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## INNOVATIVE TEACHING LEARNING PRACTICES IN ENGLISH

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### Abstract:

Change is creating many contradictions of this kind within higher education -between old forms and new content. It is not merely universities that are having to adapt under pressure, without clear guidelines of theory and experience, and in a relatively short space of time; similar strains are being felt by all types of post-secondary education, as the demand for vocational, technical and professional training increases. The following paper is concern with teaching learning of best practices in English.

**Key words:** Innovations, Teaching, Learning, English, Technology

### Introduction:

English language teaching is evolving all the time, particularly alongside advances in technology. But what changes have had the biggest impact on teachers in recent years? I took the question to my global PLN (personal learning network – see the third point below). Here are what appear to be the top ten innovations for teachers, in no particular order.

#### Why Aim for Unconventional ?

There are many who believe “if it’s not broke, don’t fix it.” And that’s respectable. However, even if that’s your school of thought, there are a number of reasons you may want to shake it up now and again:

Keep students on their toes: Or, encourage neuroplasticity, as the scientists would put it. Introducing new ways of learning will prevent boredom and prepare students for real-world language use. If students can predict what’ll happen day-in, day-out in the classroom, they’ll go on autopilot and won’t be challenged. Then, when they actually find themselves in a real foreign language situation, they’ll be surprised when they can’t adapt as easily.

Match students’ diverse learning styles: There may also be students in your class who just don’t vibe with the way you usually teach. Some students are visual learners, some learn by doing, etc.

Of course, you’re probably already trying to cater to all of your students, but most of us just instinctively tend towards certain styles. Finding new teaching methods will help you keep your whole classroom engaged.

Keep yourself present: Don’t forget about yourself! If you get complacent or locked in a routine, it’ll just signal students to tune out, too. Updating activities and routines is a great way to keep yourself motivated and present in the classroom.

The biggest challenge for any teacher is capturing each student’s attention, and conveying ideas effectively enough to create a lasting impression. As a teacher, to tackle this challenge effectively, you should implement innovative ideas that make the classroom experience much more lovable for your students. So here are 16 innovative ideas that will help you reinvent your teaching methods and make your classes more interesting.(1)

#### 1. Creative Teaching:

Take the help of tools to stimulate creativity. Include playful games or forms of visual exercises that will excite young minds and capture their interest. This is a time tested method to identify every young student’s creative abilities and encourage creative contributions. Bring aspects of creativity into all

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# Ichthyofaunal Diversity of Harsool Savangi Dam, District Aurangabad, (M.S.) India

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## **Ichthyofaunal Diversity of Harsool Savangi Dam, District Aurangabad, (M.S.) India**

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**Abstract:** Ichthyofaunal studies were undertaken during Jan-2008 to Dec-2008 census and commercially important fishes in the Harsool-Savangi Dam. The present paper deals with the variety and abundance of fresh water fishes in Harsool- Savangi dam of Aurangabad district (M.S) India. The results of present investigation reveal the occurrence of 15 fish species belonging to 3 orders, 4 families and 12 genera. The order cypriniformes found dominant with 11 species, followed by perciformes 3 species and siluriformes with 1 species.

**Key words:** Ichthyology % Fish diversity % Harsool-savangi dam

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### **INTRODUCTION**

Fish constitutes half of the total number of vertebrates in the world. They live in almost all conceivable aquatic habitats; 21,723 living species of fish have been recorded out of 39,900 species of vertebrates out of these 8,411 are freshwater species and 11,650 are marine India is one of the mega biodiversity countries in the world and occupies the ninth position in terms of freshwater mega biodiversity [1] India there are 2,500 species of fishes of which 930 live in freshwater and 1,570 are marine [2].

Ichthyodiversity refers to variety of fish species; depending on context and scale, it could refer to alleles or genotypes within fish population to species of life forms within a fish community and to species or life forms across aqua regimes [3]. Biodiversity is essential for stabilization of ecosystem protection of overall environmental quality for understanding intrinsic worth of all species on the earth [4]. Positive correlations between biomass production and species abundance have been recorded by various earlier workers [5]. The species diversity of an ecosystem is often related to the amount of living, non living and organic matter present.

In the field of ichthyology there is valuable contribution by many workers [6-15].

As per economic importance and scope of fish and fisheries especially in Maharashtra, but it is natural to

study the distribution and the availability of fish from freshwater reservoirs and tanks.

Present investigation was undertaken to study the fish diversity from Harsool-Savangi dam is the first effort in this direction. Various indigenous and commercial fishes of importance were found in this area. Harsool savangi dam is a man made located 9 kms, area average rainfall 665mm of Aurangabad (MS) India. Cyprinid fishes are one of the most important groups of vertebrates for man and influencing his life in various ways. The nutritive and medicinal value of fish has been recognized from ancient time to recent era.

### **MATERIALS AND METHODS**

Fishes were collected from Harsool-savangi dam (MS) India with the help of local fishermen using different type of nets namely gill nets, cast nets, dragnets and Bhar jal. Immediately photographs were taken with help of digital camera.

Fishes brought to laboratory were preserved in 10% formalin solution in separate specimen jar according to the size of species. Small fishes were directly placed in the 10% formalin solution. While large fishes were given an incision in their abdomen and preserved.

The Meristic and morphometric characters were measured and fishes were identified up to the species level, with the help of standard keys and books [16-18].

**RESULTS AND DISCUSSION**

In the present ichthyofaunal study, 15 species of 12 different genera 4 families and 3 orders were recorded from the Harsool-savangi dam in number of catches carried out during January 2008-December 2008. The members of Order Cypriniformes were dominated by 11 species followed by Perciformes 3 species and Siluriformes with one species.

15 fish species representing by 3 orders, cypriniformes was dominant with 11 species was dominant group in the assemblage composition in which *Catla-catla*, *Lebeo rohita*, *cyprinus carpio* and *Rasbora daniconius* were found most abundant. *Hypothalmichthys molitrix* and *Puntius ticto* were found in abundant form. *Puntius stigma*, *Chela bacaila*, *cirrhinus mrigala*, *Garra lamta* and *Thynnichthys sandkhol* were found in less abundant. Followed by



Table 1: The ichthyofaunal diversity of Harsool savangi dam during January 2008 - December 2008

Order	Family	Scientific name	Common name	Groups of food fish	Status
Cypriniformes	Cyprinidae	<i>Catla-catla</i>	Catla	Carps	+++
		<i>Labeo-rohita</i>	Rohu	Carps	+++
		<i>Cyprinus carpio</i>	Common carp	Carps	+++
		<i>Rasbora daniconius</i>	Black line Rasbora	Food fish	+++
		<i>Hypothalmichthys molitrix</i>	Silver carp	Food fish	++
		<i>Puntius ticto</i>	Ticto	Miscellaneous fishes	++
		<i>Puntius stigma</i>	Stigma	Miscellaneous fishes	+
		<i>Chela bacaila</i>	Chela	Food fish	+
		<i>Cirrhinus mrigala</i>	Mrigala	Carps	+
		<i>Garra lamta</i>	Gara	Food fish	+
		<i>Thynnichthys sandkhol</i>	Sandkhol carp	Food fish	+
Perciformes	Channidae	<i>Channa striatus</i>	Banded snake head	Live fish	++
		<i>Channa punctatus</i>	Spotted snake head	Live fish	+
	Cichlidae	<i>Oreochromis mossambica</i>	Tilapia	Food fish	+
Siluriformes	Clariidae	<i>Claris batrachus</i>	mangur /cat fish	Live fish	+

+++ 6 most abundant, ++ 6 abundant, + 6 less abundant

perciformes in which *Channa striatus* was found in abundant form *Channa punctatus* and *Oreochromis mossambica* were found in less abundant form and siluriformes in which one species found that is *Clarias batrachus* which was also less abundant shown in the Table 1.

