introduction is to deliver brilliance the atmosphere will be described by accomplishment.

2. Between Individual Connections:

The interpersonal connections in the associations are reflected in the way casual gatherings are shaped and worked. The casual gatherings may profit the association additionally, however now and again it might dislodge the objectives of the association.

3. Peace promotion:

In the association, there can simply be between gathering and also intra aggregate clashes. The hierarchical atmosphere will rely on how successfully these contentions are overseen. On the off chance that they are overseen successfully, there will be an environment of participation in the association. On the off chance that they are not overseen appropriately there will be an air of doubt and non-participation.

4. Singular Self-governance:

In the event that the individual representatives are given adequate flexibility to work and activities specialist, it will bring about productivity in operations. The self-sufficiency will help the weight of larger amount administrators.

5. Hierarchical Control Framework:

The control arrangement of the association can be either inflexible or adaptable. Inflexible control will prompt to unoriginal or bureaucratic environment in the association. There will be least extension for self control.

6. Hierarchical Structure:

The hierarchical structure serves the premise of bury individual relations amongst bosses and subordinates. It clears up in the matter of who is mindful to whom and who is to direct whom. In the event that there is centralisation of specialist, the interest in basic leadership by the subordinates will be less. Then again, if there is decentralization of specialist, there will be a climate of participative basic leadership.

7. Undertaking Focused or Relations Situated Administration:

The predominant style of chiefs will likewise influence the hierarchical atmosphere. Errand arranged approach implies that the administration style will be imperious. The representatives should demonstrate results or face the discipline. The worker spirit will be low over the long haul. On the off chance that the administrators are relations situated, the atmosphere will be kind and steady. There will be solidarity in the association on the grounds that the requirements and yearnings of the laborers will be given due significance.

8. Prizes and Disciplines:

The arrangement of prizes and disciplines is additionally a vital part of authoritative atmosphere if the reward framework is specifically identified with execution and profitability, there will be an environment of rivalry among the workers. Everyone will get a kick out of the chance to buckle down and win more reward as advancements and pay rise. On the off chance that there is biasedness in the appropriation of prizes, the commendable workers will be debilitated.

9. Correspondence:

The correspondence arrangement of the association will likewise influence the authoritative atmosphere. The stream of data, its bearing, its dispersement and its sort are exceedingly vital determinants. Legitimate correspondence framework implies that the subordinates are in a position to express their thoughts, proposals and responses, else they will feel disappointed.

10. Chance Taking:

How individuals react to dangers and whose help is looked for in circumstances including dangers are critical in any association. In the event that people don't hesitate to experiment with new thoughts with no dread they won't waver in going for broke. Such a climate will be helpful for imaginative thoughts.

The above measurements or parts are not fundamentally unrelated, they regularly cover each other. The path in which these distinctive measurements work an association demonstrates the hidden rationality of the administration.

Building up a Sound Hierarchical Atmosphere:

To build up a sound hierarchical atmosphere is a long haul suggestion. Authoritative atmosphere relies on the hierarchical conduct framework. The authoritative atmosphere ought to speak to the objectives and rationalities of the individuals who combine to make the association. The sort of atmosphere that an association looks for is dependent upon the kind of individuals it has, the sort of innovation, level of training and expect activities of individuals in it.

The accompanying systems are for the most part accommodating in enhancing the atmosphere of the association:

1. Compelling Correspondence Framework: There ought to be a two route correspondence in the association so that the representatives recognize what is going on and respond to it. The administrator can change his choice on the premise of input got.

2. Sympathy toward Individuals: The administration ought to be occupied with the human asset improvement. It ought to work for the welfare of representatives and a change in their working conditions. For building up a sound hierarchical atmosphere, the administration ought to have demonstrate sympathy toward the general population.

3. Participative Basic leadership: The administration ought to include the representatives in basic leadership handle, especially those choices which are identified with objective setting and influence them. Participative basic leadership will make the workers focused on the association and more co-operative too.

4. Change in Approaches, Techniques and Guidelines: The authoritative atmosphere can likewise be changed by rolling out improvements in the approaches, techniques and guidelines. It is a tedious procedure yet the progressions will likewise be durable if the specialists see the adjustments in arrangements, techniques and principles as ideal to them.

5. Mechanical Changes: For the most part, the laborers and workers oppose any imaginative changes. Be that as it may, where innovative changes enhance the working states of the representatives, the change will be effortlessly acknowledged. Better atmosphere will be there if the administration receives inventive changes in discussion with the workers.

However, all the above variables are dependent upon the presumptions of the way of individuals when all is said in done. For instance, the Monetary MAN is fundamentally spurred by cash and financial security and henceforth, financial variables might be utilized to pull in and persuade him. For a SOCIAL MAN positive social relations and communications are an unquestionable requirement. Consequently, the making of an atmosphere where glad family air wins is proper for him. The self inciting man looks for accomplishment, achievement and importance in what he does. The authoritative atmosphere with a specific level of flexibility is suitable for him.

Subsequently, keeping in mind the end goal to develop a sound authoritative atmosphere, administration must comprehend the general population in the association. The significance must

be given to what propels individuals' execution all in all and building a general atmosphere helpful for inspiration, a sharp knowledge into the person specifically and fitting an individual way to deal with initiative and employment configuration to which the man will react with duty. The diverse sorts of individuals recommend that there can't be any universally handy hierarchical atmosphere.

Support and Authoritative Atmosphere:

As we have underscored before additionally, support is an exceptionally powerful apparatus to create sound authoritative atmosphere. In this way, every association can make an endeavor to create hierarchical atmosphere in view of investment. Investment depends on law based estimation of hierarchical life.

Bennis has given some fundamental components of majority rule government as connected to hierarchical life. As indicated by him, majority rule government is essentially an arrangement of qualities.

These qualities include:

- (i) Full and free correspondence paying little respect to rank and power.
- (ii) A dependence on accord instead of on the more standard types of intimidation or trade off to oversee struggle.
- (iii) The possibility that impact depends on specialized capability and learning than on the caprices of individual impulses or right of force.
- (iv) A climate that licenses and even supports passionate expression and in addition undertaking focused acts.
- (v) A fundamentally human predisposition, one which acknowledges the certainty of contention between the association and the individual however which will adapt to and intervene in this contention on objective grounds.

To condense, we can state that there are three essential thoughts in this idea of interest:

1. Mental and Passionate Association: The essential element of participative framework is that there ought to be mental and passionate association of the workers in the organization of the association. This contribution is mental as opposed to physical. A man who takes part is sense of self included as opposed to just assignment included. On the off chance that there is no mental contribution of the representatives, the investment is no support however only a control. In such a circumstance, the supervisor tries to make individuals believe that they are taking an interest and having an impact, while in all actuality they are most certainly not.

2. Acknowledgment of Duty: A moment imperative normal for support is that individuals are urged to acknowledge obligation. Since individuals are rationally and candidly required in basic leadership, they need to attempt duties moreover. In this way, they get to be distinctly both chiefs and agents.

This is a social procedure by which individuals get to be distinctly required in an association and need it to work effectively. At the point when individuals need to accomplish something, they will discover a way. Under participative conditions individuals see administrators as strong donors to the group. Representatives are prepared to work effectively with directors, rather responsively against them.

3. Inspiration to Contribute: Interest inspires individuals to add to the circumstance. They are offered chances to utilize their drive and inventiveness towards the destinations of the association. Interest utilizes the innovativeness of all people, in this way every one of them contribute something in basic leadership. Commitment is not quite the same as assent on the grounds that in assent the individual just affirms what has as of now been chosen. An assent or does not add to basic leadership rather he simply supports what has been chosen by others.

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DESIGN AND LABORATORY TEST OF A SEED METERING DEVICE OF SOWING SOYABEAN SEEDS

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ABSTRACT

The objective of this work was to evaluate the chemical and physical characteristics of grains of soybean (Glycine max) cultivars for food processing. Metering device is the heart of planter and its function is to distribute seeds uniformly at the desired application rates. Manual method of seed planting, results in low seed placement, more consuming time, spacing efficiencies and serious back ache for the farmer which limits the size of field that can be planted. The objective of this study was to design a new seed metering device (plate type) sowing for soyabean to overcome seed damage, seed loss and non-uniform distribution of seed. Physical properties of seed parameters play important role in design of cell in a metering device for easy flow of seed. To achieve the best performance of device under laboratory test including calibrated seed rate,

seed damage percentage, uniformity of seed spacing in row used grease belt system, missing rate and germination percentage were found 26.99 kg, 2.4%, 24cm, 2.12% and 93%, respectively. The basic requirements for small scale cropping machines are, they should be suitable for small farms, simple in design and technology and versatile for use in different farm operations. A manually operated template row planter was designed and developed to improve planting efficiency and reduce drudgery involved in manual planting method. Seed planting is also possible for different size of seed at variable depth and space between two seed.

KEYWORDS: *Glycine max, Metering device, chemical and physical, properties, Soyabean, Performance indices, Angle of repose,*

INTRODUCTION

A developing country like India is expected to continue to rely more on hand tools for the foreseeable future for cultivation. The use of hand tools for land cultivation is still predominant in India because draft animals and tractors require resources that many Indian farmers do not have easy access to. The need for agricultural mechanization in India must therefore be assessed with a deeper understanding of the small holder farmer's activities and what values farm power generated. Research indicates that most growers could improve their yields by just improving on the planter's performance (**Carlson *et al.*, 2014**). This work focused on the design, fabrication and laboratory testing of an affordable seed metering device for manually operated single row planter specifically for sowing soyabean planter seeds. The design was to improve on seed spacing, reduced damage per cent, reduced missing rate and depth uniformity in the seed planting process. The benefits of this particular design includes: Increased agricultural output; Reduced production cost, which makes the planter affordable; Makes crop cultivation less laborious; Makes farming more attractive to the youths; Reduces urban migration by youths in search of white collar jobs; Ensures capacity utilization of available farm land and save tremendous amount of time during farming.

Metering mechanism is the heart of sowing machine and its function is to distribute seeds uniformly at the desired application rates. In planters it also controls seed spacing in a row. A seed planter may be required to drop the seeds at rates varying across wide range [Sowing and planting equipment]. **Barut and Ozmerzi, (2004)** studied the effect of the peripheral velocity of seed plate on the seed holding ratio for maize. They found that an increase in the peripheral velocity of the seed plate gave a decreased of seed holding ratio for different maize varieties.

The effect of planting speed on metering and seed accuracy was studied by (**Chhinnan *et al.*, 1975**). They found that higher planting speeds resulted in more skips, higher speed placement errors, and higher average spacing. Precision planting was pioneered by Datta in 1974 as the placement of single seeds in the soil at the desired plants spacing (Datta, 1974). Usually, plant scientists use hand dibblers to achieve this degree of accuracy. Sowing devices equipped with single seed metering devices are called precision planters. The first developed precision planters were horizontal plate planters with cells on the periphery. The function of a well-designed seed planter is to meter seeds of different sizes and shapes, place the seed in the acceptable pattern of distribution in the field, place the seed accurately and uniformly at the desired depth in the soil and cover the seed and compact the soil around it to enhance germination and emergence [Sowing and planting equipment].

The fluted-roller seed meter is capable of metering seed uniformly and is commonly used as metering device for drilling of wheat but is negatively impacted by sudden release of seed batches (**Maleki *et al.*, 2006**).

The conventional fluted meters for drilling often resulted in poorly spaced stands with many gaps. To compensate for this stand variability, many operators over-seed small grains by 10-20 percent. Research shows that the conventional fluted-meter devices evaluated for variable-rate seeding are not very accurate. Fluted meters have a cup on a rotating shaft and an opening gate. The result shows that changing the shaft speed, forward speed, or gate opening greatly hinder the accuracy of population and spacing of the seed. With the increase in seed size the variability was even greater. The conventional fluted-drill meter devices do not need singulation accuracy because small grains can usually compensate for the inconsistency (**Robert, *et al.*, 2009**). The popular and widely used horizontal seed metering is having several problems, including higher seed damage, missing and multiple drops (**Singh *et al.*, 2005**). A pneumatic precision metering device designed specially to meet the requirements of sowing wheat crop within the recommended seed rate to increase the productivity and decrease the production cost of wheat cultivation (**Yasir *et al.*, 2012**). The objective of the present study was to develop a new seed metering device (Plate type) sowing for soyabean and evaluate the impact of precision seeding on soyabean to overcome seed damage, seed loss and non-uniform distribution of seed.

MATERIALS AND METHODS

Evaluation of the various physical properties of soyabean seeds relevant to manually operated planter. 100 samples of randomly selected of soyabean Pusha 16 of a variety were measured physical properties of seeds namely, size, shape, sphericity, thousand seed weight, true density, angle of repose, coefficient of restitution.

SIZE

The size of the seed was specified by length, width and thickness. The axial and lateral dimension of the seeds was measured by using vernier caliper. Twenty seeds were selected randomly for the dimension.

SHAPE

This parameter of seed was relevant to design of seed metering device and hopper. The shape of the seed was expressed in term of roundness and sphericity.

ROUNDNESS:

A seed was selected randomly and its dimension was taken by using image analysis method in natural rest position. The area of smallest circumscribing circle was calculated by taking the largest axial dimension of seed at natural rest position as the diameter of circle. (Mohsenin, 1986)

SPHERICITY

The sphericity is a measure of shape character compared to a sphere of the same volume. Assuming that volume of solid is equal to the volume of tri-axial ellipsoid with intercepts a, b, c and that the diameter of circumscribed sphere is a largest intercepts of the ellipsoid, (Mohsenin, 1986)

THOUSAND SEED WEIGHT

One thousand seed weight of each crop seed was weighing on a digital weighing balance. (Mohsenin, 1986)

VOLUME AND TRUE DENSITY

Toluene displacement method was used to determine the volume and true density of each crop seed. A sample of 100 seeds was weighed. The sample was immersed in a jar containing toluene displaced by the sample was recorded, thus volume of single seed was calculated. True density was calculated as the ratio of weight of the sample to its volume. (Mohsenin, 1986)

ANGLE OF REPOSE

Angle of repose is necessary to design the seed box of machine for continuous flow of seeds. For determination of angle of repose a box having circular platform fitted inside was filled of maize grains. The circular platform was surrounded by a metal funnel leading to a discharge hole. The extra grains surrounding the platform were removed through discharge hole leaving a free standing cone of maize grains on the circular platform. A stainless steel scale was used to measure the height of cone and angle of repose was calculated (Mohsenin, 1986)

COEFFICIENT OF STATIC FRICTION

The coefficient of static friction of each crop seed was measured by using inclined plane method on mild steel surface. The seed was kept separately on a horizontal surface and the slope was increased gradually. The angle at which the materials started to slip was recorded. The coefficient of static friction was calculated. (Mohsenin, 1986).

