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PROCEEDINGS OF  
THE INTERNATIONAL CONFERENCE ON  
**RECENT DEVELOPMENTS  
IN SCIENCE,  
TECHNOLOGY, HUMANITIES  
AND MANAGEMENT**  
(ICRDSTHM-17)

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Kuala Lumpur, Malaysia

Editors  
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Rohit Khokher  
R.C. Singh



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# PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON RECENT DEVELOPMENTS IN SCIENCE, TECHNOLOGY, HUMANITIS AND MANAGEMENT (ICRDSTHM-17)



**Dr. R. C. Singh** is Professor of Physics in School of Basic Sciences and Research, Sharda University, India. Dr. Singh obtained his doctorate from Banaras Hindu University (BHU), Varanasi, India in theoretical Condensed Matter Physics. He obtained his B.Sc. (Hons.) and M.Sc. degrees also in Physics from Banaras Hindu University. He has published more than 20 research papers in peerreviewed international journals and conference proceedings. He has authored one book and co-edited one conference proceedings. His area of research interest includes study of phase transitions in molecular liquids using density-functional theory; Time-series analysis using wavelets and Biometrics. Dr. Singh is a reviewer of several international journals and has attended and organized many national and international conferences, seminars, workshops and short-term courses. Dr. Singh has successfully completed three Research Projects sponsored by the Department of Science and Technology (Govt. of India), New Delhi.

Dr. Singh has extensively travelled to many countries for delivering talks, research and promoting Indian education abroad. Some notable visits include a short tenure at The Abdus Salam International Centre for Theoretical Physics (ICTP), (Italy); Technical University of Munich (Germany); Fraunhofer Institute (Germany); University of Kaiserslautern (Germany); University of Osnabruck (Germany); Doppler Institute of Mathematical Physics, Prague (Czech Republic); Istanbul Aydin University (Turkey); University of British Columbia, Vancouver (Canada); Homerton College, Cambridge (UK) and Cambridge University (UK). While on his tours for research and academic discussions, Dr. Singh has also used these opportunities to build collaborative arrangements with Institutions abroad and his University in India.

Dr. Singh has been awarded Research Associateship by Council of Scientific and Industrial Research (CSIR), New Delhi and Short Term Visitor status in The Abdus Salam International Centre for Theoretical Physics (Italy). He was conferred the "**Bharat Vidya Shiromani Award**" by the International Institute of Education and Management, New Delhi, and the "**Pride of International Education Excellence Award**" which was presented during Indo-Nepal Friendship Summit in Kathmandu by the Intellectual People and Economic Growth Association, New Delhi. He is also recipient of the "**Star of Asia Award**" by International Business Council, New Delhi and the Global Achievers Foundation, New Delhi conferred on him "**Bharat Vibhushan Samman Puraskar**" which was presented by Hon'ble Chief Minister of Uttarakhand Shri Harish Rawat at Dehradun. Recently, National & International Compendium, New Delhi presented "**Lifetime Achievement Award**" to Dr. Singh for his contribution in the field of education.

**Dr. Singh** has established himself as a mentor, teacher, leader and an innovator. He is known for his exemplary contribution through his dedication, commitment, innovative approach and high integrity. Dr. Singh is a strategist, a methodical planner and a composed implementer and has the uncanny ability to create a team of leaders.



**Dr. Rajendra Kumar** is Professor and Head of Computer Science and Engineering Department at Vidya College of Engineering, Meerut (India). He has been **Member of Board of Studies Uttar Pradesh Technical University, Lucknow (India)**. He has nineteen years of teaching and research experience. He has also taught at Meerut Institute of Engineering & Technology, Meerut (India) for eight years. He has been guest faculty at Bundelkhand Institute of Engineering & Technology, Jhansi (India). He has published and presented several papers (in Countries like Singapore, Malaysia, UAE) in International conferences. He is author of five text books namely Theory of Automata, Languages & Computation from **McGraw Hill**, Computer Graphics from Vikas Publishing, Human Computer Interaction from Firewall Media, Information and Communication Technologies for University Science Press, and Modeling and Simulation Concept from University Science Press.

He has published two monographs from **Lambert Academic Publishing Germany** entitled Latent Fingerprint Matching, and Instruction Level Parallelism. He has guided six M. Tech. dissertations. His research area interest includes Theoretical Computer Science, E-Services, Biometric Systems, Compiler Design, Multimedia Systems, and Software Engineering.