Fishing operations through out year with low catches in monsoon compared to high in post monsoon and summer seasons. It is suggested that the fishery authorities should investigate and practice the proper exploitation and management of this inland fishery resources according to ecological principals. They should recommend and determine the stocking standards and reasonable introduction according to potential of fish productivity and character of this water body. Scientific fishing standard and fishing quotas are to be worked out; this will play an important role in protection of the reservoir and its biodiversity. Thus it is necessity of every individual to play an active role to achieve the goals of sustainable fishery development and handover the resources in healthy conditions to the future generations.

The work will provide future strategies for development and fish fauna conservation Harsool-savangi Dam. To maintain Ichthyodiversity has importance as it is not always possible to identify individual species critical to sustain aquatic ecosystem.

It was concluded that further studies may be done to develop techniques for fish culturing. The use of illegal methods to catch fish should be banned in this area to prevent further depletion of freshwater fish resources. The fisherman's should make aware with about fishing, scientific training and facilities made available to the fish farmers fishing of the spawn, larval fish and immature fish should be avoided and subsidies loan facility may be provided on large scales which may help in high yield of fish production in the Harsool-savangi dam.

#### ACKNOWLEDGMENTS

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## Ocimum Sanctum-The Indian holy power Medicinal plant

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**ABSTRACT:** : *Ocimum sanctum* (Tulsi) herb has been known from as the vedic period. Its extract has numerous pharmacological activities like hypoglycaemic, immunomodulatory, analgesic, anti-stress, anti-pyretic, anti-ulcerogenic, anti-inflammatory, anti-hypertensive and anti-bacterial. The active constituents of herb include volatile oil eugenol and B-caryophyllene, flavonoids and a number of other components present in fixed oil.

**Key Words:** *Ocimum sanctum*, Tulsi, Medicinal plant.

### Introduction

Plants are one of the most important sources of medicines. Among them *Ocimum* species belonging to the family Lamiaceae are very important for their therapeutic potentials. *Ocimum sanctum* Linn (Tulsi), *ocimum canassims* (dulal Tulsi), *ocimum basilicum* Linn (Ban tulsi), *Ocimum gratissimum* Linn (Ram Tulsi), *Ocimum micranthus* wild & *ocimum americanum* Linn are examples of known important species. Among them *Ocimum sanctum* has been well documented for its therapeutic potential<sup>1</sup>.

Tulsi is a fragrant bushy perennial growing up to 1.5 m in height with profusion of white blooms and slightly purple tinted foliage. This herb has been known from as early as the vedic period and is held by Hindus and is often planted around temples and used in rosaries. It is native to India, reached Western Europe in the 16<sup>th</sup> century. In several ancient systems of medicine including ayurveda, Greek, Roman, Siddha and Unani, *Ocimum sanctum* has vast number of therapeutic applications such as in cardiopathy, haemopathy, leucoderma, asthma, bronchitis, catarrhal, fever, otalgia, hepatopathy, vomiting, lumbago, hiccups, ophthalmia, gastropathy, genitourinary disorders, ringworm, verminosis and skin diseases etc.

### Medicinal properties

#### Hypoglycaemic and Hypolipidemic activity

*Ocimum sanctum* has numerous pharmacological activities. Oral preventing tonic convulsions induced by transcorneal electroshock<sup>2</sup>. The analgesic action is exerted both centrally as well as peripherally and involves interplay between various neurotransmitter systems<sup>3</sup>.

#### Immunomodulatory activity

The seed oil can modulate both humoral and cell mediated immune responsiveness and these immunomodulatory effects may be mediated by GABAergic pathways. Godhwani et al indicated an immunostimulatory capability, which may be contributory in explaining the adoptogenic action of the plant<sup>4</sup>.

#### Toxicant-stress activity

The ability of tulsi to protect against the damaging effect of various toxicants has been documented in numerous experimental studies. These studies attest to the ability of tulsi to prevent liver, kidney and brain injury by protecting against the genetic immune and cellular damage caused by pesticides, pharmaceuticals and industrial chemicals. Thus, tulsi has been shown to protect against the toxic effects of industrial chemicals such as butylparaben<sup>5</sup>.

#### Antimicrobial activity

The narrowest spectrum of antibacterial activity was observed in *Ocimum sanctum*<sup>6</sup>. The crude aqueous extract of leaf possesses some antibacterial and immunomodulatory active principles<sup>7</sup>. *Neisseria gonorrhoea* clinical isolates and WHO strains were found to be sensitive to extracts<sup>8</sup>. The ethanolic extracts from the leaves showed better activity against the  $\beta$ -lactamase producing methicillin-resistant staphylococcus aureus strains<sup>9</sup>.

#### Anti-ulcer activity

Holy basil is reported to possess potent anti-ulcerogenic as well as ulcer-healing properties<sup>10</sup> and it is due to its ability to reduce acid secretion and increase mucous secretion<sup>11</sup>. The fixed oil of tulsi was found to possess significant anti-ulcer activity against Aspirin-, Indomethacin-, alcohol-, histamine-



,reserpine,serotonin- and stress- inducedulceration in experimental animal models.

### **Antioxidant activity**

It has significant ability to scavenge highly reactive free radicals<sup>30</sup>. Antioxidant bioassay-directed extraction of the fresh leaves and stems of tulsi extract yielded: cirsilineol,cirsimaritin, isothymonin, apigenin,rosmarinic acid appreciable quantities of eugenol. Eugenol is a major component of the volatile oil, and other compounds also demonstrated good antioxidant activity<sup>13</sup>.

### **Anti-inflammatory activity**

Gas liquid chromatographic analysis of fixed oil of *Ocimum sanctum* revealed the presence of five fatty acids. The triglyceride fraction of the oil showed higher protection compared to fixed oil against carragenan-induced paw edema and acetic acid induced writhings in rats and mice, respectively<sup>14</sup>.

### **Antistress activity**

Tulsi has been used extensively throughout its history in India as a supreme anti stress solution, used for claiming the distraught and dealing with long-term irritants. In a 2000 study performed at the University of Madras, in Madras, India, researchers tested Tulsi extract on rats who were also subjected to acute levels of noise. The stress altered levels of several brain chemical makers including corticosterone were lowered after feeding the rats<sup>15</sup>.

### **Antipyretic activity**

Prevents, removes or reduces fevers Treatment for viral encephalitis, malaria and typhoid; The Imperial Malarial Conference has declared Tulsi to be a genuine remedy for malaria. Drug and nicotine withdrawal Tulsi oil is also used as ear drops in case of pain. Add fresh garlic juice after you cook Tulsi in mustard oil and then place this warm medicated oil in the ears to remove ear aches. The fresh juice of Tulsi taken with black pepper powder cures periodic fevers. In case of acute fevers, a decoction of the leaves boiled with powdered cardamom in half a liter of water and mixed with sugar and milk brings down the temperature. Reproductive System Antifertility effect – may reduce the estrogen hormone levels in females and decrease the sperm count in men.

### **Chemopreventive and radioprotective activity**

Oral treatment with the leaf extract significantly elevated the activities of cytochrome p-450, cytochrome b5, aryl hydrocarbon hydroxylase and glutathione S-transferase in the liver, all of which are important in the detoxification of carcinogens as well as mutagens. Prakash and Gupta concluded that the potential chemopreventive activity of seed oil is partly attributable to its antioxidant properties<sup>16</sup>.