Table 1. Physical properties of soyabean (*Glycine max*)

Length l , mm	5.55±0.06
Width w , mm	5.10±0.07
Roundness, mm	1.08±0.15
Sphericity, %	0.670±0.014
Projected area, mm ²	30.10±0.09
Equivalent mean diameter, mm	6.90±0.08
Thousand seed weight, g	100.12±0.050
Angle of repose, degree	26.45±4

Note: Coefficient of restitution of soyabean for MS Sheet was 0.817-0.483 at the height of 50 mm to 300 mm

Design of seed metering device for soyabean seed

In this section we are going to discuss about the design and fabricate of a seed metering device of a manually operated single row crop planter sowing of soyabean seeds. Since most of our farmers especially in the rural areas or small scale farmers used dibbler, matchet or sticks to sow different seeds but it's more consume time and efficiency was low. Metering mechanism is the

heart of sewing machine and its function is to distribute seeds uniformly at the desired application rates [Sowing and planting equipment]. For suitability of farmer a seed metering device was designed and fabricated in the laboratory of farm machinery and power engineering department, SHIATS, Allahabad.. The proper design of a metering device sowing of soyabean seeds is an essential element for satisfactory performance of the seed planter. This seed metering device (plate type) was made by nylon materials with cells on its periphery. The diameter and number of cells on periphery of seed metering device was designed according to physical properties of soyabean seeds to minimum damage and to obtained actual plant spacing in row

Number of cell in seed metering device (Plate type).

To obtain the actual plant spacing by change the number of cells in the seed metering device and drive ratio. The numbers of cells were calculated by following formula.(Sharma and Mukesh, 2010)

$$\text{No of cells in seed metering device} = \frac{\pi \times \text{diameter of drive wheel (cm)}}{\text{drive ratio} \times \text{plant spacing (cm)}} \quad (1)$$

Diameter of seed metering device (Plate type).

Diameter of the seed metering device was determined by the following equation.(Sharma and Mukesh, 2010)

$$D_m(\text{cm}) = \frac{V_r}{\pi N_r} \quad (2)$$

V_r = Peripheral velocity of seed metering device in m/min

N_r = rpm of seed metering device.



Fig. 2 A view of seed metering device fabricated in laboratory (Plate type) for sowing soyabean seeds.

TABLE.2. SPECIFICATION OF SEED METERING DEVICE (PLATE TYPE) FOR SOWING SOYABEAN SEEDS.

S.No	Particular	Dimension
1	Cell size (mm)	10
2	Actual seed diameter (mm)	7.09±0.07
3	Diameter of seed metering device, mm	104
4	Radius of seed metering device, mm	52
5	Center hole diameter of seed metering device for shaft, mm	18
6	Number of cell	18
7	Circumference length, mm	321.29
8	Circumference width, mm	26
9	Cell to cell distance in seed metering device, m	0.02298
10	Material	Nylone

Laboratory testing of seed metering device for soyabean seeds

1. Calibration of manually operated single row soyabean planter
2. Mechanically damage seed test.
3. Seed uniformity test by grease belt method
4. Missing rate
5. Germination test

1. Calibration of manually operated single row soyabean planter

The hopper of the manually operated planter was fully loaded with the seeds. The planter was suspended on a voice and turning the drive wheels rotates the metering device. A paint mark was made on the drive wheel to act as a reference point to count the number of revolutions when turned, and a bag was placed on the discharge tube to collect the seeds discharged. The drive wheels were rotated 50 times at low speed. A stop clock was used to measure the time taken to complete the revolutions. The seed in the bag were weighed on a balance and the procedure was repeated five times.

2. Mechanically damaged seed test due to planter

The test for percentage seed damaged was done with the machine held in a similar position to that described above. The hopper of the manually operated planter was full loaded by seeds and and rotate the drive wheel of planter at waking speed. The wheel was rotated 20 times in turns and the time taken to complete the revolution was recorded with the aid of stop clock. The seeds discharged from the seed tube were observed for any external damage.

$$\text{Seed damage per cent} = \frac{\text{Total no of damaged seed}}{\text{total no.of seeds}} \times 100$$

3. Seed uniformity test by grease belt method

To determine the uniformity of seed spacing (Seed to seed spacing in row) of manually operated planter, the planter was fully loaded with seed. A 10 m thin layer of grease belt was laid out on the plain ground and the machine run at working speed of approximately 2.5 km/hr. A measuring steel tape was used to measure the distance between seed to seed in the row. This process was repeated five times and measurement of distance between seed to seed was recorded.

4. Missing rate

The accurate missing rate measurement during operation in the field is not an easy task, keen attention is needed while operating the manually operated planter in the field (laboratory testing grease belt). So, during operation operator and one observer counted the number of seeds missed to drop into the seed tube. Then determined the actual number of seeds drop in experimental area if no missing occurred. Then missing rate is determined by the following equation.

$$\text{Percent missing rate} = \frac{N}{M} \times 100$$

where,

N = number of seeds missing during pickup by metering device into seed tube

M = number of seed dropped by the metering device if no missing occurred and not more than one seed per cell.

5. Germination test

Germination test of metered seeds is considered as the most important quality test in evaluating the planting value of seed lot. The ability of seeds to produce normal seedling and plants later on is measured in terms of germination test. Testing of seeds under field conditions is normally unsatisfactory as the results cannot be reproduced with reliability. Laboratory methods then have been conceived where in the external factors are controlled to give the most uniform, rapid and complete germination. Testing conditions in the laboratory have been standardized to enable the test results to be reproduced within limits as nearly as possible those determined by random sample variation. soyabean seed to be used for sowing should be germination tested. Germination test was done in seed germinator in the laboratory of Department of Genetics and Plant Breeding SHIATS, Allahabad. Count out 100 seeds randomly (including damaged) and sow 10 rows of 10 seeds —the rows make it easier to count seedlings. Seeds should be sown at normal seeding depth of 2-3 cm in seed germinator. Place the seeds on top of the sand or soil and push them in with a piece of dowel or a pencil and cover with a little more sand. Counted only normal Seedlings after 7 to 10 days and germination percentage were calculated by following formula:

$$SG = \frac{GS}{TS} \times 100$$

where:

SG = seed germination percentage.

GS = germinated seed in seed germinator.

TS = total seed (Including damage seed).

RESULTS.

The physical properties of seed parameters play a important role in design of cell in a metering device and flow through seed planter components. The length, width, equivalent diameter and angle of repose of soyabean seeds were observed 5.55 ± 0.06 mm, 5.10 ± 0.07 mm, 6.90 ± 0.08 mm and $26.45 \pm 4^\circ$, respectively. The 1000-seed weight of soyabean seeds was observed 100.12 ± 0.050 gm. **Jayan and Kumar (2004)** also similar the length, width, equivalent diameter and angle of repose of soyabean seeds were 5.55 ± 0.06 mm, 5.10 ± 0.07 mm, 6.90 ± 0.08 mm and 26.45 ± 4 .

Number of cell in seed metering device (plate type).

To obtain the actual plant spacing the number of cells in the seed metering device and drive ratio was play most important role at the time of design seed metering device. The numbers of cells on

periphery of seed metering device was 14. Diameter of every cell on periphery of seed metering device was 9 mm

Diameter of seed metering device (plate type).

Plate type seed metering device was capable of metering seed uniformly. The diameter of seed metering device was 102 mm and periphery width was 25 mm and diameter of center hole of metering device was 14 mm.

LABORATORY TEST

Calibration of manually operated single row soyabean planter

The planter was calibrated as per recommended seed rate of soyabean. The observations obtained from the calibration test were that the effect in seed rate due to the level of seeds in the hopper is negligible. The calibrated seed rate was found as 24.99 kg/ha.

MECHANICALLY DAMAGED SEED TEST.

The test for percentage seed damaged was done with the machine held in a similar position to that described above. The hopper of the manually operated planter was full loaded by seeds and rotates the drive wheel of planter at waking speed. The wheel was rotated 20 times in turns and the time taken to complete the revolution was recorded with the aid of stop clock. The seeds discharged from the seed tube were observed for any external damage. The number of seeds with visible damage seeds in above sample was taken and percentage of damaged seeds after the test was determined. Seed damage determination test indicates the mechanical damage was observed 2.3 %. It was less damage percentage and observed that due to increase speed, seed damage percentage was also increased. The total average percentage of seed damaged by two row okra planter was 3.51% The first and the second hopper incurred seed damage rates of 4.40 and 2.62% respectively

Seed uniformity test by grease belt method

The uniformity in sowing of seed is more than manually sowing. A measuring steel tape was used to measure the distance between seed to seed in the row. The average distance between seed to seed was 22 cm which was similar to recommended seed spacing as recommended by **NIHORT (undated) in Bangboye and Motolasayo (2006)**. However, the slight discrepancies in the results may be due to seed clogging and other operational factors

Missing rate

The accurate missing rate measurement during operation in the field is not an easy task, keen attention is needed while operating the manually operated planter in the field. It is easy task during laboratory test by use of grease belt method. So, during operation operator and one observer counted the number of seeds missed to drop into the seed tube. Then determined the actual number of seeds drop in experimental area if no missing occurred. During laboratory test the average missing rate was 2.10 %. It was observed that at lower speed of 26.6 rev/min the weight of seed discharged and missing was higher than at higher speed (29.8 rev/min).

GERMINATION TEST

Germination test was done as per procedure described in material method. The test revealed average germination percentage of metered seed was 93 %. However, the minimum germination percentage was found to be 91%. Aforesaid reduction in germination percentage was due to the immaturity of seed as well as damaged seeds.

CONCLUSION

The test of seed metering device (Plate type) of manually operated single row soyabean planter was conducted in Farm Machinery laboratory SHUATS, Allahabad. The angle of repose of soyabean seeds was 24.48°. The developed seed metering device was made by Nylon. The calibrated seed rate was found as 24.99 kg/ha. The average spacing of seed to seed was 22cm which was similar to recommended spacing. The average missing rate was 2.10% and observed high speed increase missing rate. The numbers of cells on periphery of seed metering device was 14. This metering device sowing of soyabean seeds was able to effectively meter the seeds from the hopper into seed tube. The cost of seed metering was less so small and marginal farmer easily purchase.

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ENGAGING THE PROBLEMATIC OF GOVERNANCE AND SERVICE DELIVERY IN DEMOCRATIC NIGERIA: AN OPINION SURVEY

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ABSTRACT

Purposeful governance is a fundamental instrument employed in the achievement of effective and efficient administration of resources and service delivery. Governance and social responsibility require that representatives elected via a legitimate and popular mandate, should give the citizenry adequate and effective representation that would guarantee decent living standard for everyone in terms of availability of basic social needs. The attainment of this objective connotes the purposefulness of governance. It is in this vein, that this research paper interrogates the issues of governance and the state of service delivery in Nigeria's socio-political and economic development milieu. The study made use of both primary and secondary data in the analysis of the phenomena under investigation. While the multi-stage sampling technique was used to select a sample of 6000 respondents from four out of the six geo-political zones, the chi Square statistical technique and Yule's Q were employed to test and determine the validation or otherwise of the stated hypotheses. The study found out that the framework of governance in deference to public service delivery in Nigeria is substandard, lacks purposeful direction thus; efficient and sustainable service delivery has been undermined. Consequently, the institutionalization of a systematic process of good governance control is required to encourage and sustain active public participation to ensure accountability, efficiency and effectiveness in service delivery.

KEYWORDS: Nigeria, purposeful governance, service delivery, transparency, accountability.

INTRODUCTION

The idea of a democratic system of governance connotes equality and rights of opportunity for everybody, recognition of accepted governance, representativeness, popular sovereignty, minority rights, consensus consultation, right to select among alternative programmes, agreement on issues of primary importance, along with basically periodic elections (Oke, 2005, 2010), it gives room for participation in the political decision making process, it refute uncertainty, autocracy and protects individual personality and values (Ake, 1991, 1996). Democratic ideals lay emphasis on open competition, popular and accountable association, transparency, freedom to organize, protest and guarantee civil rights and wellbeing. While governance involves the capacity to formulate and implement workable policies, and strongly associated with the level to which government is perceived and accepted as legitimate. It is concerned with improving communal wellbeing, receptive to the requirements of public welfare, capacity to guarantee law and order, deliver indispensable public services and able to create the right policy environment for productive activities (Cheema and Maguire, 2004; Sharma, 2007). Conventionally, government has definite primary roles which are universal and do not vary from one country to another or from one administration to another. There are, in addition, in contemporary political dispensations, certain more explicit goals and objectives which a particular political party in power may have chosen as its own focal point which it advanced in its electioneering pledges, and on the basis of which it got elected into power. Aspects of those goals, objectives and programs are usually assigned to individual government ministries and departments to accomplish. Because administrations have specified tenures, timetables are by and large set for the execution of such programs. It is the duty of an elected official, a political appointee or an office holder to make his/her self acquainted with the explicit goals and programs assigned to his/her office and to utilize modern managerial techniques to fulfill such responsibilities with a view to ensuring the discharge of effective service delivery.

In Nigeria, politics is overshadowed by non-accountability and impunity hence, those elected to political offices as well as political appointees/leaders do not consider accountability to the electorates but to themselves and their political mentors. The problem with the Nigerian political structure is the ineffective implementation of policies, neglect of campaign promises and gross abuse of political power (Anao, 1999; Osaghae, 2006). The objective of this study therefore, is to examine the concepts of governance and service delivery (facilitated by democratic doctrines) as significant features of Nigeria's political dispensation; to assess the current condition of key services (such as health, education, water and electricity) and to what extent these services have impacted the citizenry; and to suggest appropriate policy towards the attainment of effective and sustainable public service delivery in Nigeria. However, this study is not oblivious of the fact that, other forms of government apart from democracy have from time to time produced some acceptable level of governance and delivery of public goods. This study was conducted between March, 2012 and August, 2014. The Study is divided into six sections. Following this section is the conceptual analysis. The next section deals with governance and service delivery in Nigeria, problems and realities. The next portion discussed the methodology. The following section deals with statistical analyses and implication of findings while the following section deals with conclusion and recommendations.