**Mr. Rohit Khokher** is Associate Professor of Computer Science and Engineering in Vidya College of Engineering, Meerut, India. He obtained his Bachelor of Technology in Computer Science and Engineering from Uttar Pradesh Technical University, Lucknow and Master in Computer Systems Engineering from University of South Australia, Adelaide. He has submitted his Ph. D. in Computer Science & Engineering in Sharda University, India. Mr. Khokher has a rich experience of industry, academics and administration. His area of teaching and research includes data structures, database management systems, Advanced Computer Architecture, Time Series Analysis, Image Processing, Adaptive Neuro Fuzzy Inference Systems and Biometrics. He has made significant contribution in area of his research at national and international level through research publications, attending national and international seminars, conferences and delivering talks. Mr. Khokher has visited many universities and academic institutions abroad for delivering talks and academic collaborations. To name a few: National University of Singapore, Singapore, Elite School of Business and Finance, Port Louis, Mauritius, Griffith University, Gold Coast, Australia, Deakin University, Melbourne, Australia, The University of Adelaide, South Australia, University of South Australia, Australia and Al Ghurair University, Dubai, UAE. He not only professes the values of Indian culture but he himself practices many of the fundamental.



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**The proceedings of International Conference**  
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## **The Society for Research Development (SRD)**

After long deliberations, it was decided by a group of academicians and philanthropists to establish the Society for Research Development in 2015. A draft of the constitution was framed in consultation with the founder members, to enroll members and to get the Society registered. During the first meeting Dr. R C Singh was elected unanimously as President of the Society and it was decided that the Society would organize an International Conference on Science, Technology, Humanities and Business Management (ICSTHBM-16) in Bangkok, Thailand on 29-30 July 2016. The Proceedings of this Conference was published with McGraw Hill Education, India.

As next event the Society is organizing International Conference in Kuala Lumpur entitled International Conference on Recent Developments in Science, Technology, Humanities and Management (ICRDSTHM-17) on 28-29 April 2017.

The objective of the Society is Scientific, Technical, Managerial, Literary, and Educational in nature. The Society strives to advance the theory, practice, and application of Science, Technology, Social Sciences, Humanities, Education and Management and maintains a high professional standing among its members.

The basic purpose of the Society is to bring together academicians and experts from different parts of the country and abroad to exchange the knowledge and ideas at a common platform by organizing National and International Conferences, Seminars and Workshops that unite the Science, Social Sciences, Language, Emerging Technologies, Management, Financial Engineering, Humanities, Literary, Cultural, Education and topics which are not mentioned here for the empowerment of research and development. The Society promotes the original, innovative ideas for betterment of the world and seeks to propagate the results of the interdisciplinary field across research communities and to the general public.

To know more about the activities and forthcoming events of the Society, the readers are advised to visit the official home page of the Society (<http://socrd.org>).

R. C. Singh  
President

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## PREFACE

We are very pleased to introduce the proceedings of the International Conference on Recent Developments in Science, Technology, Humanities and Management (ICRDSTHM-17), held in Kuala Lumpur during 28-29 April 2017. This volume of proceedings from the conference provides an opportunity for readers to engage with a selection of refereed papers that were presented during ICRDSTHM-17.

Out of 72 papers submitted for publication, 30 have been selected in this proceeding after peer review. The conference received a huge response and the researchers from USA, Hong Kong, Nigeria, Bangladesh, Germany, Iran, Oman, India, Indonesia, Malaysia, China, Korea, Thailand, Australia, Japan, etc. submitted and presented their papers in the conference. Based on the subject matter of the selected papers, we have divided them into three parts: Part A contains the papers related to Science and Technology by national and international experts who have made valuable contributions in their fields of research; Part B comprises of the papers related to Management and Operation Research by scholars actively engaged in the study of related areas at national and international level; Part C includes papers related to Humanities by the researchers who have made significant contribution in their area of research interest.

One of the unique and valuable dimensions to the ICRDSTHM-17 was the way the conference brought educators together from around the world to discuss ways to serve learners better. All in all, the ICRDSTHM-17 was very successful. The deliberations provided a better understanding of the development in science, technology, management and humanities, making it possible for non-experts in a given area to gain insight into new areas. Also, included among the speakers were several young scientists, namely, postdocs and students, who brought new perspectives to their fields.