### **Therapeutic Uses**

Some of the basil leaves are a rich source of key nutrients like vitamin A, vitamin C, calcium and phosphorus. The presence of vitamin A helps in strengthening eyesight. Tulsi also contains antioxidants like beta carotene that helps in preventing cell damage. Tulsi or the holy basil is famous throughout the globe for its healing and other medicinal properties. Its leaves are helpful in sharpening memory and curing fever and common cold. The leaves of the basil are also effective in reducing mouth ulcer and other infections of the mouth.

### **Conclusion**

Tulsi has been widely used for curing various ailments due to its great therapeutic potentials. A number of pharmacological effects like hypoglycaemic,immunomodulatory, antistress, anti-inflammatory, anti-ucrogenic, anti-hypertensive, CNS depressant, radio protective, antitumour and antimicrobial of *Ocimum sanctum* have been studied by various workers. These studies help in establishing a scientific basis for therapeutic uses of the plant. However much more studies are still required to explore other potential activities of this plant.

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## Physicochemical Studies of Metal Complexes and Its Biologically Active Ligands

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**ABSTRACT:** 1,3,4 Thiadiazole moieties containing Ligand and their metal complex of Cu(II), Zn(II), Cd (II) was prepared by using substituted Salicylaldehyde and 5-amino-1,3,4-thiadiazole-2-thiol derivatives. The ligand and its metal complexes were characterized and analyzed by different spectroscopic techniques (UV, <sup>1</sup>H NMR FT-IR, <sup>13</sup>C-NMR, HRMS), Magnetic Susceptibility and molar conductance, elemental analysis. The transition metal complexes show moderate to excellent antifungal activity against *A. Niger* and *F. Oxysporum* and antibacterial activity against *S. aureus* and *B. subtilis* using Kirby-Bauer disc diffusion method. The synthesis of new potential metal based drug.

Keywords: Antifungal activity; antibacterial activity; Metal Complexes; Salicylaldehyde; Thiadiazole.

**INTRODUCTION:** Schiff base is a condensation of aldehyde with primary amine important in organic synthesis and pharmacological applications<sup>1</sup>. 1,3,4 Thiadiazole is important compound because of their biological, pharmaceutical, and analytical applications<sup>2</sup>. 1,3,4 Thiadiazole acts as a ligands. Enhance biological activity by forming complexes<sup>3</sup>. The Most of the heterocyclic moieties has biological activity that depends on their orientation and their Structure<sup>4</sup>. The aldehyde are ortho-substituted with (-OH) hydroxyl group, which acts as a bidentate donor ligand for transition metal ions<sup>5</sup>. Schiff base is very important because of their structural resemblance and flexibility with naturally occurring biological and chemical substance. Imine group >C=N- (azomethine) also helps to determine the transformation and recombination in biological systems<sup>6</sup>. During last few years more intensely focus on Variable Thiadiazole derivative because of their potent biological properties like anti-inflammatory<sup>7</sup>, analgesic<sup>8</sup>, antituberculosis<sup>9</sup>, anti-hypertensive<sup>10</sup>, antimicrobial<sup>11</sup>, anticonvulsants<sup>12</sup>, antioxidant<sup>13</sup>, antifungal<sup>14</sup>, anticancer<sup>15</sup>, antidepressant<sup>16</sup>. We now report the synthesis and characterization and biological analysis of 1, 3, 4 Thiadiazole containing ligand and its Cu (II), Zn (II) and Cd (II) Metal Complexes.

### MATERIALS AND METHODS:

**Experimental:** All the chemical of analytical grade. All salts are metal nitrates i.e. Cu(NO<sub>3</sub>)<sub>2</sub>.3H<sub>2</sub>O, Zn(NO<sub>3</sub>)<sub>2</sub>.6H<sub>2</sub>O, Cd(NO<sub>3</sub>)<sub>2</sub>.4H<sub>2</sub>O were purchased from Sigma-Aldrich and used without further purification. 3,5-dichloro-2-hydroxybenzaldehyde and 5-amino-1,3,4-thiadiazole-2-thiol from Sigma-Aldrich and Alfa Aesar used without further purification. Distilled Ethanol used for synthesis of metal complexes and ligand diethyl ether (Sigma-Aldrich). IR Spectra recorded on Perkin Elmer Spectrometer in range 4000-400 cm<sup>-1</sup> KBr pellets. <sup>1</sup>H and <sup>13</sup>C NMR Spectra were recorded on BRUKER AVANCE III HD NMR 500 MHz spectrophotometer. Room Temperature magnetic moments by Guoy's method in B.M. Electronic Spectra using DMSO on Varian Carry 5000 Spectrometer. Molar Conductance measurements in dry DMSO having 1×10<sup>-3</sup> concentration on Systronics conductivity bridge at room temperature. Elemental analysis (C,H,N) were carried out by using perkin Elmer 2400 elemental analyser. Mass Spectra were recorded on Bruker IMPACT HD.

**Biological Activity:** Schiff Base and their metal complexes evaluated in vitro their antibacterial activity against two Gram-Positive bacteria, viz, *B. Subtilis*; *S.*

*aureus*, Two fungal strains *A. niger* and *F. oxysporum* by Kirby-Bauer disc diffusion method<sup>17</sup>. The fungal and bacterial strains sub-cultured on PDA and Nutrient Agar. The stock solution (1 mg mL<sup>-1</sup>) was prepared in DMSO solution. The stock solution again diluted by using sterilized water to dilution in 500 ppm. The bacteria were subculture in agar medium and disc were kept incubated for 37°C at 24 hrs. The standard antibacterial drug Miconazole and Ciprofloxacin was also screen under same condition for comparison. Activity was measure and calculated by zone of inhibition (mm) surrounding discs. The experimental value compare with standard drug value Miconazole for the Antifungal activity and Ciprofloxacin for the antibacterial activity.

**Synthesis of Schiff base Ligand:** The mixture of 1:1 3,5-dichloro-2-hydroxybenzaldehyde (1.91g,0.01mol) with 5-amino-1,3,4-thiadiazole-2-thiol (1.33g, 0.01 mol) dissolved in ethanol. Then add Few drops of glacial acetic acid was added .The resultant mixture stirred for 3-4 hrs the colored precipitate of Ligands was obtained. Then wash with Ethanol recrystallized with Ethanol and Ether then dried in air. The purity of compound was checked by TLC using Silica Gel method (Fig.1).

**Synthesis of Metal Complexes:** The metal complexes were prepared by mixing of Cu(NO<sub>3</sub>)<sub>2</sub>.3H<sub>2</sub>O,Zn(NO<sub>3</sub>)<sub>2</sub>.6H<sub>2</sub>O,Cd(NO<sub>3</sub>)<sub>2</sub>.4H<sub>2</sub>O with (30 ml) ethanolic solution of Ligand in (metal: ligand) 1:2 ratio. The resulting mixture refluxed on water bath for 5-6hr.A colored product obtain washed with ethanol, filtered, and recrystallised with ethanol (Fig.2).

**RESULTS AND DISCUSSION:** The ligand (Fig.1) and its transition metal complexes of 2,4-dichloro-6-(5-mercapto-1,3,4-thiadiazol-2-yl)imino methyl phenol are stable at room temperature in solid state.The ligand is soluble in organic solvent DMSO,DMF and metal complexes is easily soluble in DMSO.The synthesized complexes having 1:2 metal to ligand stoichiometric ratio. The physical and analytical data shown in Table 1.Spectral data shows formation of ligand and its metal complexes.

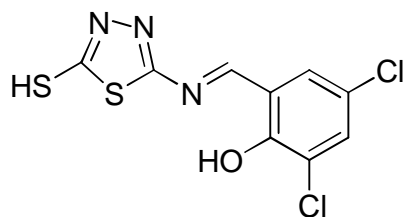


Figure1: Structure of Schiff base Ligands.