CONCEPTUAL ANALYSIS

This section interrogates the concepts of democracy, government, governance and good governance as it affects delivery of service. The idea of democracy offers the prospect to participate in decision making in the political process. It renounces unpredictability and dictatorship and promotes the consent of the governed protecting human personality and ideals (Ake, 1991). Democracy in whatever form is concerned with recognition of popular sovereignty, equal opportunity, majority rule, representativeness, minority rights, right to choose between alternative course of action, popular consultation, consensus on basic concerns and more fundamentally periodic elections (Ake, 2001; Oke, 2005; Majekodunmi, 2013). The notion of democracy bestows the opportunity to take part in decision making by all adult citizens (Oke, 2010). The citizenry enjoys wide spread participation in the political process. Democracy presents a genuine base for the establishment and solidification of good governance through varying institutional procedures for citizens' participation (Touraine, 1991; Held, 1993; Clapham, 1994; Ghali, 1995).

Governance is the method by which we cooperatively solve the problems and needs of society. It refers to the institutions of the state which makes decisions within specific administrative and legal frameworks and allocates public resources in an accounting manner. A governance perspective encourages partnership between the public, private and non-profit sectors to attain mutual goals (Hambleton 2004, 2008). It is vital at this junction, to distinguish between governance and government. Government essentially is a collective body of elected and appointed body authorized to make laws and arbitrate for the well being of society, while governance is conceived as the practice and arrangement by which a government administers the resources of a society to solve socio-economic and political problems in the society (Mann, 1984; Arowolo and Aluko, 2012). Thus, the institution of government exists to provide good, effective and efficient governance.

Governance may be viewed as the method of exercising effectiveness, efficiency and equity in the management of public affairs that deals with the production, distribution and utilization of public goods such as roads, safety and security, electricity, water, education, healthcare, etc, provided by the state (Cheema, 2005, UNDP, 1997, 2000). The issue of good governance has pre-occupied the attention of development agencies and international institutions, these include, the World Bank and several inter-governmental organizations. These institutions have made the issue of good governance a critical precondition in their aid and donation policies to countries with poor track records on governance. The World Bank (2000, 2004) defines good governance as the procedure or method of exercising authority in the administration of a country's economic and social resources for the purposes of development. By this definition, good governance represents the use of power by the government to promote democracy, accountability and transparency; to formulate and implement good policies; to effectively and efficiently direct the human and financial resources of a country to achieve sustainable development that would reduce poverty (Yahaya, 1999; Igbo, 2006).

Daniel Kaufmann *et.al* identified six dimensions of good governance which include:

1. Voice and accountability (VA), the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and free media.

2. Political stability and absence of violence (PV), perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including political violence and terrorism.
3. Government effectiveness (GE), the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies
4. Regulatory quality (RQ), the ability of the government to formulate and implement sound policies and regulations that permits and promotes private sector development.
5. Rule of law (RL), the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence.
6. Control of corruption (CC), the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as *capture* of the state by elites and private interests (Kaufmann et al, 2006: 4).

Aside the objectives of good governance, there is an intense debate as to what type of political system is well-suited for engendering good governance or put succinctly, what theoretical congruence exists, between democracy and good governance? Two key perspectives can be identified in this regard. Prominent African scholars like Goran Hyden and Richard Joseph recognize a symmetrical linkage between democracy and good governance. To Goran Hyden, good governance refers to “the conscious management of regime structures with a view to enhancing the public realm” (Hyden, 1992: 7). The major components of the governance structure include authority, accountability and reciprocity; these components reinforce the democratic values and practices interchangeably. For example, authority seeks expression in the legitimate use of power where the citizenry elect and control their leaders, while the measurement of accountability refers to the degree to which the people can hold their elected or appointed officials answerable for their actions or inactions. Reciprocity concerns the nature and quality of the social interaction among people in a political environment where individuals are free to form associations to promote and protect their interests (Hyden, 1992). Good Governance in these respects is equivalent to liberal democracy. On his part, Richard Joseph argues that accountability is the most fundamental principle of good governance, actualized through open competitive elections in a democratic society; according, “free and fair elections are the bedrock of any democratic society and the most important means of making governments accountable to the citizenry” (1990: 205). This libertarian position on the association between democracy, good governance and development was supported by Nyong'o (1988), Ihonvbere (1996), Awa (1991), Fatton (1992) and Alderman (1978).

The opposing stance to the libertarian proposition is that good governance is not connected to any particular type of political system. Good governance in effect is concerned with purposeful, effective and productive governance that may be found in a democratic, dictatorial, totalitarian or socialist regime, depending on the type of structures and political leadership provided by the rulers in the management of political power and its results. In this case, the idea of good governance is understood to be holistic substantial and far-reaching (Dunn, 1986; Charlick, 1991; Chabal, 1992). While democracy is undeniably a preferred form of government which may enhance good governance mainly, with respect to the ideologies and principles it propagates and guarantees, nonetheless, it does not add up to nor is it naturally linked with good

governance. The establishment of good governance in Africa according to Mafeje (1995), will be determined among other things by two factors; the degree to which decisions taken by the people would affect and aggregate the interests of the majority and the extent to which their source of revenue are assured.

The concept of service delivery conceptualized as the correlation between policy makers, service providers, and poor people could be linked to the degree of effective governance. It includes services and their supporting systems that are typically considered as a state responsibility. These include social services- primary education and basic health services; infrastructure- water and sanitation, roads and bridges; and services that promote personal security- justice and police (Levin, 2004; Lund, 2004). Carlson et al. (2005) conceptualized service delivery as the association between policy makers, service providers and the poor. In Nigeria, where poverty is prevalent and the indices of human well being such as life expectancy, food security, safety and security, rank poorly, the most critical services required include the provision of physical infrastructure (roads, potable water), empowerment and social mobility goods (education, credit or local capital, employment, access to justice), and life-enhancing and welfare goods (healthcare, social security and safety nets, human rights, policing). These public goods provide the enabling environment for optimizing human capacity and overall development (HDR, 2013). Service delivery interventions can present an access route for more far- reaching governance reforms (Ekott, 2013). Reforms that are necessary to promote longer-term social and political change have more chance of success if linked to reforms in service delivery, which have tangible results and accrue benefit to the public. It is the degree to which the political leadership promotes these ideals and sustains it that the services provided may be considered as effective.

Effective service delivery can be achieved with the participation of the end users in the decision-making, implementation, monitoring and evaluation processes. Without the active involvement of the people in these processes, satisfactory and people oriented service delivery is unlikely to be achieved. If the people are to be actually involved in service delivery, the processes must be open to scrutiny. Transparency opens the process of rule making and regulations known to everyone; accountability not only makes it possible for citizens to interrogate the process, it also assures that those responsible would respond to the contentment of distressed citizens (Cooper, 1990). The extent to which government responds to citizens' demands for particular goods and services depends on the scope of participation and the mechanisms for feedback available to government, the way they are accessed and the amount of time taken to respond. The lack of effective feedback mechanisms to monitor the implementation of policies and programs in Nigeria is a major challenge to public sector management (Hyden (2002; Zhou, 2013). Transparency and accountability involves the establishment of applicable oversight institutions and functions, that would ensure that the management of public utilities are scrutinized and that people have access to justice and can seek redress through legal processes if aggrieved (Olowu and Sako, 2002; Joseph, 1987).

GOVERNANCE AND SERVICE DELIVERY IN NIGERIA: PROBLEMS AND REALITIES

Governance involves mutual and active commitment from political actors, state agencies and groups in the making of policies, in providing public services efficiently, in providing feedback for effective reforms, and being accountable to the citizens in the running of public affairs (Laski, 1964; Awoyinfa, 2011; International IDEA, 2014). It has been asserted that policy

making processes are weak in Nigeria, that because the society is not pluralistic enough therefore, checks and balances mechanism are poor managed (Ola, 1978; Ola and Tonwe, 2009). The problem with Nigeria is not just governance in a general sense, but the various aspects of governance institutions that maintain development and provide service delivery. These represent government ministries and departments that manage public resources and are often beneficiaries of technical assistance interventions by donor agencies (Brown, 2008). North (1990) avers that these institutions are the principal determinant of the long-run performance of economies. Rodrik (1999; Rodrik et al., 2004) perceives vibrant institutions as both the result and foundation of development. It has been observed that the quality of institutions and institutional mechanisms facilitates the rate of growth and development in any given country (Aron, 2000; Jutting, 2003). Therefore, the greater the capacity of a country to provide viable public institutions, the more success it would achieve in terms of sustainable growth and socio-economic development.

Another prominent factor that subsists in Nigeria is the non-existence or non-specification of government goals and programs. There could be some broad idea of government's purpose such as the commitment to enhancement of the well-being of citizens through the provision of certain basic public services or amenities. However, this omnibus declaration requires further detailed specification in terms of the specific programs to be implemented, by whom, for whose benefit and at what cost (Osaghae, 2006). Thus, in Nigeria, many states and local governments do not have spelt out goals, strategies and policies, or where available, there are no effective mechanisms relevant for prosecuting them. Consequently, there is most often no standardized procedure for measuring the effectiveness or otherwise of ministries, departments and organizations (Okpalaonwuka, 1997). Unlike well developed and established democracies, our contemporary political parties have no 'genuine manifestoes', which spell out their ideologies, policies and programs. As a result many of the candidates could not present a well planned and structured programme of action to the electorates. It is no surprise then that the electorates do not know what to expect of their government and its agencies, and that government functionaries themselves have no clear thought-out roles within the broader scope of governance. Unfortunately, this is a fundamental flaw in our system of governance and the customary norm at all levels of government (Newman, 2013).

According to Obadina (2000), The problem of effective deliverable services in Nigeria results from a crisis of governance. Good governance serves to improve the quality of life of the people. However, there is growing dysfunctional infrastructure at all levels of government in the country. This assertion is corroborated by Oyovbaire (2007) that good governance is a prerequisite for authoritative allocation of values to improve the human condition and that delivery of efficient services is essential to qualitative living for all people. The capacity of a government to provide effective and efficient services to the citizenry depicts the characteristics of good governance. Regardless of the yearly budgetary allocations for the provision of services in various sectors of society, there has been little improvement and an apparently progressive degeneration of the existing social services. Some of the challenges facing the country are poor social infrastructure and institutions; bad roads, erratic power supply, limited access to portable water, lack of basic healthcare, ineffective regulatory agencies etc. The plethora of policies put in place by the government is ineffective due to weak institutions and deteriorating infrastructure (Hoff, 2003). Generally, it is the duty and aim of Government to improve the welfare of its citizens through provision of basic services. In the Nigerian setting, services provided at the state and local government levels usually include primary, secondary and tertiary education; health,

sanitation, works and transportation (building, roads and bridges, including waterways), land and natural resources; Agriculture including aquaculture and horticulture; Environment; Culture, Sports and Youth development; Industry and Commerce, etc. Nigeria's domestic policies in respect of provision of services currently tilt towards liberalism and deregulation in view of improved service delivery. Government obviously is gravitating towards a policy of leaving the mainstream economic activities- the provision of goods and services at commercial rates- to the private sector, while retaining to itself responsibility for those goods and services where the economic incentives are not adequate for the private sector to provide them at the quantity, quality and price considered acceptable to or affordable by the average Nigerian.

This apparent economic stance of government was what inspired the National Economic Empowerment and Development Strategy (NEEDS) document and its codicils: the State Economic Empowerment and Development Strategy (SEEDS), as well as the local government equivalent (LEEDS). The NEEDS vision is based on the Constitution; the Kuru Declaration; previous initiatives, such as Vision 2010; and the extensive consultation and participation all over Nigeria that was part of the NEEDS process. The programme's core values depicts the Vision 2010 report, which acknowledged honesty and accountability, cooperation, industry, discipline, self-confidence, and moral rectitude. These documents have the following main goals: wealth creation, employment generation, poverty reduction and value re-orientation (NEEDS Document; 2004). The Millennium Development Goals (MDGs) also feature significantly in the country's transformation and growth initiatives. MDGs were unanimously adopted by the member states of the United Nations in September 2000 as guiding principles to be adopted in the development of individual nations. As member state of the United Nations, Nigeria adopted the MDGs eight point agenda which includes: the eradication of extreme poverty and hunger, achievement of universal primary education, promoting gender equality and empowering women, reduction of child mortality, improving maternal health, combating HIV/AIDS, malaria and other pandemic diseases, environmental sustainability and the development of global partnership for development (UNDP, 2003, 2010). The emergence of SERVICOM (Service Compact Agreement with all Nigerians) introduced in 2004 by Obasanjo's regime which results from an empirical study conducted by Wendy Thomas and his group in 2004, was meant to revamp the dwindling nature of the public agencies and service delivery (Thomson, 2004). Despite great natural wealth, the achievement of these laudable goals has become a mirage, and Nigeria remains poor and socially underdevelopment. If present trend subsists, the country is unlikely to meet the Millennium Development Goals. Poverty and Inequality, Weak and Inappropriate Public Sector have been the bane of Nigeria's socio- economic progress. Rather than focusing on delivering essential public services, successive governments in Nigeria, have assumed control of major sources of national income. Consequently, corruption thrived in public service and has become entrenched in society (CBN, 2003; Abani et al, 2005; Ibrahim and Igbuzor, 2009).

SIGNIFICANCE OF THE STUDY

This study is relevant in the following ways:

- 1) Governance is a serious business which aims to allocate and use resources to improve the standard of living of its citizens- this is a serious challenge in Nigeria.

- 2) The provision of effect and efficient services is reflective of good governance mechanism and strong institutional framework- this is also problematic in Nigeria.
- 3) In the midst of these maladies therefore, it become necessary to conduct this research in an effort to proffer solutions to our nagging situations.

OBJECTIVES OF THE STUDY

Therefore, this study aims to fulfil the following purpose:

- 1) To investigate the status of service delivery in Nigeria;
- 2) To make effort and unravel the causes or otherwise of poor service provision in Nigeria using key selected services; and
- 3) To make useful suggestions to improve the situation.

RESEARCH HYPOTHESIS

Three hypotheses were proposed and tested for this study. These were:

1. There is no relationship between good governance and focused service delivery in Nigeria;
2. There is no relationship between effective implementation of government policies and programmes and provision of adequate delivery of services in Nigeria
3. There is no relationship between adequacy and potency of existing structures of government agencies and institutions and effective, consistent and qualitative service delivery in Nigeria.