We would like to thank all participants for their contributions to the Conference and for their contributions to this proceeding. We take this opportunity to thank the efforts of all the reviewers whose efforts enabled us to achieve a high scientific standard in this proceeding. We also thank the members of the Technical Committee for extending their help and co-operation from time to time in organizing this conference. The success of this conference means that planning can now proceed with confidence for the next event. We would also like to thank all the members of technical committee for their support and suggestions to make this conference a huge success.

Rajendra Kumar  
Rohit Khokher  
R. C. Singh



## Keynote Address

# What Profession Expects and What Moral Behavior Tells: Ethical Intelligence as an Emerging Catalytic Converter

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### ABSTRACT

It is often opaque where ethics ends and where professionalism begins. It is not unlikely when business practitioners grapple between what the profession expects and what moral behavior dictates. Notwithstanding that, code of professional ethics is of central importance in any business sphere, the business practitioners may not be capable of coping with ethical dilemmas. This study seeks to uncover the underlying factors affecting business participants' behaviors in professional ethics, to diagnose the consequence of deficient ethics on any sort of business sphere, and to suggest ways to enhance professional ethics. An in-depth review of ethical literature was performed and the conceptology of "ethical intelligence" with its often used interpretations are discussed. This study may provoke a debate about being equipped with other ethical tools, which can be substantially beneficial to both individuals and organizations.

### Keywords

Ethics and professionalism; decision making; professional development, Ethical Intelligence

### 1. INTRODUCTION

Nowadays, living and working with consideration of values and behaviors, according to integrity and principles has become tough and tougher (Corvellec and Macheridis 2010). Business professionals do not always act accordingly, and the situations are scarcely unequivocal (McDowell 2000). Though they may attempt to do right, grey areas still do potentially exist (Vee and Skitmore 2003, Bruhn 2009). Frequent reports about an ethical misconduct in all industry sectors, especially engineering areas have provoked a heated debate in the media. So, there is a little doubt that the professionals must admit there is a need for finer professional engineering ethics (Harris Jr, Pritchard et al. 2013). There is a general consensus among scholars and practitioners that factors such as (1) violation of environmental regulations, (2) negligence, (3) bribery, (4) conflict of interest, (5) breaches of confidentiality, (6) unfair conduct, and (7) fraud are occurring unethical behaviors in the construction industry context (Collins 2011). Performing with accountability and responsibility on top of practical knowledge of personal-driven ethics and professionalism are of utmost important (Vee and Skitmore 2003, Gustafson and McCaul 2006, Smyth, Gustafsson et al. 2010, Man-Fong Ho 2011, MacDougall, Bagdasarov et al. 2015), in balancing the clients' requirements during the decision-making processes (Robinson 2007, Man-Fong Ho 2011, Ralf Müller, Walker et al. 2014). Apparently, professionals do believe that their commitments to the customers to be greater than their obligations to the society (Donaldson, Werhane et al. 1983).

A code of ethics along with some well-defined standards should be featured in reflecting values of a profession which guides individual response to the ethical dilemmas (Fisher 2008). Demonstration of such competency has often been neglected within all business industry spheres (Donakson, Werhane et al. 1983, O'Fallon and Butterfield 2005). Therefore, tacit ethical knowledge could be made clear through developing professional ethics (Eraut 1994, Lin 2010, Oladimirin and Ho 2016). Doubtfully, the professional can on all occasions bank on their own morality working with varied cultures, expectations, personal and religious beliefs as well as values. There is no collective guidance and catalytic converter to ethical dilemmas offered by either scholars or practitioners so far. Poor ethical conduct not only jeopardizes the public safety but also leads to defective and poor quality work and ultimately loss of the financial investment to irresponsible parties (Petrick and Quinn 1997, Lawrence and Weber 2008). Though organizations have adopted the code of ethics and professional conduct, the curbing of unethical conduct is difficult. It was in this context that this study undertaken to uncover the underlying factors affecting behaviors in professional ethics. This study scrutinizes what crucial barriers restrain ethical and professional behavior, and what preventative or proactive measures could be done to clear these away. To do so, the concept of "Ethical Intelligence" has been well articulated as well as incorporated as one might hope to understand.