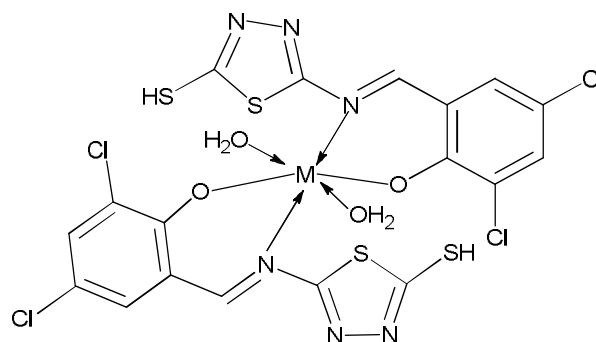


Figure 2: Proposed Structures of metal complexes M: Cu (II),Zn (II) and Cd (II).

**IR Spectra:** The IR spectra of 2, 4-dichloro-6-(5-mercapto-1, 3,4-thiadiazol-2-yl)imino methyl phenol (HL) Schiff base ligand and its complexes are listed in Table 2.The Infrared Spectra of the complexes are compared with the free ligand in order to determine the coordination sites that may be involved in a chelation. There are some important peaks in the spectra of the ligand, which is different in metal complexes helps to prove that formation of metal complexes IR spectra of 2,4-dichloro-6-(5-mercapto-1,3,4-thiadiazol-2-yl)imino methyl phenol (HL) Schiff base ligand having the most characteristic bands at 3316-3330cm<sup>-1</sup>  $\nu$ (O-H), 1638-1652 cm<sup>-1</sup>  $\nu$ (C=N, azomethine) and 1258-1272 cm<sup>-1</sup>  $\nu$ (C-O). The ligand spectra showed bands at 3314-3304 and 1340-1350 cm<sup>-1</sup> due to the deformation and stretching of the phenolic -OH<sup>18</sup> these are not present in the spectra of the complexes indicates the deprotonation of the hydroxyl group(-OH) and co-ordination through phenolic oxygen. The band 1,640–1,650 cm<sup>-1</sup> due to the azomethine (-C=N-) group of the Schiff bases have shifted to lower frequency (1,612–1,636 cm<sup>-1</sup>) after complexation, indicating the bonding of nitrogen of the azomethine group (-C=N-) to the metal ions and this can be explained by the donation of electrons from the nitrogen to the empty d-orbital of the metal ion present in the complexes<sup>19,20</sup>. The phenolic  $\lambda$ (C–O) stretching vibration that appeared at 1,260–1268 cm<sup>-1</sup> in Schiff bases shift towards higher frequency (20–32 cm<sup>-1</sup>) in the metal complexes. This shift confirms that involvement of oxygen in the C–O–M bond. The appearance of broad bands around (3,375–3,460 cm<sup>-1</sup>) in the spectra of complexes may be due to water molecules coordinated to metal in the metal complexes<sup>21</sup>. New bands appearing in the low frequency range 528–575 cm<sup>-1</sup> and 464–482 cm<sup>-1</sup> are due to  $\nu$ (M–O) and  $\nu$ (M–N), respectively. The  $\nu$ (C–S–C) at 75–758 cm<sup>-1</sup> of the Thiadiazole ring remain unchanged suggested that Thiadiazole group not coordinate to the metal ion by

neither sulphur nor nitrogen atom of Thiadiazole ring of ligand<sup>22</sup>.

**<sup>1</sup>H NMR and <sup>13</sup>C NMR Spectra:** The <sup>1</sup>H-NMR spectra of ligand were recorded in Dimethyl Sulphoxide solution using TMS as a standard (Table 3). The spectra of ligand shows singlet at δ 7.19-7.90 ppm due to aromatic proton while azomethine (-C=N-) proton resonate at singlet δ 8.90 ppm the phenolic -OH has signal singlet at δ 11.22 ppm and Thiadiazole containing (-SH) group shows singlet at δ 13.44 ppm<sup>23</sup>. <sup>13</sup>C-NMR of Ligand, peak appeared at δ158-164 ppm imine group (-C=N-), peak 187.52 ppm Due to carbon sulphur C-SH bonding in Thiadiazole. 121.96-135.53 ppm because of aromatic carbon, 158-172 ppm peak because of (Table 3) Ar-OH group<sup>24</sup>.

**Mass Spectra:** Mass Spectra of ligands shows peak at m/z 305 which is M+H peak at 100% intensity this peak support to the structure formation of ligand.

**Magnetic Susceptibility and molar conductance:** The magnetic susceptibility seen at room temperature. Synthesized metal complexes of Copper (II) is paramagnetic in nature, Zinc(II) and Cadmium (II) is Diamagnetic in nature. Molar conductance of metal complexes was observed at room temperature at 1×10<sup>-3</sup> M DMSO Solution. The studies show negligible molar conductance value in range 8-12 ohm<sup>1</sup>cm<sup>2</sup>mol<sup>-1</sup> results shows in table 4. it is observed that all metal complexes are non-electrolytic in nature<sup>25,26</sup>.

**Electronic absorption Spectra:** The electronic spectral data of the ligands and metal complexes in DMSO sol. are given in Table 4. The geometry and nature of the ligand field around the metal ion has been conclude from the electronic spectral data of metal complexes and ligand. The band appearing at 220-312 is due to transition of benzene ring of the ligand. The

other band due to free ligands 320-382 nm due to transition for phenolic -OH and azomethine moieties(-C=N-). These band shifts longer wavelength due to formation of ligand to metal complexes<sup>27,28</sup>. The spectra of the complexes display band 424-500 nm assigned to charge transfer transition from ligands to metal<sup>23</sup>. The magnetic moment value for Cu(II) complexes is 1.80 B.M is near to octahedral complex spectra shows two band at 360 nm and 560 nm shows that octahedral geometry of Cu (II) complex<sup>29</sup>. Electronic spectra of Zn (II) complexes shows band 265 nm, 370-430 nm did not show d-d transition suggest octahedral geometry<sup>30</sup>. Electronic spectra of Cd(II) shows two peak at 325 nm and 307-360 ligand to metal donation with diamagnetic suggest octahedral geometry<sup>31</sup>.

**Antimicrobial activity:** Antimicrobial activity In vitro of the ligand and their corresponding metal complexes on two gram positive bacteria *S. aureus* and *B. Subtilis* two fungi *A. niger* and *F. Oxysporum* was carried out. All of the tested compounds showed good to moderate biological activity against test microorganism. The bactericidal and fungicidal investigation data of the ligand and Metal complexes are summarized in Table 5. The investigation shows that Cu(II) shows more The bactericidal and fungicidal activity than Zn (II) and Cd (II) Complexes and Ligand hence activity of metal complexes increases due to chelation increase in delocalization of π electron on chelating ring and enhance the penetration of complexes in lipid membrane and blocks the binding site enzymes of microorganism there are other factors i.e, solubility, lipophilicity/hydrophilicity, Conductivity and M-L bond length that increases the activity of complexes<sup>32-37</sup>.