METHODOLOGY

The descriptive survey design was adopted for this study. Nigerians of voting age were randomly selected on a nationally representative sample of 6,000 respondents in four of the six geopolitical zones to provide empirical information on the impact of governance and service delivery on the citizenry in Nigeria. The North East and North West Region of the country were excluded due to the high rate of violence and insecurity and its portended risk to research/field assistant in those areas. The principal sampling unit was the electoral ward. The sample size of 6,000 respondents was drawn from the population for administration of questionnaire through the use of multi-stage sampling design which consists of eight states (8); two (2) each from the four geopolitical zones; 32 local government areas (i.e. 4 LGs each) and 64 wards (i.e. 2 Wards each); out of which 5,721 questionnaires were completed and returned (overall response rate of 95%). The Questionnaire was centred on three key service areas: health, education and electricity. It borders on availability and quality of personnel, availability and quality of services, as well as consistency of services delivered. These questions were coined to measure the effectiveness or otherwise of governance in regard to service delivery. This study was conducted between March, 2013 and February, 2015.

Primary and secondary data formed the nuclei of data collection for analysis. The primary source of data was based on the administration of questionnaire, while the secondary source included perusal of textbooks, journals, newspapers, magazines, internet amongst others. The data collected were analyzed using standardized methods. To this end, the Chi-Square (χ^2) and simple percentage were used to test and analyze the questionnaire

BACKGROUND CHARACTERISTICS OF THE RESPONDENTS

Out of the 5,721 respondents, majority of them were males numbering up to 3,342 which represented 58.4% while 2,379 of them were females representing 41.6%. This implies that men are more likely to participate in research activities than women. Also, the age category of 40 years and above constituted the highest frequency of 3,225 representing 56.4% of the respondents while those below the 40 years category make up the frequency of 2,496 representing 43.6%. This indicates that majority of the respondents with sufficient experience are within the age bracket which enhanced their capacity to give informed opinion. Furthermore, the study revealed that 2,019 of the 5,721 respondents representing 35.3% were single while 3,702 representing 64.7% were married. This shows that majority of the respondents are people considered to be responsible and experienced, who can therefore give reliable responses useful to this study. Finally, the study reveals that 1,368 respondents representing 41.4% had primary education/less while 4,353 of the respondents representing 58.6% had secondary/tertiary education. This distribution implies that majority of the respondents are enlightened and therefore in a position to make informed decisions.

TABLE 1:
RESPONSE RATE FOR THE 8 SELECTED STATES

Region	States	Response Rate	%
North Central	Nasarawa	541	9.5
	Benue	742	13.0
South East	Enugu	729	12.7
	Imo	749	13.1
South South	Rivers	809	14.1
	Delta	746	13.0
South West	Oyo	819	14.3
	Ekiti	587	10.3

Source: Field Work (2012/2014)

STATISTICAL ANALYSIS AND IMPLICATION OF FINDINGS

Frequency Distribution

Table 2: Bearing in mind the provision of such services as health, education and electricity, would you say that the government of Nigeria is delivering good governance?

Response	Frequency	Percentage
Positive	2,070	36.2
Negative	3,651	63.8
Total	5,721	100.0

Table 2 reveals that 2,070 of the respondents representing 36.2% are of the view that good governance is delivered in Nigeria while, 3,651 representing 63.8% do not share that view. This implies that majority of the respondents' share the view that Nigerians are lacking good governance in respect of service delivery.

HYPOTHESIS 1

NULL HYPOTHESIS: There is no relationship between respondents' marital status and their opinion about purposeful governance in Nigeria.

ALTERNATIVE HYPOTHESIS: There is a relationship between respondents' marital status and their opinion about purposeful governance in Nigeria.

TABLE 3: Bearing in mind the provision of such services as health, education and electricity, would you say that the government of Nigeria is delivering good governance?

Purposeful Governance?	Marital Status		Total
	Married	Single	
Positive	532	1,538	2,070
Negative	3,170	481	3,651
Total	3,702	2,019	5,721

Source: Field Work

$$\begin{aligned}
 \text{Cal. } X^2 &= 2161.32 \\
 \text{Crt. } X^2 &= 10.83 \\
 \text{Df} &= 1 \\
 \alpha &= .001 \\
 Q &= -0.90
 \end{aligned}$$

RESEARCH RESULTS AND DECISIONS (SIGNIFICANCE)

Using the degree of freedom 1 and the level of significance $\alpha = .001$.

The calculated X^2 (2161.32) is greater than the critical X^2 (10.83). Data are statistically significant with a sample error of 1%. Therefore we reject H_0 and accept H_R .

STATISTICAL INFERENCE

With the probability of 1% sampling error and a 99.9% confidence level, there is a relationship between respondents' marital status and their opinion about purposeful governance in Nigeria.

The Yule's Q of -0.90 implies that there is a very large negative relationship between respondents' marital status and their opinion about purposeful governance in Nigeria.

This means that majority of the respondents are of the opinion that, the provision of services in Nigeria is not satisfactory although, efforts are being made towards that direction.

FREQUENCY DISTRIBUTION

TABLE 4: Are you of the opinion that the implementation of government policies and programmes regarding service delivery in Nigeria are effective?

Response	Frequency	Percentage
Positive	1963	34.3
Negative	3,758	65.7
Total	5,721	100.0

Table 4 reveals that 1963 of the respondents representing 34.3% are of the view that government policies and programmes regarding service delivery are effectively implemented, while 3,758 representing 65.7% do not share this view. This implies that majority of the respondents' share the view that government policies and programmes in regard to service delivery are not well implemented.

HYPOTHESIS 2:

Null hypothesis: There is no relationship between respondents' age grade and their opinion about effective implementation of government policies and programmes regarding service delivery in Nigeria.

Alternative hypothesis: There is a relationship between respondents' age grade and their opinion about effective implementation of government policies and programmes regarding service delivery in Nigeria.

TABLE 5: Are you of the opinion that the implementation of government policies and programmes regarding service delivery in Nigeria are not effective?

Policies and Programmes on Service Delivery not Effective	Age Grade		Total
	40 years+	Less 40 years	
Positive	2,357	1,401	3758
Negative	868	1,095	1963
Total	3,225	2,496	5,721

Source: Field Work

$$\begin{aligned}
 \text{Cal. } X^2 &= 179.47 \\
 \text{Crt. } X^2 &= 10.83 \\
 \text{Df} &= 1 \\
 \alpha &= .001 \\
 Q &= +0.36
 \end{aligned}$$

RESEARCH RESULTS AND DECISIONS (SIGNIFICANCE)

Using the degree of freedom 1 and the level of significance $\alpha = .001$, the calculated X^2 (179.47) is greater than the critical X^2 (10.83). Data are statistically significant with a sample error of 1%. Therefore we reject H_0 and accept H_R .

STATISTICAL INFERENCE

With the probability of 1% sampling error and a 99.9% confidence level, there is a relationship between respondents' age group and their opinion about effective implementation of government policies and programmes regarding service delivery in Nigeria.

The Yule's Q of +0.36 indicates a large positive relationship between respondents' age group and their opinion about effective implementation of government policies and programmes regarding service delivery in Nigeria.

INTERPRETATION (RESULT SUMMARY)

This means that majority of the respondents are of the opinion that the implementation of government policies and programmes regarding service delivery in Nigeria are not effective.

FREQUENCY DISTRIBUTION

TABLE 6: Are the services rendered by government agencies and institutions effective, consistent and qualitative in the following areas?

Response	Health	Education	Electricity	Frequency	Percentage
Positive	832	692	520	2,044	35.7
Negative	998	1003	1676	3,677	64.3
Total	1830	1695	2196	5,721	100.0

Table 6 reveals that 2,044 of the respondents representing 35.7% are of the view that **services rendered by government agencies and institutions are effective, consistent and qualitative** while 3,677 representing 64.3% share a contrary opinion. This implies that majority of the respondents' share the view that **services rendered by government agencies and institutions are not effective, consistent and qualitative**.

HYPOTHESIS 3:

NULL HYPOTHESIS: There is no relationship between respondents' sex and their opinion about effective delivery of services in Nigeria.

Alternative hypothesis: There is a relationship between respondents' sex and their opinion about effective delivery of services in Nigeria.

TABLE 7: Are the services rendered by government agencies and institutions effective, consistent and qualitative?

Effective, Consistent and Qualitative Services	Gender		Total
	Male	Female	
Positive	1,241	803	2,044
Negative	2,101	1,576	3,677
Total	3,342	2,379	5,721

Source: Field Work

$$\begin{aligned}
 \text{Cal. } X^2 &= 6.91 \\
 \text{Crt. } X^2 &= 6.64 \\
 \text{Df} &= 1 \\
 \alpha &= .01 \\
 Q &= +0.07
 \end{aligned}$$

RESEARCH RESULTS AND DECISIONS (SIGNIFICANCE)

Using the degree of freedom 1 and the level of significance $\alpha = .01$, the calculated X^2 (6.91) is greater than the critical X^2 (6.64). Data are statistically significant with a sample error of 1%. Therefore we reject H_0 and accept H_R .

STATISTICAL INFERENCE

With the probability of 1% sampling error and a 99.9% confidence level, there is a relationship between respondents' sex and their opinion about effective delivery of services in Nigeria.

The Yule's Q of +0.07 implies that there is a small positive relationship between respondents' sex and their opinion about effective delivery of services in Nigeria.

INTERPRETATION (RESULT SUMMARY)

This means that majority of the respondents agree that the services rendered by government agencies and institutions are not effective, consistent and qualitative. Although, the gap between effectiveness and non- effectiveness is quite moderate.

CONCLUDING COMMENTS AND RECOMMENDATIONS

This study was conducted to measure the effectiveness and progress of governance through the provision of basic services in the Nigerian socio- political environment. It was observed that a lot of people are disenchanted with the service structure and performances of various public sector saddled with such responsibilities. Actualizing effective and efficient service delivery would require strong institutions and governance control mechanism that encourages accountability and transparency and displays zero tolerance for corruption. This requires clarity of policy and a strong commitment to its implementation. Efforts to strengthen service delivery should therefore be directed at building the capacity of service delivery institutions and putting in place practicable policies and programmes. To restore confidence, government should deliver its promises on good governance which include: rule of law, free and fair elections and accessibility to deliverable services. Others include, poverty alleviation, anti corruption, power supply, security, employment generation and sustainable development. Nevertheless, there is observed from the responses that the governance of service delivery has been moderately effective though not satisfactory, resulting in positive changes in availability, accessibility, and quality. However, it is becoming obvious that the Nigerian government, considering the plethora of issues and challenges of governance, can no longer effectively manage and monitor the provision of services by its agencies and parastatals. It is high time the government determine the strategic services to provide and streamline its functions to ensure effectiveness.

In the light of the above, the following suggestions are proffered:

- 1.) There is need to plan and implement policies that will promote transparency and accountability, engender institutional and structural innovations, produce social and cultural re-orientation to advance human development.
- 2.) There should be determined commitment of the three tiers of government (federal state and local government) in the areas of fund allocation to ensure provision of social services beneficial to the people.
- 3.) Lack of proper coordination and genuine commitment, deficient infrastructural facilities and lack of continuity of developmental policy action and enforcement should be discouraged through proper planning and execution.
- 4.) Poor state of basic infrastructure and weak institutions inhibits sustainable growth and improvement in social welfare. Leadership and stronger institutions could thus, be achieved through education, promotion of popular democracy and free and fair election.

- 5.) The government should as a matter of priority investigate the cause(s) of failures in the execution of service delivery development policies and take pragmatic actions to tackle this serious and persistent malaise.
- 6.) Adequate feedback mechanism, a strong post implementation monitoring, a cultivated maintenance culture involving community participation should be developed.
- 7.) Governance in Nigeria requires a strong law enforcing institution that would prosecute and punish offenders to encourage moral rectitude and fight corruption.
- 8.) Above all, the citizens' through various civil society associations should demand for transparency and accountability in the disbursement of funds, implementation of service delivery programmes; to ensure efficiency and prevent mismanagement. Satisfactory services cannot be achieved through passivity but by placing demand, agitation and pressure on the apparatus or agency of governance.

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APPENDIX A RESPONSE RATE FOR THE 8 SELECTED STATES

Geo-Political Zones	States	LG	Wards	Response Rate	%
North Central	Nasarawa	Karu Kokona	Gurku/Kabusu Gitata Panda/Kare Agwada Bassa Ninkoro	541	9.5

	Benue	Gboko Makurdi Okpokwu Kwande	Gboko South Modern Market North Bank 1 Mbatan Ojoga Okpoga West Moon Mbayoo	742	13.0
South East	Enugu	Udenu Ezeagu	Ezimo Orbai Amata Oghe ii Obinofia Awha	729	12.7
	Imo	Ahiazu Mbaise Oru West (Mgbidi)	Mpam Oru-na-lude Oparanadim Aji Ozara Ohakpu	749	13.1
South South	Rivers	Emohua Andoni	Odegu I Ibaa Obelle Unyeada i Asarama Ekede	809	14.1
	Delta	Okpe Ndokwa East	Ughoton Oviri- Okpe Mereje i Ashaka Ase Aboh/Akarrai	746	13.0
South West	Oyo	Ido Ibadan North	Batake/Idi-Iya Akinware/Akindele Ido/Onikede/Oluna Awo Ward iv, N5A Ward Ii, N2 Ward ii, N3	819	14.3
	Ekiti	Efon Ijero	Efon iii Efon viii Efon v Ijero Ward 'C' Ipoti/Odo/Owa Ward 'C' Iloro/Ijunrin Ward 'B'	587	10.3



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PORTRAYAL OF WOMEN THROUGH THE CHANGING CONTOURS OF CINEMA: ISSUES AND CONCERNS

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ABSTRACT

The present paper deals with the representation of women in Hindi cinema. It focuses on the representational mode of Bollywood and looks at it from global perspectives. The paper traces the representation of women in Indian cinema in the millennium age. Moreover, it also looks at the representation of women from the lens of gender in cinema. This paper has traced the stereotyping of women characters and also recorded the social change in portrayal over the period of time and its perspective on Bollywood. It has traced down the example of changing pattern of costumes in cinema and how it has affected the portrayal of women. Today sexualized imagery works as powerful source in advertisements. This present paper through qualitative research methods has analysed how the changing pattern of costumes has affected the sexual imagery of Women and, how women's sexuality is used to enhance their viewership. Today portrayal of women in cinema depends on what the director needs to show in other words as said in Dirty Picture movie 'Entertainment, entertainment and entertainment'. The feminist approach to cinema asks few remarkable questions like how women are represented in Indian cinema, how the woman's character is positioned in relation to the male character and role of women filmmakers in depicting women's issues on Indian screen.