## **2. ETHICS AND PROFESSIONALISM: WHAT**

We Know Ethics and professionalism have been well articulated as someone might hope as time goes on. However, it is often vague where professionalism begins and where ethics ends (Worthington 2015). The term "Ethics" is the science of moral, known as the branch of philosophy considering human character and conduct (Hogan 1973, Bunge 2012). In addition, ethics may also mean the canons, which govern an individual's conduct in a particular profession (Martin 2000, Adams, Tashchian et al. 2001, Williams 2010, Worthington 2015). Ethics refers to the systematic mechanism of attempt to be practical in a wide range of spheres covering individual, group, social, professional, market and global moral experiences in such way as to determine; the desired, prioritized, and worth pursuing ends; the right and most ought to set of obligations and rules; the character traits and virtuous intention to act accordingly, deserving development in life (Petrick and Quinn 1997). This definition seems to be a useful interpretation for the purpose of this paper as it is difficult to define ethics accurately and accordingly other than by the mention of its application. While earlier research endeavors on project management hardly specified the role of leadership (Lock 1998, Gido and Clements 1999), newer research studies focus on the significance of being capable of skillfully managing individuals. Recently, the researchers have been interested in ethical issues and how this concept is made manifest itself within the project management concept (Gido and Clements 2006, Lock 2007, Meredith and Mantel Jr 2011).

Ethical failures are made manifest themselves in every sphere of society encompassing entertainment, social service, business, environmental, education, military, religious, and government (Johnson 2007, Niebuhr 2013). There are shining examples of unethical companies such as Enron, WorldCom, and Tayco which can be considered as a crucial reminder to individuals and companies in business spheres to practice ethical behavior (Doran 2003, Krawiec 2003). These organizations have incurred a high cost for their moral shortcomings which resulted in downsizing and bankruptcy, damaged reputations, civil lawsuits and criminal charges, bribery, declining profits, revenue and share prices (Johnson 2007). An empirical survey in 2003 has uncovered the underlying perceptions of respondents as 93 percent of them believed that business ethics and personal ethics are mutually related to one another, however, 84 percent of respondents stated that there should be a maintained and sustained balance between both the requirements of the client and the impact on the public (Vee and Skitmore 2003).

Generally speaking, Ethics is a code of conduct (Ladd 1980, Mathews 1987, Doran 2003, Collins 2011) and unquestionably represent an ideology of "there is never a right way when it comes to doing wrong things" (Mackie 1990). The fundamentals of ethics must be morals (Brennan 1973, Jones 1986). Morality is perceived to be a behavior based on accepted moral standards (Hogan 1973, Harsanyi 1977) which are concerned about distinguishing between moral relativism and morally relevant consideration (i.e., distinguishing between right and wrong, or good and bad traits) - even though, there is a slight difference. Morality as the first order set of beliefs and practices about what is right and wrong, which impacts one's decisions and actions, while ethics refers to the second order considering a conscious reflective consideration of morality (Miller 2002, Hinman 2012). Indeed, ethics and professionalism seem to be two sides of the same coin within the business context.

There are various interpretations of professionalism concept; first, it is stated that professionalism should be limited to moral conduct; second, professionalism should not be constrained to the professions themselves, but as a behavioral construct. In addition, it has been characterized as behaving with integrity.

The project management literature has been focused on not only identifying, but also seeking for novel and better methods in order to fulfill project management's primary objectives encompassing; to meet the projects' performance target on time and within cost (Meredith and Mantel Jr 2011). Even though these particular issues are still of central importance in project management research spheres, there is a convergent evolution in terms of who competent project manager is and what is considered, of the utmost importance for project managers. There is little doubt that, incorporating ethics theories and principles can lead to a better healthy ethical environment where profession expects something and moral behavior dictates something else.

### 3. ETHICS THEORIES AND PRINCIPLES

Central to debate about the term "ethics", there are questions of how ethics and often related concepts is interpreted and what are the ethics components (Ámason and Hjörleifsson 2007). For the purpose of clarity, ethics can be seen as encompassing four components. Firstly, there are typical rules, which dictate the wrong and right conduct. Secondly, it is value-centered and preliminary concerned concerning what is most significant in life. Thirdly, there is the study of vices and virtues along with how one makes a choice to live his/her life. The last but not least component includes of obligations, autonomy and rights. The foundations of ethical analysis are tied to comprehending ethical theories and principles because they can put the spotlight on the vantage point that, which guidance can be gained and aligned along the pathway toward a decision per se. Indeed, each theory emphasizes different vantage points in order to obtain an ethically correct decision. However, the theory must be directed towards a collective set of goals. Therefore, the ethical principles can be seen as the collective set of goals that each theory tries to gain with the aim of increasing the odds of success. These collectively common goals encompass respect for justice and autonomy, beneficence, and least harm in all (Penslar 1995, Ridley 1998, Edgar 2002). Table 1 exhibits the ethical principles with a brief illustration.