**Table 1: Analytical Data and physical properties of ligand and its metal complexes.**

Comp.	Empirical Formula	Mol. Wt.	Color	M.P (°C)	Yield (%)	Elemental Analysis/ Found (Calc.)				
						C	H	N	S	M
Ligand(HL)	C <sub>9</sub> H <sub>5</sub> Cl <sub>2</sub> N <sub>3</sub> OS <sub>2</sub>	306	Dark Yellow	118 <sub>0</sub> C	72%	35.89 (35.30)	1.69 (1.65)	13.63 (13.72)	20.21 (20.94)	--
Cu(II) Complex	C <sub>18</sub> H <sub>12</sub> Cl <sub>4</sub> CuN <sub>6</sub> O <sub>4</sub> S <sub>4</sub>	709	green	>300	69%	30.10(30.45)	1.78(1.70)	11.80(11.84)	17.98 (18.07)	8.85 (8.95)
Zn(II) Complex	C <sub>18</sub> H <sub>12</sub> Cl <sub>4</sub> ZnN <sub>6</sub> O <sub>4</sub> S <sub>4</sub>	711	Lemon Yellow	>300	71%	30.41 (30.37)	1.65(1.70)	11.75(11.81)	18.12(18.02)	9.23(9.19)
Cd(II) Complex	C <sub>18</sub> H <sub>12</sub> Cl <sub>4</sub> CdN <sub>6</sub> O <sub>4</sub> S <sub>4</sub>	758	Gray	>300	68%	28.40(28.49)	1.65 (1.59)	11.02(11.08)	17.02 (16.90)	14.35 (14.81)

**Table 2: Infrared Spectra of the Schiff base and Complexes in  $\text{Cm}^{-1}$ .**

Compound	$\nu\text{OH}/\text{H}_2\text{O}$	$\nu\text{C-O}$	$\nu\text{C=N}$	$\nu\text{M-N}$	$\nu\text{M-O}$	$\nu\text{C-S-C}$	$\nu\text{-C=N-N=C}$	$\nu\text{N-N}$
Ligand	3319	1265	1645	—	—	752	1467	1028
Cu(II) Complex	3410	1280	1633	470	569	758	1433	1028
Zn(II) Complex	3401	1290	1610	480	575	756	1436	1033
Cd(II) Complex	3460	1274	1611	482	555	755	1443	1030

**Table 3:  $^1\text{H}$  NMR Signals ( $\delta$ , ppm) and their assignments.**

Compound	$^1\text{H}$ NMR Signals ( $\delta$ , ppm) and their assignments
Ligand(HL)	11.22 (s, 1H, Ar-OH), 8.90(s, 1H, CH=N), 7.19-7.90 (s, 2H, Ar-CH), 13.44 (s, 1H, SH)

**Table 4: Electronic spectral Magnetic and Molar conductance Data.**

Compounds	Wavelength in nm	Magnetic moment $\mu_{\text{eff}}$ (BM)	Molar conductance ( $\text{ohm}^{-1} \text{cm}_2 \text{mol}^{-1}$ )
Ligands(HL)	280,372	--	6.68
$\text{C}_{18}\text{H}_{12}\text{Cl}_4\text{CuN}_6\text{O}_4\text{S}_4$	270-320,360,560	1.80	8.2
$\text{C}_{18}\text{H}_{12}\text{Cl}_4\text{ZnN}_6\text{O}_4\text{S}_4$	265,370-430	Diamagnetic	10.2
$\text{C}_{18}\text{H}_{12}\text{Cl}_4\text{CdN}_6\text{O}_4\text{S}_4$	265,307-360	Diamagnetic	12

**Table 5: Antimicrobial activity of ligand and its Metal Complexes.**

Compounds	Antibacterial Activity				Antifungal Activity			
	<i>S.aureus</i>		<i>B.subtilis</i>		<i>A.niger</i>		<i>F.oxysporum</i>	
	Diameter of inhibition Zone in mm	% Activity Index	Diameter of inhibition Zone in mm	% Activity Index	Diameter of inhibition Zone in mm	% Activity Index	Diameter of inhibition Zone in mm	% Activity Index
	500ppm	500ppm	500ppm	500ppm	500ppm	500ppm	500ppm	500ppm
Ligands(HL)	22	65	21	64	20	65	18	67
Cu	26	76	25	76	23	74	22	81
Zn	21	62	23	70	18	58	16	59
Cd	20	59	22	67	19	61	14	52
Ciprofloxacin (Standard)	34	100	33	100	--	--	---	--
Miconazole(Standard)	--	--	--	--	31	100	27	100

**CONCLUSION:** In the present work our efforts to synthesize and characterize some novel metal Complexes from conventional methods. These Ligands and Metal Complexes were characterized by physicochemical and spectral analyses. The synthesized Schiff base ligand binds metal ions in bidentate manner, with N and O donor site of azomethine-N and deprotonated phenolic-O. The antimicrobial activity data showed that Most of the metal complexes is more biologically active compared to those parent ligand against all pathogenic Bacteria and Fungi. Such studies may help to decrease emerging problems in drug resistance in health sciences over the world.

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## Impact of Digitalization on the Indian Economy and Requirement of Financial Literacy

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**Abstract** - 1<sup>st</sup> July, 2015 is a day when an initiative was being taken by our honorable Prime Minister Narendra Modi towards “making India Digital”. The campaign aimed to connect rural areas with high speed internet network and to improve the digital literacy. Indian economy is growing at a fast pace that requires the people to be financial literate to take judicious decisions. After this digitalization, the financial transactions have to be done through internet. So, Digital financial literacy is gaining importance. This paper analyses the importance of financial literacy in today’s world. The finding of the study will identify the obstacles in the execution of various programmes to make India financial literate and strategies to execute these policies effectively and efficiently.

**Keywords** - Indian economy, Digital India, Financial literacy

### *Introduction*

India is the fastest growing economy in the world. The Indian economy is the seventh largest economy in the world measured by GDP and third largest by purchasing power parity (PPP) after US and China. The Indian economy has seen a lot of changes from being self-reliant to opening its door for global trading by allowing LPG(Liberalization, Privatization and Globalization) in 1991 under the then Finance Minister Mr Manmohan Singh. And since then there is no seeing back. According to the latest Economic Survey 2015-16, the Indian economy will continue to grow more than 7 per cent in 2016-17. According to Fitch Ratings Agency, India's Gross Domestic Product (GDP) will likely grow by 7.7 per cent in FY 2016-17 and slowly accelerate to 8 per cent by FY 2018-19, driven by the gradual implementation of structural reforms, higher disposable income and improvement in economic activity. The recent steps of the Indian government have shown positive results in the growth of the GDP. According to a Goldman Sachs report released in September 2015, India could grow at a potential 8 per cent on average during from fiscal 2016 to 2020 powered by greater access to banking, technology adoption, urbanization and other structural reforms.

The 1990s also saw the entrance of technology in India and people were introduced with the use of personal computers and gradually the automation took every sector by storm and now we can see the virtual world that exists and anything can happen in it from uniting the world to initiate a war if not handled properly. But in a developing country like India the process of digital soundness has been slow and got a huge push to go digital when the demonetization shook everyone. Although there have been various initiatives taken by our Honourable Prime Minister Mr Narendra Modi such as Make In India, Swatch Bharat Abhiyan, Digital India etc. But it was during this money crunch when people started recognising the benefits of being digitally sound and how useful it is. Our government has

emphasised ongoing cashless as it will make transactions smoother and transparent and eliminates the existence of parallel economy which poses threat to the peace in our country and also helped in their financial inclusion plan and has seen that demonetization has made the accounts opened under Pradhan Mantri Jan Dhan Yojana operational. As rightly said by Rajat Gandhi on financial inclusion “No matter how many banks may open and how many boots you have on the ground, if the person does not know about the financial options that are open to him, policies, schemes and financial instruments will mean little. It is important for a person to know what to look for and only then think of the benefits that he can obtain from it.” Thus this makes the financial literacy all the more important. Financial inclusion is a quantitative term and financial literacy is more about the quality. Financial literacy focuses on the understanding one should have to how to use and manage the money efficiently and reduce the risk and save their money from environmental changes such as changes in the economy, inflation etc. With the demonetization people have also realized how important it has become for them to know about their money and what affects it the most and how they can protect. During this phase digital awareness has also gained importance and people are also willing to learn the new models available for them to manage their money in the cashless way. During this time the online payment options have helped people to survive the cash crunch they faced and have also become the driving force for digital literacy and financial literacy.