KEYWORDS: Representation, Women, Bollywood, Globalization and Advertisements.

INTRODUCTION:

Bollywood cinema is a powerful mass medium of communication in India and its cinematic projections are highly impressionistic. The phrase “representation of women” articulate the idea that how does it portray women. It refers to the role assigned to them in comparison to the male lead. Ganti writes Hindi film represents Indian cinema internationally and is regarded as the standard archetype to follow or oppose. Bombay film industry is a male dominated industry. Women pursuing careers within the industry are primarily actress, models or playback singers. This trend has changed in recent years with women making their career as choreographers, costume designers, editors and screenwriters, but their number are smaller in comparison to males (Ganti, 2004).

Today portrayal of women in cinema depends on what the director needs to show in other words as said in *Dirty Picture* movie ‘*Entertainment, entertainment and entertainment*’. Today a film will be flop if it doesn’t have kissing and intimate relationship scenes and also actress with full body covered clothes are considered as banned. The Director needs their actress to be bold by wearing short and exposing clothes.

Feminists took interest in films which is about the under-representation and misrepresentation of women in cinema. The feminist approach to cinema asks few remarkable questions like how women are represented in Indian cinema, how the woman's character is positioned in relation to the male character and role of women filmmakers in depicting women’s issues on Indian screen. Feminist critique of cinema helps to show the reality in a different way. Feminist took up a stance in relation to objectification and silence of women in cinematic narratives. It also evaluated the stereotyping of female characters in cinema (Jain & Rai, 2009).

MILLENNIUM: A GLOCAL AGE CINEMA

Internet is considered a global system of interconnected computer networks. It allows greater flexibility in working hours and location. It is easily accessed by numerous means, which includes mobile phones, data card etc (K & B, 2012). The internet has provided entirely new forms of social interaction. People use chat, messaging and email, to make and stay in touch with friends. Social networking websites such as Facebook, Twitter and My space have created new ways to socialize and interact. Sites like YouTube and Flickr specialise in users’ videos and photograph. With the development of new media and with new technology applied to old media, we can surround ourselves with the powerful forms of entertainment wherever we go.

Today one can very easily get access to videos and clips which are accessible freely, we consider top most searches of Google we will find that *Sunny Leone* or some other popular actress will be in top list, through this our main focus is to show that in Globalized world and through Internet male dominated society is extremely interested in watching content which is full of sexual imagery and exposure of female body. The internet had by now established a vast cyberspace. Cyberspace created communities independent of commonly seen parameters of gender, caste and creed. For Hindi film industry, the millennium brought radical change which gave a jolt to the existing structures of the film industry. Bollywood cinema took a shift from 90s onwards and became more liberal and westernised in context of portraying women. The major shift took place from the portrayal of traditional ‘good girls’ that were the norms of Bollywood films before the 90s.

Globalisation and the diaspora phenomenon have been influential in audience demand as well as industry film production. The processes of globalisation serve as catalyst for the remaking or

reworking of existing gender division (Cullity & Younger, 2004). This transformation process raises questions relating to the capacity and changing role of the Indian woman, both as an audience member and as a film character. Bollywood films are made to attract audiences outside India because of the NRI (non-resident Indian) phenomenon (Desai, 2004).

Salaam Namaste (2005) challenges the exploration of female sexuality and women's empowerment. The narratives of this movie address the issue of live-in relationship between two Diasporic Indians. Ambar (Preity Zinta) is depicted as a woman who puts all her efforts to achieve her dreams. She leaves her family in search of her own life. She is financially independent. She is aware of her sexuality as a woman and is not at all afraid of exploring her needs and desires with the man that she has chosen to live with. When she accidentally gets pregnant; she opts to be the single parent of her child when her partner refuses to take responsibility. This film promotes the concept of an Indian woman living her life according to her own ideals. *Salaam Namaste* is one of the movies that are departure from the ideologies and the patriarchal system.

There are also significant films where contemporary society was interpreted through the life experiences of the woman protagonists such as films by Madhur Bhandarkar who uses the protagonist to expose the society's evils and practices. His movie *Fashion* (2006) reveals the darker side of the fashion world, and the pleasures and pitfalls in the life of a model through the lead female character Meghna (Priyanka Chopra). *Satta* (2003) is the story of a liberal, educated woman Anuradha (Raveena Tandon) who falls in love and marries a politician's son. Even after knowing the fact about her in-laws' corruption; she is forced to step into the world of politics where she has to learn to play politics of power to survive.

Women centric films that connect with both the male and the female viewers are gaining numbers. Nandini Rao, Professor of Sociology says that Madhur Bhandarkar as another director who does justice to women. He portrayed them as strong individual straining to break out of the shackles of society and carve their own space in a man's world. This millennium period was responsible for heralding some startling change in social and gender stereotypes (Hindu, 2010). In the films of the new millennium, changes occurred in construction of women character. They are depicted as sexual beings without any hint of shame as it was depicted in older films.

In the new millennium the dressing room of heroines took 360-degree turn. Costumes play on the emotion of the audience. The dressing room of the actors' extended its capacity and encompassed the actor's personal wardrobe. Karan Johar's films are combination of traditional and contemporary looks. In *Kabhi Khushi Kabhi Gham*, Kareena Kapoor wears backless top and miniskirts and on the other hand Kajol wears a chiffon sari which projects the image of traditional Indian married woman. In terms of costumes the movie is blended with both elements. In the fifties, the sari was symbol of modesty, covering the bosom and the navel. The image of woman with this attire presented them as 'Bhartiya Nari'. It was clear that the dressing room in millennium age was not dependent on the character's moral behaviour or marital or economic status. It was all about visual appeal.

READING SOCIAL CHANGE IN PORTRAYAL:

The study focused on the construction of heroin and how the demands of diverse local and international audiences are served, the construction of women as "good" and "bad" and what each part represents and evokes. The main important question will be answered that how the changes took place in construction and representation of women in Indian films. In 1960s, some of the film directors challenged the very notion of stereotyping of women at that time.

Hindi language cinema provides a platform to audience to identify themselves with the characters as portrayed on screen. Bhattacharya says that Bollywood films bring the world home for many Indian immigrants who want to see their stories of migration and feeling of isolation, displacement written into the narratives of these films (Ayob, 2008). Construction of women character in Bollywood shows strong link to cultural and traditional factors. Indian films as cultural products signify the important role that culture plays in the construction of characters specifically (Gopalan, 1997).

The construction of women characters in Bollywood films has always been in tension with the cultural context. The narratives of Bollywood films also depicted women characters who fight for justice and equality in doing so they simultaneously deviate from the traditional roles. In the film *KuchKuchHota Hai*, Tina is depicted as 'westernized' in appearance but hero falls in love with, when the hero comes to know that in spite of her upbringing in London she has still maintained an Indian values. As a result of sacrifice and surrender are virtues of women characters (Kaur & Sinha, 2005). Feminist author Sahoo writes (Lowen, 2008) love marriages is always seen as taboo and sin in society. Many Indians think that arrange marriages are more successful than love marriages. As a result, Bollywood filmmakers often have to balance the emergence and adoption of "Western" values, perceptions with Indian women's empowerment and the preservation of traditional values on the other when constructing women characters.

Leonard (2007) clearly states that Bollywood filmmakers depict women as less shy by placing them in situations where they look into their lover's face and eyes and proclaim their love forcefully. The dresses of women have also changed over the years and in recent films, most of the heroines wear dresses like Western women such as mini skirt, light jeans etc. The general belief in Bollywood industry are that romance can be best expressed through music. Open display of affection and love between man and women are generally considered a taboo in Indian culture as opposed to Western culture (Ganti, 2004).

CHANGING PATTERN OF COSTUMES FROM CLASSIC TO MILLENNIUM ERA:

Costumes acted as moral indicator. The traditional Indian costume 'sari' was the dominant costume in the fifties. Sari was a costume which covered the entire body and it worked as a metaphor for the ideal character's moral values. They do not rebel; audience is informed that her strength lies in her ability to endure all the sufferings. The married woman used the sari's pallu to cover her head as a mark of respect. Single women often dressed in salwarkurtas. Representing their marital and economic status, social and moral behaviour, hairstyle also played a significant role in consolidating the image of the woman.

Jewellery such as bangles, anklets and necklace was an important part of the *sringar rasa*, the aesthetic of love and beauty in the performing and visual arts of India. The visuals were devoid of colour in the fifties. The traditional concept of beauty in India is sensual. Sensuousness was achieved not by costume it is achieved by the scene setting, the body language, the dialogues or the song sequence. While the female audience identified with the character portrayed by the heroine in the film, how she looked and what she was wearing contains equal importance.

The change from black and white to the Technicolor infused a spirit of invention and experimentation into the dressing room of the 60s. Costume designers turned creative with the fabric and design. The styling of *Mughal-e-Azam* became the benchmark for costume drama in Indian films. The sixties were notable for the fact that this decade saw innovation in Indian apparel. The saris were usually georgette or shimmer, with heavy border. Though sari was

irreplaceable, the salwarkurta became more visible. The dupattas were used for styles rather than function. It was a shock for the conservative Indian audience when they saw Sharmila Tagore in bikini in *An Evening in Paris*. Glamour was restricted to heroines; the vamp also got a makeover too, they came up with deeper necklines and higher slits and flamboyant costumes- it was much like of the Follies of French theatre or the carnival costumes of Latin America (Somaaya, Kothari, & Madangarli, 2012).

Glamour took a step back in realistic cinema where costumes were kept within the context of the characters' background. In *Teesri Kasam* (1966), Waheeda Rehman was visible in simple sari when not on stage. Make-up artist came up with new changes but in keeping with the traditional concept of beauty. In the film *Love in Shimla*, heroine Sadhana undergoes a change from tomboyish look to that of a beautiful woman. Sitting in the dark theatre, the woman in the audience noted her idol's fashion statement and tried to replicate it in her own life.

The seventies was a tumultuous period because society was in search of freedom. There was an eagerness to explore and an easy acceptance of change and new ideas. This was evident in the costumes in 1970s. There was breakaway from the formal concepts of the past. Low waist bell-bottoms paired with bell sleeved tight tops were the new trend of this era. Hindi film female protagonist started exposing which was not the trend of the past. Heroines started wearing short-skirts, deep necklines etc. which started the trend of showing skin.

The alternative lifestyle created a unique style of dressings which influenced the culture of the time. One of the defining images of this culture had been kurti which was the shorter version of kurta. The Hindu religious symbols were embossed on the kurtis with saffron colour. The culture and costume were showcased in ZeenatAmam's movie *Hare Rama Hare Krishna*. The eroticization of costumes can be seen in Raj Kapoor's movie *Satyam Shivam Sundaram*. In the dream sequence of the film, the Bharatanatyam costume was reduced to its bare minimum.

The Costumes were still stereotyped to reflect moral values of the character. In Manoj Kumar's *Purab Aur Paschim*, the protagonist Saira Banu initially wore western dresses but later she was visible to the audience in totally Indian attire like saris, jewellery etc. which reflected the change from westernized 'modern' woman to Indian ideal wife. The seventies saw a breaking away from the rather formal concepts of the past, 'shringar rasa' becoming secondary to a more westernized sense of styling. The body language of the heroine reflected their confidence, not a submissive part of their personality. Women in the seventies were restricted for what they wore in the films: 'good' women could wear short skirts and not to be punished for it.

The industry opened its arms to a new profession: the fashion designer. Heroines of Yash Chopra's film were feminine and sensuous but not brazen in sexuality- be it Sridevi in *Lamhe* or Juhi Chawla in *Darr* and Kajol in *Dilwale Dulhaniya Le Jayenge*. The Costumes of these heroines firmly proved their image of womanhood. Ram Gopal Varma's women were bold in terms of their personality. They were quite aware of their sexuality and their costumes reflected this. In *Rangeela*, Mili's (Urmila Matondkar) urge to get fame is brilliantly personified by her costumes. She wears mini-checked skirts, tight Lycra tops and swimming costumes which show her petite figure. The audiences were exposed to international trends, styles and visuals. Movies like *Dil To Pagal Hai* and *Rangeela* brought sporty and western outfits as the official young look and this was especially favoured by MTV-inspired generation (Somaaya, Kothari, & Madangarli, 2012). Cinema has seen a drastic change from the period where female body was covered with full of clothes to present day where female body is preferred wearing minimal and exposing clothes. Females throughout the history of Indian Cinema have been considered as element of male gaze. And this idea has been utilized by the producers in selling the products too. The

notion *Jo dikhtahai Wobiktahai* is perfectly used by the advertisers, they use the sexual imagery and female body to promote the sale of their products.

STEREOTYPING OF WOMEN CHARACTERS:

The ideal women in Bollywood, according to Das Gupta (1996) have also traditionally been controlled, castes, screen, during individuals have not been afraid of making sacrifices for others, especially their male relatives. The 'lead' women on the other hand have been depicted as westernized blonde-haired, individualistic and sexually aggressive.

The depiction of women in commercial films was challenged by a small number of directors in the late 1960s that came to be known as the "New Wave" (Dasgupta, 1996). Those "New Wave" films were more focused on social realities. However, Das Gupta argued that the main themes for these directions are exploration of women's status and social roles. The actress of films argued that the screenplays in which women are constructed as dominant and the powerful are major break from the stereotypical role as submissive and dutiful mothers and wives.

Bollywood has witnessed the role-reversal type of setting in narrative through this gender issue are challenged. Seeing the man in the kitchen may have been a social taboo earlier, but now it is becoming more acceptable in modern Indian marriage. Ambar in *Salaam Namaste* does not have the time or the inclination to be the conventional "dutiful Indian wife" who will stay at home and wait for her man to come home. It is clearly traced that women portrayed in the films made in the 21st century are more active in decision making and this thing made them independent and rational being. Women characters are revolting against the patriarchal system by boldly choosing the lifestyle that they desire for. Role of women characters in earlier films were based mostly on the traditional norms where women choose to continue to live their life in spite of knowing that their husbands are engaged sexually with other woman.