**Table 1: The ethical principles with brief illustrations**

Justice	The justice ethical principle states that an ethical decision which contains justice within, it includes a consistent logical basis, so that, the decision itself is firmly supported (Penslar 1995, Ridley 1998, Edgar 2002). This means ethical theories contribute fairly to those who involved in certain actions.
Autonomy	In essence, a respect for autonomy ethical principle is an extension of the ethical principle of beneficence due to the fact that an individual who is independent usually wants to not only have control over his/her life experience but also prefers to obtain the lifestyle that he/she enjoys (Penslar 1995, Edgar 2002).
Beneficence	This principle is seemingly related to the principle of utility. It means human should make a great stride to generate the largest ratio of good over evil possible all around the world (Ridley 1998). Moreover, a shining example of "doing good" is more specifically found in the practice of medicine as it deals with human health, so that, the health of an individual must be treated by a physician (Penslar 1995, Ridley 1998, Edgar 2002).
Least Harm	This ethical principle can be highlighted by shining examples precisely. For instance, in the Hippocratic oath, physicians' first commitment is accepting the responsibility to "do no harm" to the patients since the physicians' primary duty is to provide helpful treatment rather than inflict more suffering upon the patients (Ridley 1998, Edgar 2002). This is more like to beneficence, but it regards to the situation in which neither choice is beneficial.

In addition, ethical theories are tied to the aforementioned ethical principles. These ethical theories each emphasize diverse aspects of the ethical dilemma. Indeed, these theories lead to the most ethically correct resolution considering the guidelines within the ethical theory itself. To illustrate, individuals' experiences are based upon their choice of ethical theory (Penslar 1995, Edgar 2002). Table 2 exhibits the ethical theories (Loo 2002, Loo 2004, Helgadóttir 2008, Helgadóttir 2014).

**Table 2: A Brief Illustration of the Ethical Theories.**

Deontology	This refers to a person that who will follow his or her obligations to another one or society due to the fact that upholding one’s duty is known as ethically correct (Penslar 1995, Edgar 2002). This theory highlights the fact that people should adhere to their obligations and duties when the ethical dilemma are analyzed or recognized (Rainbow 2002). This theory also appreciates those deontologists who exceed their obligations and duties, so-called “supererogation” (Penslar 1995). Since deontology does not consider the context of each circumstance, it does not expose any guidance when one is being involved in chaotic and complex situations in which there are obvious conflicting obligations (Penslar 1995, Ridley 1998).
Utilitarianism	This theory is capable of predicting the consequences of an action (Rainbow 2002). Moreover, it provides a logical and rationale argument considering each decision as well as allows an individual to apply it on a case-by-case context (Penslar 1995, Ridley 1998). There are two types of utilitarianism encompassing act and rule utilitarianism (Rainbow 2002). More specifically, the act utilitarianism adheres to the definition of this theory as described above. This means that an act utilitarianism could be preferable, and nice to someone one moment and then dislike someone the next moment because of the changeable variables, so that, the one cannot be longer beneficial to the most people at all (Penslar 1995). On the other hand, rule utilitarianism, however, considers the law and pays more attention to fairness. However, it seems that there is the possibility of conflicting rules because of it has a source of instability (Penslar 1995). But, its added value is that it has both justice and beneficence values at the same time (Penslar 1995, Ridley 1998)
Rights	Rights are known as to be ethically correct and valid. Additionally, individuals, may also bestow rights upon others if they have the capability and resources to do so (Penslar 1995). Therefore, this theory must be used in conjunction with the other theories which are robustly tied with society and its goals (Penslar 1995). All in all, the rights here set forth by a society, are protected and also given the highest priority (Rainbow 2002).
Casulist	This theory works as it compares a current ethical dilemma with examples of similar dilemmas and their related outcomes (Rainbow 2002). However, one drawback of this ethical theory is that there might not be a similar example at all. In regard to, this issue would substantially hinder the effectiveness of applying this theory (Ridley 1998).
Virtue	This theory judges a person by his/her character than by an action. It takes the individual’s morals, reputation and motivation into account when there is an unusual and irregular behavior that is perceived unethical (Rainbow 2002). In an opposite way, an individual who has a reputation for academic/scientific misconduct is more likely to be judged critically and harshly for plagiarizing due to his background in terms of his/her unethical behavior (Ridley 1998).