### ***Objective of The Study***

1. To understand the obstacles in the path of digitalization and the economic growth.
2. To understand how every step taken towards financial literacy is affected by various factors and how they are interrelated and interdependent.
3. To understand the requirement of financial literacy.
4. The findings of the study will identify the role of financial literacy and how these policies can be executed in the Indian economy.

### ***Research Methodology***

The study is exploratory and quantitative in nature. The secondary information is used for the analysis of the problem. Sources for the secondary data are originated from the various sources like special investigation team report, newspaper and Reserve bank of India (RBI) websites.

### ***Digitalization and GDP Growth of Indian Economy:***

Impact of digitalization on a country can be accessed on the basis of its impact on the government, on the economy and the society. We have seen a major change in every sector with the emergence of digitalization. The digitalization has created new job opportunities, have led to innovation in very sector and also led to the growth of the economy i.e. have helped in the GDP growth of the country. The government has emphasized on the digitalization as it brings transparency, better control, better job opportunities, it also provides an ease of access to the people and an upward movement in their quality of life. The study conducted by Strategy&(formerly known as Booz and Company)Shows that the increase and

effective utilization of digitalization can increase their GDP. They analyzed that constrained economies realize a 0.5% increase in GDP per capita for every 10% increase in digitalization, while advanced digital economies show a 0.62% increase in GDP per capita for every 10% digitalization increase.

India is known as the powerhouse of the software industry and is in a leading position in global sourcing market but there is still a great deal of work to be done for its Digital India campaign. Digitalization will be helpful if it can reach the maximum people and for that each and every citizen of the country should be able to easily access the facilities for which they not only need to be connected to internet but also have digital literacy to be able to use facilities provided to them.

The divide between well-connected metropolitan hubs and remote rural areas is one of the main aims of Digital India Program. For this the Central government is hopeful of achieving the complete roll-out of broadband network across 2.5 lakh village panchayats in the country by 2018 as per Bharat Net programme, which aims to provide broadband connectivity to all panchayats in the country, the panchayats will have an ecosystem that will further boost the connectivity and bridge the digital divide in the country. India has also started collaborating with various countries and business organizations (like Google, Cisco etc.) for speeding up its digitalization process by infrastructural development, increasing access to internet and also started the transformation of cities to smart city. This Campaign also got some propellant in the form of free/cheapest 4G mobile data and cheapest Wi-Fi broadband for the customers. Company Reliance Jio Infocomm Limited (RJIL) a subsidiary of Reliance Industries gave push to internet usage by introducing ground smashing data pack rates, at initiation of the project by Reliance the SIM was issued free of cost with 4GB 4G data just by submitting the photocopy of Aadhaar card and IMEI no of your 4G or LTE or VOLTE enabled handsets and after the end of March 2017 at a price lowest of all other service providers.

### ***Financial literacy in India***

According to a survey conducted by Standard & Poor's, over 76% Indian adults lack basic financial literacy and they don't understand the most basic and key financial concepts. Another survey of "Financial Literacy among Students, Young Employees and the Retired in India" conducted by IIM-A supported by CITI Foundation reveals that high financial literacy is not widespread among Indians where only less than a quarter population have adequate knowledge on financial matters. There is lack of understanding among Indians about the basic principles of money and household finance, such as compound interest, impact of inflation on rates of return and prices, and the role of diversification in investments." In some studies it is revealed that financial literacy affects the financial behavior of the people and thus through proper education they will be motivated to take the right financial decisions, get to know about the financial products and services available to them and also inculcates a habit of saving and protecting their money.

Digitalization has revolutionized the way we used the banking services and with the technological advancement and interconnectivity of the various services with the services provided by the banking sector there is need to speed up our country's literacy rate, digital literacy rate and financial literacy rates as they all together have an impact on the proper utilisation of the Digitalization.

Financial literacy along with computer literacy is a must to mobilise the savings in the economy and put forth the growth of the economy and puts the society's development on fast track. Many initiatives have started but their reach is narrowed or hampered by various factors. But to keep our pace of Digital transition with the world we also need to speed the pace of digitalization along with these basic requirements or basic knowledge or skills which can obstruct the overall transformation or held us back to achieve this goal.

#### **Obstacles in the process of Digitalization:**

1. The resistance to change people show during emergence of new technology.
2. Building trust among the people for change is difficult.
3. Lack of knowledge about its use and benefits.
4. Infrastructure requirements and their unavailability also hamper the reaching of these basic facilities to the people.
5. The basic hindrance is the lack of literacy and literacy is not just to be able to write ones name and do the signature but to have an understanding of the changes going in the technology, society and the country for their own betterment.

#### **CONCLUSION:**

The digitalization brings innovation, ease of working, new job opportunities and growth in the economy. It helps to bring transparency in the system and more transparent are the flow of funds in the economy less is the problem of tax evasion, parallel economy etc. But with all these benefits available it also makes it necessary for the people to have basic financial knowledge and a push towards the importance of the financial literacy. With the help of which they can protect their money in situations like inflation, depression, and know about different financial products and services to save it for their better future. Digitalization can also play an important role in achievement this goal as it can have a greater reach to the people. By this we can reach on a conclusion that the new technology needs to be harnessed well and for this it is not only the availability but also the knowledge to use it and get benefits from it.

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## **Economic Reforms and their consequences on Indian Economy.**

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### **Introduction :-**

Indian is the second largest growing economy in the world. India experienced drastic changes in the international trade after liberalization both in composition and direction. The reform process was initiated in India for increasing pace of economic growth and removal of poverty. The government of India introduced a series of reforms by adopting expenses, export promotion and import liberalization.

The objectives of these reforms were to free the economy from bandage and improve the trade structure. Integration of Indian economy with the world economy was necessary for the purpose. There were numbers of discussions in favor and against liberalization. It was observed that the growth in exports and imports in the period of liberalization was continuation of the earlier periods. In fact some traditional exports suffered from liberalization. It was also observed that the thrust areas of exports shifted to items like chemicals and higher value added items like. Import duty concession and concession resulted in lower cost of production. The reforms also enhanced India's competitiveness in labour and skill intensive industries. It also reduced the dependence of competitive in conditions. The liberalization policy environment brought expansion in India industry trade .It was also observed that liberalization and the structural adjustment policies, even at the cost of increasing public debt, did not achieve the desired results. The productivity growth and the level of efficiency did not improve as per the expectation on the post reform period .In spite of these arguments liberalization brought about trade diversification of products and technological improvements. It also brought about changes in the direction of international trade. It is therefore necessary to understand the trade liberalization effects on Indian economy.

### **India's contribution to the global trade after economic reforms**

Due to strict quality standard of the importing countries the exports from India got setback. The cost of production increased which also had negative effects on Indian exports. There was not strong competitiveness in India products compared to their competing countries products. All these factors resulted in decline of exports from India. In the period from 1989-90 to 2014-15 there had been decline in the export of primary products. The share also reduced to 14-96 percentage. The growth rate clearly showed down fall. Most of the advanced countries spent large amounts on subsidies for their farmer. This made it difficult for India to become competitive.

With the exception of few goods like tea, cotton, rice, coffee, oil seeds, tobacco and species, the share of exports of agriculture products had considerable share in exports in pre-

reforms period. In the post reform period it declined .The export growth of the products like tea, coffee, cashew is declining .The international quality agreement and the competition from the countries like victim ,Kenya ,Brazil, have contributed very badly to decline of exports of India's primary goods. The export growth rate of manufactured goods also showed more or less same growth rate moreover in the second half of the post liberalization period the exports of handicraft showed a negative trend. The main causes of this decline over inability to locate potential overseas ,market stiff competition from other emerging economics, low technology ,inadequate infrastructure ,lack of skilled man power ,high input cost, high transaction cost and so on.