GENDER LENS:

The picturization and narration of Hindi cinema are undoubtedly male dominated and male centric. Themes have been explored from the male audience's perspective. The representation of heroin in films is always secondary to the male lead. They are devoid of any independent existence and freedom. Women's role is confined only to provide glamour, relief, entertainment to the audience. The 'man' as the saviour and on the other side the 'woman' as the victim is also prominently seen in Hindi cinema discourse. The heroine has to be rescued by the hero if she is in trouble. In recently released film *Ra-One* (2011), hero (Shahrukh Khan) saves heroine from every adverse situation. The film's poster clearly depicts the hero holding the heroine in his arms. It builds up his image as heroine's saviour (tere, 2012). The woman of substance is missing from such portrayals, the women who are self-sufficient in leading her life independently and efficient enough in taking decisions without relying on male support. In such a scenario, women are seen not just physically inferior to men but also intellectually incapable to take important decision and stand.

On the positive side, there are many film-makers who have reacted against the stereotypes set by mainstream cinema and explored subjects from the women's perspective. Contemporary films like *CheeniKum* (2007), *Dirty Picture* (2011), and *No One Killed Jessica* (2011) have portrayed women in totally different shades and central to the main plot of the story. These films have explored women's issues in relation to society and provided them freedom on a linguistic level. All credit goes to the actresses who have not been hesitant to accept bold roles. Actresses like

VidyaBalan in (*Dirty Picture, Ishqiya and Kahaani*) and Konkena Sen Sharma in (*Page 3, Life in a Metro*) have led this change in direction and representation of women's issues on Indian screen.

There are many films which present the example of gender bias on screen and they are not limited to a particular era of films. For instance, in movies related to war women keep on waiting for their lover/ husband endlessly that one day they will come back after fighting war. The courtesan, a subject of examination in many Hindi films (*Devdas, Umraao Jaan, Pakeezah*), is a character that evokes sympathy from the hero. The hero will fall for, will support her in every circumstance but will never marry her because the purity of marriage institution will never allow him to tie a knot with her. Even if the marriage takes place then it happens only on the ground of sympathy. In *Hamara Dil Aapke Paas Hai* (2000), the rape victim Aishwarya Rai finds sympathy and love from hero Anil Kapoor who provides shelter to her after this incident.

It is necessary to understand that such portrayals consists power structures that govern Indian society. The power structures do not impart any agency to women. There is only two types of women characters- the good that is to be idealized and the bad that is to be demonized. So, while films from the earlier era showed women as extremely submissive and docile, recent releases like *Rockstar* (2011) have resorted to heroines who are bold, uninhibited, skimpily clad, and promiscuous. *Munni, Sheila* and *Chikni Chameli* these are popular item numbers in which we find denigration of women being emphasized vehemently. The female body, the male gaze, voyeurism-all of which popular cinema is dependent on. These eroticism and fetishization of female body provides only package of entertainment.

CONCLUSION:

This paper has summarised the representational mode of women in Hindi Cinema. It has talked about the women and their roles in millennium age. This paper has also focused on the costumes of women in different eras, which also played significant role in portraying women in cinema. The main question was answered regarding the highest changes which took place in the construction and representation of women on Indian screen. The study had also observed that many filmmakers have reacted against the stereotypes set by mainstream cinema and explored subjects from the women's perspective. This paper has discussed and drawn a conclusion that advertisement and cinema since its very beginning have always used sexualised imagery of women to promote their products in consumerist society and how these images are affecting the mind-set of society.

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THE DIMENSIONALITY, PSYCHOMETRICS AND STANDARDIZATION OF CAREGIVER DISTRESS SCALE (CDS)

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ABSTRACT

This study was undertaken on 200 caregivers of hospitalized patients. The task was to standardized the caregivers' scale (English and Hindi) and psychometric characteristics i.e. reliability and validity estimated. Cronbach's Alpha of the scale was found 0.82, which is very high. Content validity of the scale was verified by a number of experts, academicians and professionals. Using a more structured method, exploratory factor analysis was conducted and six factors emerged in the analysis. In summing up all six factors explained 59.08% of the total variance which confirms the high factorial/ construct validity. Further, inter-factorial correlations among sub dimensions of caregiver distress found highly significant. It can be concluded that the present piece of research work confirm high reliability and validity of caregiver distress scale. Conclusion drawn, implications and suggestions for future research proposed. Caregiver distress is the emotional and physical strain experienced by a person caring for someone with a chronic debilitating disease or life threatening condition. Caregivers may become patient themselves, especially if they neglect meeting their own psychological and physiological needs.

KEYWORDS: Caregiver Distress, Reliability, Validity.

INTRODUCTION

Caregiver is an individual who has the responsibility of meeting the physical and psychological needs of the dependent patient. Most patients have families that are providing some level of care and support. In the case of older adults and people with chronic disabilities of all ages, this informal care can be substantial in scope, intensity, and duration. Caregivers are sometime referred to as secondary patients who need and deserve protection and guidance. Caregiver distress is the emotional and physical strain experienced by a person caring for someone with a chronic debilitating disease or life threatening condition. Caregivers may become patient themselves, especially if they neglect meeting their own psychological and physiological needs.

Research supporting this caregiver-as-client perspective focuses on ways to protect family caregiver's health and safety, because their caregiving demands place them at high risk for injury and adverse events. There are few situations that are more demanding than being solely responsible for the health and well-being of an aging relative, especially when this stressor must be balanced with ongoing family and work responsibilities (Williams, Dilworth-Anderson, & Goodwin, 2003).

CAREGIVER DISTRESS: CONCEPT

The concept of distress can be defined as a feeling upset, nervous, depressed or angry. A person who feels distressed needs much support and appraisal to cope with the distress. Caring can, however, be demanding, difficult and take its toll, both physically and mentally. Family of caregivers' had often reported experiencing psychological distress, such as the feelings of loss, grief, uncertainty, shame, guilt and anger. The negative impact of the distress caused by caregiving on the well-being of caregivers should not be neglected. Research on caregiving that focused on family members (e.g. partners, siblings, children) of patients with mental disorders or chronic diseases has demonstrated that female caregivers feel more burdened and distressed than male caregivers (e.g. Chang & White, Means, 1991; Lutzky & Knight, 1994; Nijboer et al., 2000; Rose, Rego, Strauss, & Smyth, 1998; Miller & Cafasso, 1992).

Caring for someone with a mental illness often involves both positive and negative feelings (Szmukler, 1996). Caregivers of persons with early psychosis or schizophrenia play an important role in the process of recovery but often experience high levels of distress, including depression, anxiety and subjective experience of burden (Martens & Addington, 2001). Barrowclough and Parle (1997) found that fifty-seven percent of the caregivers were clinically significantly distressed, and Raune and Kuipers (2000) found one third to suffer from depression. While there are a limited number of studies looking at early psychosis, data suggest that caregivers at this stage report higher levels of distress compared to family members of individuals who have a more chronic course of illness (Martens & Addington, 2001). In the early phase of psychosis, caregivers face a number of issues, such as shock, grief and poor understanding of illness and the psychiatric system (Addington & Burnett, 2004). Also, incidences such violence, disruptive behaviour and forced admission can be traumatising, sometimes warranting a diagnosis of posttraumatic stress disorder in caregivers themselves (Onwumere, Bebbington, & Kuipers, 2011). While earlier studies of caregiver distress examined various 'objective' causes of distress such as patients' symptomatology, reduced personal freedom and financial concerns, most recent studies

have adopted a stress-appraisal-coping framework (Joyce et al., 2003; Raune et al., 2004; Szmukler et al., 1996).

DEVELOPMENT OF SCALE

At the initial stage experts in the field of psychology were approached and the aim of developing the scale was explained to them. With the experts' opinion, six dimensions for Caregiver Distress scale were finalized and rudimentary statements developed. Operation definition of construct and sub-constructs are given below:

OPERATIONAL DEFINITION OF CAREGIVER DISTRESS

When, caregiver has feeling to upset, nervous, depressed or angry while caring patients. A person who feels distressed needs much support and appraisal to cope with the distress.

DIMENSIONS OF CAREGIVER DISTRESS

Emotional: A strong feeling deriving from one's circumstances, mood, or relationships with others.

Personal: Relating to an individual or an individual's character, conduct, motives, or private affairs often in an offensive manner.

Dutifulness: Performing the duties expected or required of one, characterized by doing one's duty.

Bondedness: It is the intimacy with which a sign (individual) is connected with another to which it bears a systematic relationship.

Relational: The way in which two or more people or things are connected, or the state of being connectedness.

Supportive: Supportive is someone or something who provides emotional help and encouragement.

FIRST DRAFT OF THE SCALE AND ITEM ANALYSIS:

In the first stage, 24 items were developed with responses on dichotomous format: Yes and No. This scale was administered on a 200 representative caregivers. After scoring the items of each testee, the scores were arranged in descending order (highest scoring to the lowest). Two separate groups, one of 27% from the highest scoring and other of 27% from the lowest scoring were made. Inter-correlation matrix was examined in order to overcome existence of multicollinearity and singularity in the scale. After analysis, 04 items having the multicollinearity and singularity were rejected and the final manuscript of the scale comprised 20 items.

TABLE 1: DIMENSION AND NO. OF ITEMS

Dimensions	Items	No. of Items
Emotional	7,10,6,5,12	5
Personal	16,13,15,18	4
Dutifulness	22,3,23	3
Bondedness	9,11,24	3
Relational	4,17,8	3

Supportive	14,21	2
TOTAL		20

Scoring paradigm on binary system is shown in table 2.

TABLE 2: SCORING SYSTEM

Option	Yes	No
Score	1	0

STANDARDISATION OF THE SCALE

The final manuscript with 20 items was administered on a sample of 200 caregivers selected from different hospitals in Aligarh (UP) and Delhi. The mean age of the caregivers participated in the standardization of scale was 31.20 years with 18 years as minimum and 60 years as maximum. They were equal in numbers in gender.

ADMINISTRATION OF SCALE

Instructions for administration of the scale were printed on the top page of the scale. The scale can be administered individually or in a group but not more than 35 subjects at a time. The subjects were assured that their responses will not be disclosed but will be used for the research and some intervention purposes only. Read each and every item carefully and give your responses candidly.

RELIABILITY

The considerations of reliability and validity typically are viewed as essential elements for determining the quality of any standardized test. However, professional and practitioner associations frequently have placed these concerns within broader contexts when developing standards and making overall judgments about the quality of any standardized test as a whole within a given context. Cronbach's alpha was used for determining the internal consistency (reliability) of the scale. Cronbach's Alpha for this scale was found 0.82 which is significant at 0.01 level. The internal consistency of the scale is quite high and this gives a support that the scale has excellent reliability (George & Mallery, 2003). Table 3 shows the descriptive statistics along with item analysis.

TABLE3: DESCRIPTIVE STATISTICS OF ITEMS, SCALE AND CRONBACH'S ALPHA

Items	Descriptive statistics			Scale Means if item Deleted	¹ Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
	Mean	Variance	SD			
DS1	.29	.207	.455	5.45	.273	.822
DS2	.15	.125	.353	5.60	.373	.816
DS3	.29	.209	.457	5.45	.512	.809
DS4	.47	.250	.500	5.27	.393	.816
DS5	.43	.247	.497	5.31	.530	.807

Items	Descriptive statistics			Scale Means if item Deleted	¹ Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
	Mean	Variance	SD			
DS6	.16	.132	.363	5.59	.389	.816
DS7	.06	.057	.238	5.68	.279	.820
DS8	.33	.222	.471	5.41	.503	.809
DS9	.09	.082	.287	5.65	.229	.822
DS10	.43	.246	.496	5.32	.415	.814
DS11	.42	.245	.495	5.32	.452	.812
DS12	.66	.227	.477	5.09	.164	.828
DS13	.29	.207	.455	5.45	.478	.811
DS14	.21	.164	.405	5.54	.426	.814
DS15	.12	.106	.326	5.62	.417	.815
DS16	.49	.251	.501	5.25	.393	.816
DS17	.34	.226	.475	5.40	.499	.809
DS18	.25	.188	.434	5.49	.423	.814
DS19	.20	.158	.397	5.55	.419	.814
DS20	.08	.070	.264	5.67	.296	.820

¹ r = 0.164 (p<0.001) two tailed

It can be seen from the table 4 that Cronbach's Alpha for items are varying from 0.809 to 0.828, which is quite high and confirm high consistency among items. Table 4 shows descriptive statistics and reliability for the scale as a whole.

Table 4: Descriptive statistics of Scale and Reliability (Cronbach's alpha)

Statistics Scale	Mean	Variance	Std. Deviation	Alpha Coefficient	N of Items
	5.74	16.57	4.07	.82	20

CONTENT AND CONSTRUCT VALIDITY

Content (Face and logical) validity of the scale was verified by number of experts and academicians. There are various methods to establish construct validity of the tool. Factor analysis using Principle Component Analysis (PCA) with varimax rotation was conducted to establish the construct validity of the scale. Data screening was carried out in order to overcome existence of multicollinearity and singularity of items in the scale. For testing multicollinearity and singularity 'Determinant' of the R-matrix was estimated and it was

greater than 0.00001. Sampling adequacy was also carried out and found to be greater than 0.50. Table 5 shows factor structure, percent of variance and cumulative percent of variance for each factor. Item qualified to include in the scale was selected for which loading was greater than and equal to 0.40.

TABLE 5: FACTOR STRUCTURE OF THE CAREGIVER DISTRESS SCALE (CDS)

Item No	Dimensions	Factor Loadings					
		I	II	III	IV	V	VI
DS5	Emotional	.745					
DS8		.647					
DS4		.628					
DS3		.621					
DS10		.577					
DS14	Personal		.754				
DS11			.712				
DS13			.654				
DS16			.462				
DS18	Dutifulness			.746			
DS1				.603			
DS19				.550			
DS7	Bondedness				.743		
DS9					.729		
DS20					.428		
DS2	Relational					.715	
DS15						.611	
DS6						.486	
DS12	Supportive						.820
DS17							.514
Percent of Variance		13.182	12.135	9.338	9.062	8.514	8.514
Cum. Percent of Variance		13.182	25.317	34.656	43.718	52.232	59.084

The percent of variance accounted by factors varies from 8.514 to 13.182%. In summing up all six factors explained 59.08% of the total variance. The factorial validity of the scale is very high. Table 6 shows inter-factorial correlations and Cronbach's Alpha for factors.

TABLE 6: INTER-FACTORIAL CORRELATIONS AND CRONBACH'S ALPHA DIMENSION WISE.