**4. ETHICS AND PROJECT MANAGEMENT: A RETROSPECTIVE**

Exhibit One reason why project management continues to be sustained as a profession is that it sets standards of conduct and technical expertise that almost every industry sphere can reasonably expect to be displayed by a certified and ethical project manager. However, not all countries have a fully functional mechanism to pace or act with the same standards in order to uphold them appropriately. It cannot simply be presumed, thereby, that sets of standards of conduct are uniform or that they will perform in an equal manner in all diverse settings. Even though one could assert that professionalism and ethics are higher-level values in which that are immune from cultural difference. The guide to the Project Management Body of Knowledge (PMBOK) (Guide 2001) does not precisely mention ethics in related to competency within a project management context, but the American-based Project Management Institute responsible for PMBOK has had a code of ethics (Sun 2004, Dinsmore and Cabanis-Brewin 2006). Although such codes address personal and general professional conduct in the wider context of project spheres, they don’t provide a forum considering addressing specific and precise kinds of situations encountered by project managers (Helgadottir 2014).

In regard to, the ethics training becomes relevant here and are made manifest themselves comprehensively. Accordingly, the new IPMA (International Project Management Association) competence baseline defines three

interconnected aspects of project management competencies encompassing; behavioral, contextual and technical (Helgadóttir 2008). Ethics is known as one of the behavioral competencies, although it has been discussed briefly and generally (IPMA 2006). There are various interrelated competencies, for example, the National Competence Baseline (NBC) for Scandinavia are of central importance in leadership behavior, experience applications, and method applications (Fangel 2005). However, the NCB provides a method for assessing personal integrity, but it does not address ethics at all. On the other hand, the latest edition of the APM (Association for Project Management) Body of Knowledge (UK based association) puts the spotlight on ethics in project management as a canon considering the conduct and moral principles highlighted as appropriate within project management profession context per se (Morris, Jamieson et al. 2006).

The project management has roots in engineering science (Helgadóttir 2014), thereby, it has been argued that the significance of teaching ethics is intended to be more advanced in engineering than in project management (Humphreys 1999, Goddard 2001, Bucciarelli 2008). One of the reasons for this may be that the project management is known as a much younger profession compared to engineering, thereby, it has not matured enough to reach a consensus on the ethical issues which are specific to the project management context (Wang 2002). Accordingly, some valuable endeavors toward this end have been conducted recently. More specifically, one research study indicates that each project's life cycle stage demands that the project team exhibit specific virtues encompassing intellectual, social, moral, emotional and political which are appropriately applicable to the particular activities and closure documents of that typical stage comprising system improving, controlling and evaluating, implementing, process organizing, and conceptual planning (Kloppenborg and Petrick 1999). Another endeavor has been stated as the Total Ethical-Risk Analysis method (TERA), with especial regard to multimedia considering seeking to quantify the ethical risks, pertinent to such projects with consideration of ethical risks for project users (i.e., to clarify potential harms to users, negative feedbacks from users and subsequent risks which impeded project development) (Nicolò 1996).

In regard to, an engineering graduate option in system engineering has been described that it was designed with the aim of overcoming and in the further stage eradicating some of the specialization issues considering linking between technical and ethical training (Gorman, Hertz et al. 2000). In this case, the students have been encouraged to engaged case studies considering ethical issues in the design process. Latterly, it has been recommended that this approach can be highly appropriate in terms of integrating engineering and ethics in order to fulfill the engineering's goal; "to create and to make the world better place" (Helgadóttir 2008, Helgadóttir 2014).

In another effort, the use of vignettes/ethical dilemmas and the use of Reidenbach's and Robin's (Reidenbach and Robin 1990) multidimensional ethics scale which have been developed for business ethics, has been combined together in purpose of stimulating students' debate forum about ethical issues in project management context (Loo 2002). To elaborate it precisely, the aforementioned ethics scale is applicable into five normative ethics theories encompassing deontology, justice, egoism, relativist, and utilitarianism (Loo 2002, Helgadóttir 2008, Helgadóttir 2014). Therefore, it seems certain that, there is no single right approach to ethical decision making. It means the collective behavior and approach is needed. Afterward, Loo (Loo 2004) provided Support for Reidenbach and Robin's (1990) eight-item multidimensional ethics scale in 2004 considering adding three constructs, Moral Equity, Relativism, and Contractualism. Notably, scores were independent of social desirability scores. He has indicated that this short ethics scale, comprising three construct scores and a total score, can be recommended when administration time is limited. However, this short scale does not encompass any items from the egoism and utilitarianism ethics theories reflected in the full scale. Following conclusion has been drawn by him as a recommendation baseline in which the trainers and managers should consider the use of brief vignettes in order to promote both ethical decision-making skills and ethical awareness as well as that additional vignettes should be enhanced (Loo 2002, Loo 2004).