### **Imports of India**

The imports indicate that petroleum remains the dominant item in the list of import items. With the exception of electrical and electronic goods, the share of machinery was important items in imports. Of course the recent data shows that this share is decreasing .Also data the imports of other bulk items like rubber, pulp and paper are decreasing .The imports of petroleum is increasing due to new advancements in transportation in India. Imports of capital goods are declining which shows improved industrial capacity of India.

### **Export and Import of India with different countries**

The share of exports to UK And Germany has declined .While to Saudi Arabia and Netherland has increased .With European union and japan exports have increased but with OECD countries it USA,OPEC and Latin America has increased. In case of imports, the imports from USA, Belgium, UK and Korea have decreased but from Saudi Arabia, UAE Kuwait, Qatar and Switzerland imports have increased.

### **Conclusion**

Thus it can be seen that India is able to find new markets and new products for export. But liberalization does not have positive effects on agricultural products one reason for this is the WTD agreement on agriculture relating to sanitary and phytosanitary. The other reason is the huge amounts that advanced countries spend on subsidies to the farmers in their countries .But the exports of .India manufactured goods has remarkable progress in the post liberalization period .The export towards and imports from OECD countries have declined countries and OPEC have increased.

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**STUDY OF MOBILE RETAILING ON CONSUMERS' PURCHASING EXPERIENCES**

**Abstract:**

The aim of this paper is to understand the extent to which mobile technologies have an impact on consumer behaviour, with emphasis on the drivers motivating consumers to adopt the consumer experience of mobile shopping. To achieve this goal we used a qualitative approach involving 29 consumers in the Indian market, where mobile shopping is still at an early stage. The findings shed a light on the extent to which consumers are moving from e-channels to mobile channels and take into account the effect of these technological innovations in retail settings from a cognitive standpoint, where studies are limited. The implications for researchers and practitioners are then discussed, with emphasis on retailers need to develop new mobile service competences, and integrate and synthesize physical retail settings with mobile opportunities and functionalities.

**Introduction:**

In this scenario, a huge number of “contactless technologies”, particularly automatic payment and self-checkout, are emerging as the most promising way of supporting the retail process (Lai & Chuah, 2010). These are based on proximity sensors that allow payment (or transactions in general) without entering any pin when the consumer's and retailer's devices are within a certain distance of each other. To reduce queues and waiting times, many retailers are encouraging users to adopt this system. In this framework, ubiquitous retailing is acquiring importance by involving ubiquitous access to information (Pantano, 2013). It is based on ubiquitous computing, a sort of extension of mobile computing based on portable access technologies (i.e. cameras, Location Based Service, Ubiquitous Sensor Network, etc.), always connected to a network, and linked to web-based multimedia content repositories that adapt the content provided to users' characteristics (i.e. location) (Lin et al., 2011, Pantano, 2013).

Therefore, these innovations are extending (removing) the traditional space and time boundaries of traditional retail settings (Bourlakis et al., 2009, Demirkan and Spohrer, 2014, Kourouthanassis et al., 2007, Pantano, 2014), while pushing retailers to redefine the traditional business model and traditional practices, particularly in terms of the mobile channel (Wang, Malthouse, & Krishnamurthi, 2015).

Over the last decades, some authors have started investigating the possibility of consumers buying the product before effective consumption (Xie & Shugan, 2001), in a sort of *advance purchase*, as predicted by Xie & Shugan, 2001, when this kind of purchase would be supported by gift cards or prepaid cards. The current mobile technologies allow a separation of the moment of purchase from the moment of effective consumption, when consumers buy anywhere (where equipped with an internet connection) and collect at home or at the store (pick-up boutique or collection point). Mobile retailing can be defined as a new kind of consumer purchasing experience, where the consumer buys by mobile phone and collects at home or at the store (pick-up boutique or collection point). On the other hand, e-retailing can broadly be defined as the selling of goods and services to consumers (business-to consumer, B2C) over the Internet. Our study focuses on how consumers are responding to the new mobile shopping scenario. Due to the increasing attention from scholars and practitioners on this industry, mobile consumers' behaviour seems to be a promising area.

### **Theoretical background Mobile marketing and consumer behavior:**

Mobile marketing strategies are based on how consumers access information through their own mobile phone, which firms use as a means of delivering customized messages, services, and offers (Chou et al., 2016, Kaplan, 2012). In fact, it can be successfully used to build strong relationships with consumers, engaging them with customized advertising messages and content, mobile commerce and mobile stores, etc. (Watson, McCarthy, & Rowley, 2013). It started from the usage of SMS for advertising purposes (Amirkhanpour et al., 2014, Priporas and Mylona, 2008), where text messages are sent to potential consumers about deals, promotions, special offers, etc. This particular strategy can also lead to negative consumer reactions, due to both the intimate nature of mobile devices and the inability of consumers to restrict advertising delivered to their mobile phone (Andrews et al., 2012, Nasco and Bruner, 2008). Recently, mobile marketing has expanded to the most advanced technologies such as mobile apps for smartphones (which allow consumers to easily find, compare and order products, access news on products and services, create shopping lists, locate products and stores, etc. through a user-friendly interface), and NCF Near Field Communication (NFC) (technology that provides mobile devices with wireless two-way short-range connectivity up to a maximum of 10 cm) and Quick Response codes (QR) (bi-dimensional barcode including rich information on a product that can be accessed by scanning the

code through the mobile camera), which allow consumers to pay in a “contactless way” (substituting the traditional card sweeping or insertion into the reader and the subsequent request of PIN or permission for the payment), etc. (Pantano, 2013, Ramos-de-Luna et al., 2015, Sankaridevi et al., 2015, Zhao et al., 2015), based on the sense of trust in the technology, which might further evolve over time (Lin, Wang, Wang, & Lu, 2014).

Past studies largely investigated consumer acceptance of mobile marketing by extending the traditional Technology Acceptance Model including ease of use, usefulness, attitude and behaviour (Davis, 1989) with new constructs mainly based on innovativeness (Varnali and Toker, 2010, Gao et al., 2013), risk avoidance (Gao et al., 2013, Groß, 2015, Ng, 2016), trust (Gao et al., 2015, Groß, 2015, Persaud and Azhar, 2012, Varnali and Toker, 2010, Watson et al., 2013, Zhang and Mao, 2008), hedonic value (Groß, 2015, Varnali and Toker, 2010), personal attachment (Gao et al., 2013, Varnali and Toker, 2010), perceived control (Jayawardhena, Kuckertz, Karjaluoto, & Kautonen, 2009).

Despite these considerations, prior studies also demonstrated a negative consumer attitude towards an excess of advertising messages, due to the increasing sense of control by the firm and the subsequent firms inferences in the decision making process (Watson et al., 2013). Literature shows an increase in consumers' usage of mobile devices for shopping (Blazquez, 2014, Ko et al., 2009, Pantano and Viassone, 2015). In fact, prior

authors highlighted that, as a consequence of mobile marketing and the spread of mobile technologies, there is an actual shift in the traditional paradigm of retailing based on consumer access to the retail environment to a new one based on retailers access to the consumers' environment anytime anywhere through mobile devices (Shankar, Venkatesh, Hofacker, & Naik, 2010). We can call this new paradigm mobile retailing and it is strictly linked to consumer mobile purchase behaviour anytime and anywhere.