Dimensions	Factor 1	Factor 2	Factor 3	Factor 4	Factor5	Factor6	Reliability
Factor 1	1						.74
Factor2	.422	1					.68
Factor3	.339	.308	1				.59
Factor 4	.238	.162	.402	1			.51
Factor5	.438	.391	.231	.296	1		.56
Factor6	.291	.347	.232	.096	.237	1	.46

$r = 0.164$ ($p < 0.001$) two tailed

Inter-factorial correlations indicate that all factors are significantly correlated with each other at the level of $p < 0.001$ and measuring the same construct. The Cronbach's Alpha for factors is varying from 0.46 to 0.74 and is moderate to high.

CONCLUSION

1. Reliability, validity and stability data based on 200 caregivers of hospitalized patients exhibited that caregiver distress scale has quite satisfactory psychometric properties. It can be concluded that the caregiver distress scale is highly reliable and valid to measure the distress of caregivers.
2. The more structured, exploratory factor analysis provided evidence of the construct or factorial validity which was found to be highly satisfactory.
3. Inter-factorial correlations indicate that all the factors are significantly correlated with each other and measuring the same construct which confirms inter-factorial validity of the scale.
4. The effect size shows high strength of relationship among items for the respective sub dimensions of caregiver distress scale.
5. The results of the present investigation exhibited that the bilingual version of caregiver distress scale can be used to study individual's care giver level of agony. This scale can be used to plan intervention for controlling and modifying the level of distress.

IMPLICATIONS

1. In this study we have sought to standardize the caregiver distress scale on the basis of the representative sample. It has been established that psychometric properties (reliability and validity) of the scale are highly satisfying. Accordingly, the first major practical contribution of present research is that it provides sufficient background to measure the caregiver distress.
2. After reviewing a number of research studies it can be opined that six proposed facets are sufficient to explain the caregiver distress.

Our study, being of an exploratory and interpreting in nature, raises a number of opportunities for future research. More research will in fact be necessary to refine and further elaborate our novel findings.

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ECONOMIC EFFICIENCY OF AGRICULTURE BIOLOGICAL METHODS OF PEST PROTECTION, CASE OF INDICATORS TO DETERMINE THE EFFECTIVENESS OF THE SYSTEM.

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ABSTRACT

This article describes the system of biological protection of plants in agriculture, protection, management structure and cost-effectiveness of plant protection and agrochemical center organizational structure of plant protection are analyzed. Economic efficiency of agriculture biological methods of pest protection, with the indicators to determine the effectiveness of the system are concluded. Extended results may lead to better investigation while highlighting outcomes and shortcomings of topic as whole. As well as the effectiveness of protection of biological methods of agriculture or the need to clarify the nature of the economic productivity (Valipour et al., 2015). Production efficiency is a very complex economic categories. It is the objective economic laws, which represents the basis of social production - the result, which reflects the outcome. The end result or goal of any activity. To understand term of productivity and the need of it we need to distinguish between the concept of economic efficiency ('Food and Agriculture Organization', 2015). Any assessment of the activities of the undertaking in a market economy as the main criteria of economic efficiency and the total cost of the economic unit of the net profits are used. Net profit advantage is that this is a category of product quantity, quality, and sold in the market, reflected in the financial expenses for the period and how much savings (Akimov & Dollery, 2006; Asadov & Aripov, 2009)

KEYWORDS: *economic efficiency, product, food, farm management system bioloborotoriya biofabrika income biomahsulot, biiousul, dressing, administrative staff, executive, hardware, and consulting services.*

INTRODUCTION

In a certain form of socio-economic system, its efficiency level is one of the main conditions of the emergence and development. Therefore, the protection of biological methods of plant pests to develop the methodological foundations for the economic efficiency of the system of indicators to determine the effectiveness of methods is one of the most important tasks (Elmer, 2014).

First of all, the efficiency of the market economy, which is based on a set of criteria or indicators that the evaluation will be necessary to resolve the issue. As well as the effectiveness of protection of biological methods of agriculture or the need to clarify the nature of the economic productivity (Valipour et al., 2015). According to literature review efficiency, effectiveness and economic efficiency of the meaning and importance of this term have been investigated in different ways on the approach to interpret them differently.

Effectively managing the development of a competitive market environment and the viability of the enterprise are one of the main factors of determining the most. At the same time the production process and economic resources require a number of features such as land, capital, labor, etc. This is the limited nature of the need to make effective use of them effectively as possible. Production efficiency is a very complex economic categories. It is the objective economic laws, which represents the basis of social production - the result, which reflects the outcome. The end result or goal of any activity. To understand term of productivity and the need of it we need to distinguish between the concept of economic efficiency ('Food and Agriculture Organization', 2015). Agricultural economists, scientists like I. Rajabov, the effect of this wider meaning, as a result of any event or activity, fertilizer use efficiency, increasing the yield of crops, feed efficiency, expressed in increasing the productivity of livestock. However, this effects the increase in the yield and shows how beneficial productivity of these events. The costs associated with the use of fertilizers and feed rate costs with the income obtained from taqqoslangandagina. As a result of the use of fertilizers and fodder crops, livestock productivity limits the effectiveness of the technical expression for this event, with the costs associated with the event, and represents a comparison of income received as a result of cost efficiency (Abdukirimov B.A, 2013; Ajwad et al., 2014; Calhoun, 2013).

THEORETICAL BACKGROUND

The economic efficiency of the means of production and live results obtained through the use of labor per unit of total resources refers to the results obtained. In determining the size of the evaluation of this or that event or need to know the criteria of economic efficiency. A market economy and every business a full economic and legal resources attached to the goal of independence for its full and effective use of the resources unit gets more revenue and profit will be given to up to competition. Any assessment of the activities of the undertaking in a market economy as the main criteria of economic efficiency and the total cost of the economic unit of the net profits are used. Net profit advantage is that this is a category of product quantity, quality, and sold in the market, reflected in the financial expenses for the period and how much savings (Akimov & Dollery, 2006; Asadov & Aripov, 2009).

In determining the economic efficiency that allows the evaluation of the effectiveness of the economic activity of economic entities in accordance with the contents of market relations in the system of criteria and indicators should be considered.

Given the independence of the farming enterprises in the process of transition to a market economy, they are not only manufacturing operations will become independent, but independent of their products to consumers and suppliers to participate in the financial markets and the amount of profit after payment of taxes and other payments, were able to free distribution .

Professor K.A Choriev that the interests of the owners of farms on adjacent land, and the use of revolving funds, crop yields, livestock productivity, production costs, labor productivity, income and profitability indicators, external partners and creditors of the farm of solvency, capital structure, drew attention to the main indicators of business activity and profitability(Djanibekov & others, 2008).There may be concluded thatfarmers' economic benefits in determining the effectiveness of a market economy based on the contents of the species and their corresponding criteria and indicators to use the system. Professor R.X.Xusanov and Professor N.S.Xushmatovlar market economy, prices for industrial products and agricultural products between the asymmetry conditions, resource prices as a result of the growth of intermittent stream difficult to assess the economic efficiency of the company pointed out that the evaluation of the activities of economic entities in accordance with the use of a set of indicators will be divided into two categories. It is recognized that this is kind of the first group and the second group can estimate the cost of items.Natural indicators of economic performance indicators are not directly express this event cannot be fully assessed. Because the natural indicators, represents the intensity of the process. Therefore, to improve crop yields and livestock productivity, land use, improve the performance of the machine and tractor year **serve** to increase the efficiency of the farm. Product and income between the different factors of production of integral (functional) is the result of the value of the indicators. On this way, value indicators are not only in the same time serves as a measure of economic value, which represents the commodity-money relations.

It should be noted that the views of the scholars listed above recognized case of agricultural plants as the primary criterion for the evaluation of the effectiveness of the biological protection to the farm with the result of the use of indicators in accordance with the decision. In addition to maintaining biological service for dressing or increase crop, yields and cost savings of households and an increase in the level of profitability at the expense of others should be the main indicators(Akimov & Dollery, 2006; Gürgen, 1999).

At the same time, the system of indicators of different approaches to change accordingly. For example, if the biological point of view of the enterprise approach in which the key figures include the company's profits, the level of profitability, based on the exchange rate of return and others can explain. If we approach taken by the agricultural enterprise, where the cost of agricultural products grown by the share of the costs of this service, a unit of account of the bioproducts could serve as an example of dressing and others(Jeffries, 2013; Kaplan & Haenlein, 2011). Therefore, we assess the true economic efficiency or effectiveness will depend on the context in which this issue approaches. If we make the agricultural sector, more efficient point-sense approach is a system of indicators requires the use of indicators of change while using some macroeconomic features.There is another important aspect of this is the fight against plant pests and diseases in agriculture, which factors determine the dependence of the efficiency of the system. Because, in large measure the efficiency of agricultural production will be closely linked to the establishment of an efficient service areas. Evaluation of the impact of these factors and how their effectiveness through the development of the program of measures for the development of sectors. This area is an important improvement of the investment and financing mechanism.

At present, the efficiency of the plant protection system is influenced by many factors, the nature of their nature and origin of the following, which is, economic factors, organizational and social factors, natural factors as well as technical and technological factors.

Institutional factors against plant pests and diseases closely related to all the factors that affect the system, which directly affects the efficiency of agricultural production. These factors ownership relations, economic and production patterns, as well as the direction of specialization and the level of management and organization of production methods and others. All the relations of property relations, property and dispose of it depends on the degree of freedom of the form of ownership of a variety of biological protection services to enterprises increased competition between them increases. Currently, more than 800 bio laboratories in various forms of ownership and economic activity in the country.

ECONOMIC EFFICIENCY OF AGRICULTURE BIOLOGICAL METHODS OF PEST PROTECTION, CASE OF INDICATORS TO DETERMINE THE EFFECTIVENESS OF THE SYSTEM.

Biological methods of plant protection organization of production, production and management methods are also important to be in accordance with the laws of the market economy. Regional structure of crops production and paid special bio-service organizations will be in accordance with the special purposes that the cost savings and directions experts from borage to effectively carry out the work (Gilmore, Collin, & Townsend, 2007; Juraev, n.d.).

Another one of the main economic factors. These factors are taken into account of the biological effect, bio services as it is necessary for the production of barley, honey, eggs, and the cost of materials and services, biological service and to pay the fee on time, their financial stability, and public financial support. Social factors are grouped in accordance with the proposed systematization, because they use biological methods of plant protection is also actively involved in improving the efficiency of production. Biological methods of plant protection system is not efficiency for only institutional, economic, technical and technological factors, but also the production process plays an important role in the socio-economic conditions. In addition, financial incentives to enable the improvement of forms of human factor, personnel qualifications, and their cultural and technical levels by the workers employed in the sector, increasing employment, improving the incomes of such factors, and these factors through the social dimension of the production possibilities of improving the efficiency of agricultural production wide open. The effectiveness of the fight against plant pests and diseases in agriculture, as well as the developed bio product quantity, quality and impact largely depends on natural factors. to them; weather, climatic conditions, factors such as the development of biological processes in nature in any way. In fact the biological effectiveness of the services of these aspects will be closely connected. If an increase in diseases and climatic conditions pests. The system is very easy to come to Bologna to remain helpless in the face of his wedges, and the use of other methods. At the same time, a decrease in the biological effectiveness of the service and cause damage to farms as a result of alcohol.

Technical and technological factors include, biomaxsulotlarni production process is technical and technological provision how the modernization of the existing mechanical and power lines (universalization). In recent years, the production of bioproduction mechanized production lines, including the production of Trichogramma MLT-28-14-brand . Replacement increases the

implementation of the 12-brand while moving ages for 2-to-date production equipment(Karieva & Usmanov, 1997).The effectiveness of biological methods of plant protection system that not only affect the above-mentioned factors, along with a number of objective and subjective factors, of course.

So the first place, depending on various conditions or technical and economic factors. Agriculture intensive basis, the conditions and the introduction of innovative technologies, often technical, organizational and economic factors in the first degree. Under market economy conditions, biological methods of plant protection system is the birth of a healthy competitive environment. Otherwise, the production efficiency can not be achieved with this system.

Based on the above indicators determining the efficiency of agricultural biological protection systems need to be developed. V.A Cherkasov and the same period, according to Grinberg biological protection service for the management of agricultural production means, when the economic system as a supplier, but only the status of the production process, changes will need to know. It was bio laboratory both the planned and actual performance indicators, which characterize the activity (in kind and value). As you know, based on cost effectiveness bio laboratories laws to find ways of achieving economic and social growth.

In this perspective, the authors emphasize that the system should reflect the following indicators, including:

• the rate of increase in volumes of biological plant protection means;
• biological plant protection means the level of spending based on scientific principles;
• the production of biological plant protection means the ratio between the volume and demand of agriculture;
• arranged to produce biological plant protection means and the ratio between production and resource volumes;
• use of biological plant protection products and their labor productivity growth rate and others.

At the same time, the indicators system serving bio laboratories regions should reflect the ultimate results. These indicators include:

- increase the volume of production of agricultural products and improved quality;
- plants biological protection to means application As a result of chemical processing to quantity and volume shortening;
- As a result of the application of biological plant protection means the volume of agricultural production and the rate of increase in labor productivity, and so on.