## **5. BARRIERS TO ETHICAL BEHAVIOR**

Any enhancement in professional ethical behavior is tied to changing the minds rather than changing the law (Todres 1991). Ethical behavior is directly associated with the nature of the circumstances, thereby, as the issue and situation become more chaotic and complicated, then ethical behavior shall be tested (Thommn 1991). The major deficiencies in the professional ethics have roots in the professions' structure rather than the

professionals' character (Kultgen 1988). Any ethical failure occurs in organizations due to organizational culture deficit as well as lack of encouragement to practice ethics, and leadership failure to implement (Brien 1998, Park and Blenkinsopp 2013, Guerci, Radaelli et al. 2017). Indeed, values, which are reflected by an organization, are likely to influence its employee's intention toward ethical conduct (Jones 1991, Mason 2009, MacDougall, Bagdasarov et al. 2015, Mukler, Jordan et al. 2015).

There is empirical evidence that internal ethical control within the organization will reduce any tensions pertinent to ethical misconduct (Treviño, Weaver et al. 2006, Bowen, Pearl et al. 2007, Ferrell and Fraedrich 2015, Radtke and Widener 2016). Although the ethical code is of utmost, but it alone will not guarantee ethical behavior among professionals (Doran 2003, Vee and Skitmore 2003, Bowen, Pearl et al. 2007, Williams 2010, Ho, Ho et al. 2016). Despite ethical code, practice standards, and regulatory statutes must be incorporated (Hosmer 1995). Therefore, the existence of the code of ethics in project-related organizations, such as construction, does not seem to have decreased unethical behavior because of lacking effective ethics management such as embeddedness of ethical codes (Oladinrin and Ho 2016). So, there are factors that need to be incorporated in order to integrate codes of ethics within construction organization such as process of code internalization, identification and remover of barriers; process of enacting value; process of accountability; process of coding; and process of monitoring (Oladinrin and Ho 2016). Where money buys not just goods and services, there is a risk that money rewards skewed decision making of individuals (Bennis and Rhode 2006). Whenever construction practitioners are caught in a compromising situation, the temptation to be unethical will increasingly go up, especially at the contractor levels (Mason 2009, Adnan, Hashim et al. 2012, Oladinrin and Ho 2016). Therefore, it can be asserted that being ethically quotient can be a proper prescription as playing a role as a catalytic converter to polish ethical pollutants.

## 6. ETHICAL INTELLIGENCE: EMERGING CATALYTIC CONVERTER

Ethical decision-making competency is at a pivotal point in its history concerning wide aspects of concepts such as ethical sensitivity and perception (Weaver, Morse et al. 2008), ethical ideology (Simon 1978), ethical judgment (Ponemon 1990), and moral intensity (Frey 2000). One concept of particular interest is "ethical quotient" which has been interpreted as "ethical maturity" (Shaw and Carroll 2012). There are some constituents, which collectively shape the professionals' ethical maturity level encompassing level of morality, emotional stability that can be obtained through integrating emotional intelligence, business intelligence, and cultural intelligence. Moreover, age and experience can be seen as control variables. Emotional intelligence/quotient has manifested itself within almost the context of every industry, which revolutionized intra-organizational structure through redirecting the term "ethical maturity" to the central core of the organization per se. The ethically intelligent project manager's attributes can be highlighted as cultural intelligence (Earley and Mosakowski 2004), social intelligence (Cantor and Kihlstrom 1987), cognitive intelligence (Cote and Miners 2006), emotional intelligence (Barrett, Miguel et al. 2001), multiple intelligence (Bruald i 1996, Gardner 2006) and ethical maturity (Duffield and McCuen 2000). Figure 1 exhibits the schematic ontology of ethical intelligence.