#### **Research design:**

Taking into consideration the exploratory nature of this study (Creswell, 2009) and the need for more studies, a qualitative approach was chosen (Priporas & Mylona, 2008). This research holds an interpretivist perspective (Gray, 2013) in order to shed light on mobile consumption experience. The inductive reasoning that derives from this approach involved a comprehensive understanding of the research context and flexible structures for the research process (Saunders, Lewis, & Thornhill, 2009) in order to gain an understanding of the nature of the mobile consumer experience. This inductive logic is commonly employed for theory generation (Bryman and Bell, 2011, Saunders et al., 2009). Furthermore, this study focused on the meaning by looking at the situation in its entirety and goes beyond the investigation of causes and effects between variables (Bryman and Bell, 2011, Gummesson, 2005). The interpretivist approach supports the ontological assumption that the nature of reality is socially constructed

(Tadajewski, 2006) and focuses on understanding concepts via interpretation and contributes in the process of building theory, rather than attempting to test, explain, and predict assumptions (Harrison and Reilly, 2011, Saunders et al., 2009, Tadajewski, 2006).

#### **Data collection and analysis:**

In order to collect primary data we conducted a mix of in depth face-to-face and web-based Skype interviews (Stöttinger & Penz, 2015) with 29 Indian consumers, aged between 25 and 35 years old (older members of Generation Y) with experience of mobile retailing. The interviews took place in February–March 2015 and all the participants resided in Italy. The primary rationale in adopting this age range was the technological competence of Generation Y participants, as well as their purchasing power, since all of them were in employment. Previous studies (i.e. Gao et al., 2013) used young adult members (18–24 year old participants) as a sample. In-depth interviews reduce the “distance” between interviewer and interviewee (Johns & Lee-Ross, 1998). Literature (i.e., Palmerino, 1999, Stokes and Bergin, 2006), suggests that researchers should consider it more often since it provides more qualitative information, more depth, more representation, more efficiency, more statistics, and more value. Moreover, the choice of Italy as a referring market is justified by the fact that in this market the usage of mobile shopping is still at an early stage compared with other markets like the UK, where it is an established procedure. For instance, in the UK market for retailers such as

Amazon there are several collection points and the opening hours are related to shopping center hours (usually 10.00 a.m. to 8.00 p.m.), while in Italy the Amazon pick up points (or Amazon Locker) are included in the national post offices and limited to their opening hours (8.00 a.m.–1.00 p.m.), and limited to some locations.

Participants were recruited using a non-probability sampling method, and specifically by convenience sampling. Data was collected through an open-ended interview guide which was designed based on existing literature (Gao et al., 2013, Groß, 2015, Kang et al., 2015, Lin et al., 2014, Pantano and Viassone, 2015, Varnali and Toker, 2010) and designed to explore how participants' motivations to change their behaviour was prompted by mobile technologies and how perceptions of this new experiences emerged in the mobile shopping landscape. The interview guide consisted of five questions. The questions were designed to draw more information from personal experiences. The participants also had to respond to eight demographic questions. On average, the qualitative interviews lasted approximately 40 min. During the discussions, a professional tape recorder was used in order to record the discussion, with the authorization of the interviewee. The interviews were recorded to increase the accuracy of data collection since it permits the interviewer to be more attentive to the interviewee (Patton, 1990). It also allowed the authors to transcribe each interview completely so as to facilitate the process of content analysis. The researchers also took handwritten notes during the

sessions. After all the interviews were completed, the discussions were transcribed. The data was organized and contented analyzed using MAXQDA software for qualitative data analysis version 10.0. The data generated was systematically structured by a set of variables and categories.

### **Findings and discussion:**

The analysis of consumers' responses towards the potential of adopting advanced technologies that can change the dynamics of their purchasing yields several important insights about mobile marketing and consumer behaviour literature. In particular, we distinguish between two characteristics of the new occasion of purchase: motivations and consumer perception of the new experience.

### **Consumers' perception of the new consumption experience:**

Considering consumer experience as a consequence of the interactions between consumer, product and firm (Verhoef et al., 2009), our interviewees evaluated their experiences with the new shopping scenario on the basis of the quality of the interactions they had. In accordance with past studies (Morgan and Hunt, 1994, Richelieu and Korai, 2014, San-Martin and López-Catalán, 2013), the new experience emerged as highly satisfying since it met consumers' expectations.

E. (female, 32 years old) stated: “The first time I tried to buy through a mobile app was like a joke. McDonalds invited clients to download the new app for ordering food and collecting at

McDrive and getting a free drink. It was perfect (and the free drink was only an extra). I liked that opportunity so much that I started searching the mobile apps of my favorite brands to see if they had similar opportunities”.

As supportive statements, other respondents consider the new experience very convenient in terms of time and money. As anticipated by previous studies, convenience in terms of time saving has become one of the drivers of consumers' usage of mobile services, with emphasis on the retail industry (Kang et al., 2015). Our findings confirmed the extent to which this new purchasing modality allows consumers to save time (avoid the queues in stores) by extending convenience in terms of saving money in terms of the delivery cost. Other consumers noticed that convenience also relies on the possibility of getting personalized offers and special promotions, as well as on the automatic recognition of consumers' location that allows an adaptive response. Hence, these insights describe the concept of convenience in terms of time, money saving and customized services (such as ad hoc promotions).

Moreover, our findings specify the importance of usefulness as a driver of positive consumer attitudes towards the mobile shopping environment (Groß, 2015, Pantano, 2013, Varnali and Toker, 2010).

This statement supports the importance of context-awareness (Gao et al., 2013, Kaplan, 2012, Strom et al., 2014) for consumers. Hence they appreciated the system suggestions made on the

basis of their geographical position, without the need to input queries or upload more information. Thus, context-awareness could also be seen as fundamental for a successful mobile app. Moreover, it shows that recommendations based on geographical position are largely accepted, and do not involve any privacy concerns.

### **Conclusions:**

Our study extends the literature on attitude and usage of mobile marketing (Blazquez, 2014, Dennis et al., 2016, Gao et al., 2013, Pantano and Viassone, 2015), by exploring what motivates consumers to change their consumer experience and exploring their perception of the subsequent emerging benefits. While prior studies focused on the value of the consumer experience in mobile marketing as a beneficial situation (Andrews et al., 2012, Wang et al., 2015), our research further explains in detail how this consumer experience creates value for consumers, by saving them time, saving them money, supporting their lifestyle, offering security in transactions, and offering quality collection services, which act as drivers of the new consumer behaviours. In fact, our findings show the extent to which consumers are willing to adopt mobile shopping and change their established purchasing behaviour to avoid queues in stores. These elements are able to push consumers to change their consolidated shopping behaviour towards a new consumer experience based on the separation of buying and consumption (collection), both implying a change in consumers' experience over time, supporting Verhoef et al. (2009), and

providing insights on the separation between the moment of purchase and the moment of consumption/collection (Xie & Shugan, 2001). Although the actual usage of mobile is devoted mainly to purchase modality linked to a collection point, which could be done in any web based scenario, the preference of consumers to choose this medium for shopping pushes scholars and practitioners to reflect on consumers' motivation towards this preference. Therefore, the difference is not on the service itself but on the mobile shopping experience which result more convenient for consumers from a cognitive perspective. Thus, the possibility to live this enhanced mobile shopping experience pushes consumers to change their traditional shopping behaviour by shifting from an e-channel to a mobile one. Although the actual use of mobile technology is devoted mainly to purchase modality linked to a collection point, which could be done in any web based scenario, the preference of consumers to choose this medium for shopping pushes scholars and practitioners to reflect on the motivation behind this preference. Therefore, the difference is not in the service itself but in the mobile shopping experience, which is more convenient for consumers from a cognitive perspective. Thus, the possibility to live this enhanced mobile shopping experience pushes consumers to change their traditional shopping behaviour by shifting from an e-channel to a mobile one.

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