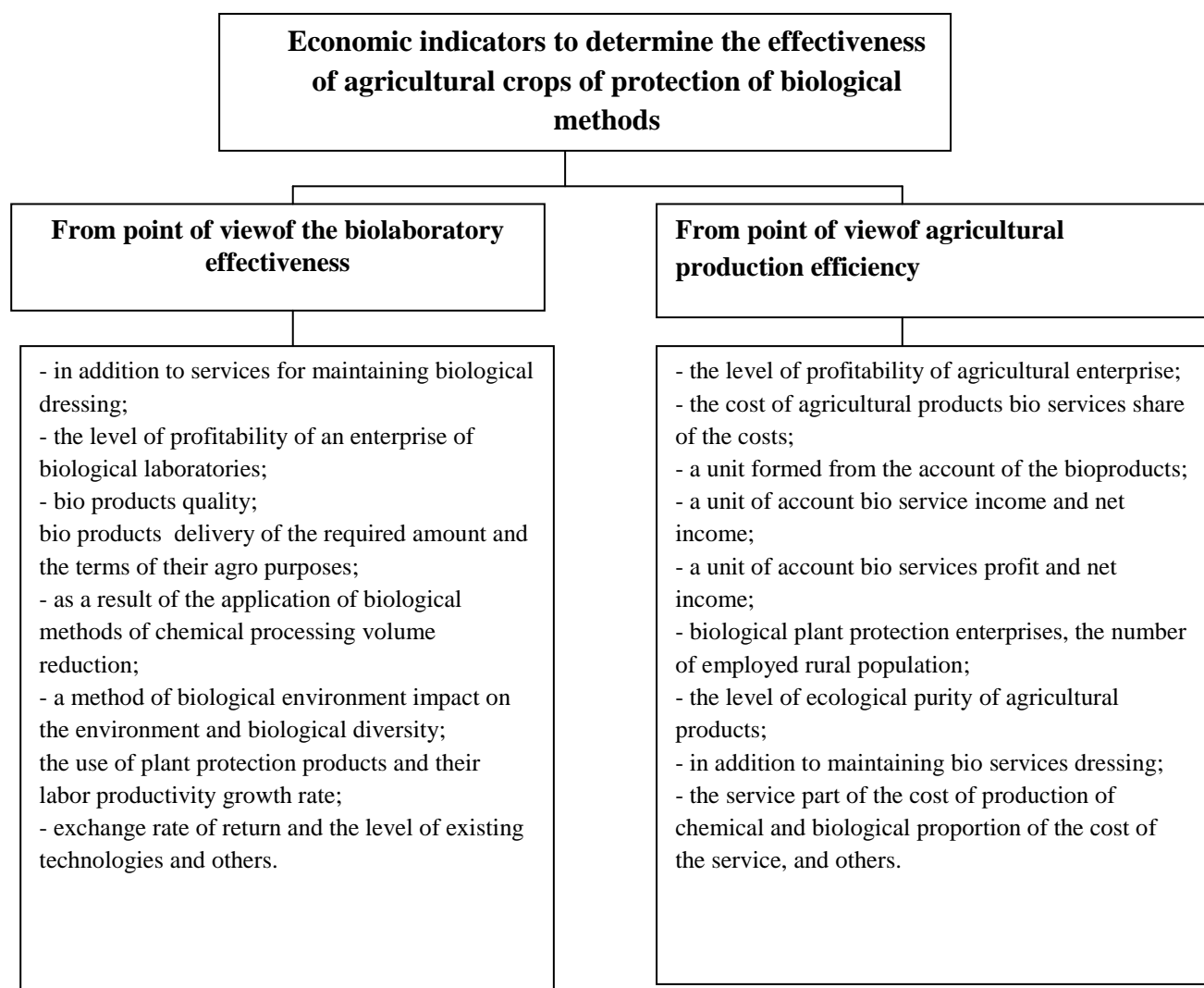
This is a market economy and various forms of ownership of operating conditions, the economic efficiency of an enterprise of the biological protection, full coverage can lead to some inaccuracies. Therefore, the purpose of the use of the following indicators decision (section 2.1.1).

1. Biolaboratory effectiveness point of view:

- biological service show return save withheld additional dressing;
- biolaboratory venture profitability level;
- bio products (Trichogramma, Bracon, Oltinko'l, etc.) quality;
- bio products delivery of the required amount and the terms of their agro products.

2. As a result of the application of biological methods of chemical processing volume;
 - a method of biological environment impact on the environment and biological diversity;
 - the application of plant protection products and their labor productivity growth rate;
 - exchange rate of return and the level of existing technologies and others.

3. The efficiency of agricultural production point of view:
 - The level of profitability of agricultural enterprise;
 - the cost of agricultural products bioxizmatga share of the costs;
 - playing in the unit of account of the bioproducts;
 - due to a single biomahsulot income and net income;



Source: The author concluded on the basis of scientific research.

Figure 2.1.1. Agricultural crops of economic indicators to determine the effectiveness of protection of biological methods

- due to a single bio product profit and net income;
- the number of the employed population of the villages in biolaboratories;
- The level of ecological purity of agricultural products;
- Bio service retained as a result of the additional cost of dressing ;
- The cost of the service part of the cost of production of chemical and biological service ratio, etc., and others.

CONCLUSIONS

As a result of the impact of global climate change and human nature directly assess the effectiveness of the protection of agricultural biological methods of pest not only economically, but also in terms of the balance of the ecology of the environment to determine the effectiveness of approach is also important in the future. Therefore, the protection of biological methods of plant pests to develop the methodological foundations for the economic efficiency of the system of indicators to determine the effectiveness of methods is one of the most important tasks. The developed system of indicators that the two most important issue of comprehensive coverage will be an important factor in getting.

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THE REALITY OF 21ST CENTURY INDIAN WOMEN: SOCIAL PERSPECTIVE

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ABSTRACT

India is no longer a country of religious people. We are a confused lot. We don't know what to accept and what to reject. They along with their parents create havoc in women's lives. And ironically women often themselves are a part to it. There are mothers instigating their sons to beat up the wife. Till date a boy-child is treated with more care than a girl-child. The girl along with her family will be left to suffer for all throughout their lives. Is the only the judiciary responsible or the girl herself. There is a need for a woman to realize her own individuality. Women are fulfilling the roles which sometimes added strain, but also provide them with a feeling of contentment in fulfilling their duties. Girls must enjoy the right to birth, right to freedom, and right to education. Girls are biologically stronger than boys and must receive adequate nutrition, health care facilities and education.

KEYWORDS: *Ruthlessness, Civilized Home, Judiciary, Internalized, Conceptions*

INTRODUCTION

In India women are in situations worse than cattle. This is not just restricted to the rural area but it also extends to the so-called urban civilized world. Even here the so-called educated, well-fed, well-dressed, highly paid white collar job holders behave with gruesome savagery and unbelievable ruthlessness when it comes to matters related to women in their families. It is high time to change ourselves. Our education system is silent on these issues. A 'Big Push' is needed to break the circle which is grossly absent in our society. Those who want to raise their voices are silenced easily through threats and other means. India is no longer a country of religious people. We are a confused lot. We don't know what to accept and what to reject. On the one hand we want to pretend and behave like people in western countries, wear western branded cloths, walk like them, use their accents and usage in language, preferring English over mother tongue. Opting as tech-savvy, net-savvy, gadget freaks, preferring McDonald, KFC over Indian traditional food, shopping in luxurious malls whereas on the other hand we cannot give our women a safe, civilized home, workplace and society where she can live without any fear and anxiety and dream of realizing her true potential without being unduly discriminated or threatened.

BRING IN EQUALITY

Unfortunately even today, a significant section of men belonging to today's generation believe in subjugation of women. They along with their parents create havoc in women's lives. And ironically women often themselves are a part to it. There are mothers instigating their sons to beat up the wife. Till date a boy-child is treated with more care than a girl-child. Women often feel that giving birth to a boy-child will enhance their status in the society. They even look down upon women with girl child. These people believe by having a son they are a privileged class and they naturally have the right to inflict pains on the family of the girl to whom their son is married to. Many urban families at times cannot accept the equality of man and woman. They are not prepared to give women the basic safety, security and respect that needs to normal sustenance. They want the women to earn those things by serving them and pleasing them through her scarifies. If the woman fails to comply over these rotten norms she can be shown the door without assigning any reason.

Though there are laws that protect women's rights, but we are all well-aware of the efficiency of Indian's judicial system. The girl along with her family will be left to suffer for all throughout their lives. Is the only the judiciary responsible or the girl herself. There is a need for a woman to realize her own individuality. The women needs to compete for herself, which the most important factor. We often talk about social issues, there are debates. The rape victims, divorced women, domestic violence sufferers, deprived women etc are victimized, neglected, and also boycotted at times. Why? What happened to them was not by their choice! They need shoulders not of a man but at first counter of a woman. In case of domestic violence, the women need to stop at this point. But are the women actually changing. Are women working towards a change? Are they given equal rights? There is a need to set our minds. Being a real man is support, respect, love, care and show humanity towards other human being, which is your mother, sister, wife or daughter.

The whole thing could be resolved if people internalize the concept of freedom. Freedom means each person in every role respects the other's liberty and dignity. This respect is accorded both at work and at home. Unfortunately, conceptions of freedom and dignity are not yet known, leave alone internalized, in India. The idea that women should choose their life, their career, their gods,

their husbands, and their future: this idea is anathema to many Indians. True, India does have a faint tradition of freedom. As the religious leader Vivekananda said, "Liberty is the first condition of growth. Just as man must have liberty to think and speak, so he must have liberty in food, dress, and marriage, and in every other thing, so long as he does not injure others." I don't believe Vivekananda restricted his concept of freedom only to men. But his ideas (110 years ago) were too advanced even for today's India. India doesn't have even the rudimentary understanding of liberty.

MAKING CHOICES

In a transitioning society like India, where the traditional roles of women as homemakers and caretakers are deeply entrenched, the work–family balance becomes a challenge for women. Over the last decade, Indian society has witnessed a surge in the participation of women in the workforce. The growing number of women in the workforce has led to an increasing interest from academia and practitioners in the topic of work–life balance, specifically of working women. Still women choose their profession by keeping their lives simple and much of it as homely. Many a times, their parents restrict them to choose a simple and easy career, keeping in mind that she is a girl who has to get married and breed children.

The familial influence appeared as a significant factor in life choices on work and family for all women. Familial influence refers to the extent to which the immediate family plays a role in creating the values and meaning around work and life for the women. The impact of familial influence ranged from setting goals for an engineering education from childhood, making decisions related to admission in engineering colleges, or relocating from a village to a city to get access to better education, or fulfilling dreams of a mother who herself could not aspire to become a professional during her youth. Mostly, women have very strong male role models, brothers, fathers or uncles, who were engineers/technical professionals.

Recent times have shown, the women with high career ambitions also feel high responsibility towards their family members. The sick, the aged, the infirm and the destitute all depend on their immediate families and relatives to care for them. Women are fulfilling the roles which sometimes added strain, but also provide them with a feeling of contentment in fulfilling their duties. A strong sense of family obligation in extended families is much expressed in the stories of women as they feel that family was more important than a career. This also helped them in achieving balance in life.

Hence, well educated highly skilled women professionals in India have entered a rapidly growing and very demanding professionalized world in which they want to pursue their dream careers. It is time to change the tradition; family interface has been dominating by a conflict perspective focusing on negative effects such as stress¹. In order to correct the bias of the dominating focus on the negative outcomes of the family interface, several proposed theoretical concepts include positive spillover², enhancement and enrichment and facilitation (the facilitation takes place when the gains obtained in one domain are transferred to and enhance the functioning in the other domain). One way is, a person can be facilitated in the work domain is by support in the home and work domains.

However, it must be recognized that Indian society, where a woman's role was in relation to herself, her family and society is being redefined, by the new and expanded role of women with a strong occupational identity putting a lot of pressure on women's time and energy. While their self-identities primarily lie in their work, they are strongly influenced to perform the roles of

homemaker and dependent care provider given the societal expectations; this does require negotiation both at home and at work in terms of how and when work can be done.

HE FOR SHE: END GENDER INEQUALITY

UN Women Goodwill Ambassador Emma Watson at a special event for the He For She at her first campaign stated that ‘both men and women should feel free to be sensitive. Both men and women should feel free to be strong... It is time that we all perceive gender on a spectrum not as two opposing sets of ideals. If we stop defining each other by what we are not and start defining ourselves by what we are—we can all be free and this is what He For She is about’. It’s about freedom. If men takes up this mantle, their daughters, sisters and mothers can be free from prejudice but also so that their sons have permission to be vulnerable and human too reclaim those parts of themselves they abandoned and in doing so be a more true and complete version of themselves. It suggested that to try and galvanize as many men and boys as possible to be advocates for gender equality, but make sure it is tangible³

Recent research has shown that feminism has become an unpopular word, apparently the ranks of today’s independent women expressions are seen as too strong, too aggressive, isolating, anti-men and, unattractive. It is women’s right that to be paid as same as male counterparts. I think it is women’s right to be able to make decisions about her owns self. The campaign advocated the right of women to socially afford the same respect as of men, but sadly there is no one country in the world where all women can expect to receive these rights. No country in the world can yet say that they have achieved gender equality. These rights are considered as human rights. The time demands the lucky girl, to have a sheer privilege of parents who didn’t love less their daughters. The school enrolls a girl to educate her. The mentors, not to assume her to go less far as compare men because she might give birth to a child one day. These influencers are the gender equality ambassadors that make women who a women wants to be today. They may not know it, but they are the inadvertent feminists who are changing the world today. And we need more of those.

We Indians call our nation mother India and are great devotees of Mother Goddess in various manifestations. But is this devotion and respect for the country limited to only a few words or do well actually implement these values. No, we all are openly playing a double standard game with our country. One way we say mother India and the other way we are continuously destroying the valuable gift of nature, a girl child.

Latest inventions in medical field of gender detection have allowed the rate of female feticides increase in India. Still there are mother who desires to have abortion if the ultrasound test detects a girl child. But wait a moment...what can you see in the ultrasound test? Ten tiny fingers, ten tiny toes, innocent face, ready to come out and feel the beauty of nature and love of mother. When you close your eyes and you will hear a sweet voice from within, ‘Mamma’. Will you still abort your unborn girl child? No, you can’t be so cruel, at least not to someone who is a part of you.

Becoming a mother is the greatest gift of God. Treasure this gift whether you have a baby boy or baby girl. Boys and girls are like two hand human body. In the absence of the one the other is incomplete. This is the time to take an initiative to apply brake on the undesirable practice of girl discrimination. Girls must enjoy the right to birth, right to freedom, and right to education. Girls are biologically stronger than boys and must receive adequate nutrition, health care facilities and

education. They must be given opportunities to explore themselves and prove their capabilities. As mothers, they are responsible for imparting values, cultural beliefs and manners in their children. Hence, they must be educated spiritually, emotionally and intellectually.

CONCLUSION

Women are the backbone of society to bring in strength, harmony, cooperation, humanity and eventually transforming the society into a compassionate and peaceful place to live in. Every child requires nourishment and wise guidance in the early age. During this stage, a woman helps her child induce the best of good things in life. Lack of education will not only harm the individual development of a child but whole of the community and nation. Western education has enlightened our people in many ways. Shouting against injustice on woman is one of them. Our government has made primary education compulsory and free for all children. Unfortunately, the idea of equalities between a boys and girls has not yet taken the sound footing is most of our formalities. There are two ways to deal with this issue, the very first way is to find those people and give them such an extreme punishment that other should be dread from even thinking about it. And another way is that we must realize importance of girl child in our society.

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