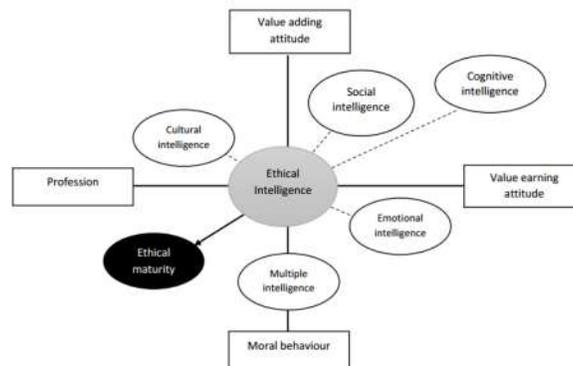


Fig 1 : The schematic ontology of ethical intelligence (Authors)

In relation to an ethically intelligent project manager, we have sketched out the schematic ontology of what are attributes of the ethically intelligent manager. However, there is a need to conceptualize the concept itself substantially.

## 7. AUTHORS' RECOMMENDATION

We tend to see the organization from two different perspectives: (1) organization level and (2) employee level. Adding value and earning value attitude can directly contribute to employee level, in which ethical intelligence in employee level can be obtained by incorporating social intelligence, emotional intelligence, cognitive intelligence, and multiple intelligence. It can be asserted that employee and organization are two sides of the same coin. In order to obtain ethical intelligence in the employee level following concepts need to be pinpointed:

- ❖ There is a need to obtain, maintain and sustain effective interpersonal relationships, which have roots in being socially intelligent. This can be gained through interpersonal skills within social sphere contexts (i.e. increasing the understandability of social interactions, roles, and norms).
- ❖ There is a need to exchange value through being emotionally intelligent in order to build mutual interactions in which the others' emotions can be understood and be functionalized.
- ❖ There is a need to be individually structuralized when it comes to personal intellectual capacity. This means providing a seed to be cognitively intelligent through processing, interpreting, and systemizing the information into systematic and rational behavior with aim of adapting effectively to our surrounding.
- ❖ There is a need to harmonize and convergence of all intelligence modes. This means differentiating intelligence into particular modalities lead to reach the level of critical problem solving within individual level. Therefore, the employee can upgrade his/her **“Nine Types of Intelligence”**.
- ❖ Employees can be easily affected by cultural diversity, which can be sustained through being culturally intelligent. To do so, there is a need to provide an awareness about cultural quotient-drive (i.e. extrinsic/intrinsic interest and self-efficacy); cultural quotient-knowledge (i.e. business, interpersonal, and socio-linguistics); cultural quotient-strategy (i.e. awareness, checking and planning); and cultural quotient-action (verbal/non-verbal action).

Another perspective is at the organization level; the question is how to get to the ethical maturity within organization, so we will have an ethically intelligent organization. As it is discussed, always there is a challenging struggle between what our professions expect from us and the situation where our moral behavior being put in a test! There are some attributes, which need to be obtained, maintained and sustained, and then the organization will be ethically intelligent.

- ❖ There is a need for a new revolutionized organization infrastructure (i.e. ethically and intellectually diffused and infused infrastructure). This constructive change needs to occur at all levels and across all functions. In order to implement, we need to ensure the current readiness level along with setting preventative/proactive measures layer by layer.
- ❖ There is a need to spread the essence of corporate social responsibility along with reconstructing Human Resource Management strategies. This approach will bridge the gap as it can provide an ethical atmosphere. However, this should not be considered as any threat to individual level and any judgment must be based on right behavior (i.e. understand the issue, weight the issue, and then express any judgmental comments).

To conclude, ethically intelligent atmosphere within both employee and organization levels will not only generate an ethically intelligent infrastructure but also ethically matured employee.

## 8. CONCLUSIONS

It is argued that ethical intelligence has made manifest itself within organizations as a catalyst for ethical maturity under certain circumstances where there is struggle between profession expectations and moral behavior perceptions. Sometimes profession expects just to keep moving forward and being result-oriented, however, on the other hand the moral behavior dictates to be ethically moral. This schizophrenic divide which lead do indecisive circumstances. In order to overcome, this study claims that being equipped with various intelligence are going to be completed and moderated by “ethical intelligence” and its often interpretations.

Although the concept of “ethical intelligence” was incorporated appropriately, but there is a substantial need to both conceptualize and in further stage operationalize the concept within various industry spheres. This study also provides some implications:

- ❖ To be an ethically intelligent is all about interactive interaction between the environment (internal/external environment in organization) and the personal functional.
- ❖ The emotional intelligence plays role as a catalytic converter through channeling ones cognitive intelligence and a perception of achieving objectives, which mirrors the sense of identity and self-assertion.
- ❖ Organization with the philosophy of earning value, adding value and exchanging value may enjoy the sense of professionalism through upwards leveling and group synergy.

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