**CHAPTER THREE**

**RESEARCH METHODOLOGY**

**3.0 INTRODUCTION**

This chapter describes and explains the methodology deployed in this study and the research methods which informed my choice of methods. This research was conducted in order to study emotional intelligence on team cohesion amongst different disciplines of students; special reference to selected institutions in India (PMCH and IIT-Dhanbad). The identification of the various needs of EI to the different disciplines of students vis-à-vis the challenges these students face while working in teams was also part of the objectives of this study. In order to gather relevant data for the study, several research designs can be used. This chapter presents the research design, methods used to gather data. This chapter discusses the research design, population, sampling techniques, data collection tools and procedure.

**3.1 RESEARCH APPROACH**

A quantitative research appraoch will be used for this study. After collecting the data, the researcher seeks to find out the relationship between the variables understudy. These variables will be measured, with instruments so that numbered data can be analysed using statatiscal procedures.

**3.2 RESEARCH DESIGN**

The research design explains where the researcher intends to carry out the research in terms of which sector of the economy and why that choice. It gives an overall view the method chosen and the reason for that choice. It is believed that is prudent to know the method used because it affects the results.

Conceptually, the research design for this research is descriptive in nature based on a study of different disciplines of stidents in the Dhanbad, Jharkhand State-India. It is descriptive because it focuses on how and who. That is in other words how it happened and those who were involved.

**3.3 STUDY AREA**

The research was carried out in Dhanbad, a city in Jharkhand state of the Republic of India. Dhanbad is known for one of the leading towns in India which produces coking coal. PMCH and IIT-Dhanbad was selected because these are one of the prestigious insititutions in that town.

**3.4 STUDY POPULATION**

Mugenda & Mugenda (2003) define population as a complete set of individuals, cases or objects with some common observable characteristics. Given this definition, the population for the proposed study comprises of different disciplines of students. Thus nursing, engineering and business students. A total population of 600 engineering students, 500 nurisng students and 200 business students were targeted for the study.

|  |  |
| --- | --- |
| Unit of analysis | Population |
| Engineering students | 550 |
| Nursing studnets | 450 |
| Business students | 300 |
| **Total** | **1,300** |

**3.5 SAMPLE SIZE**

The sample size for the present study was four hudred and ten (410) students was surveyed. Thus two hundred (200) engineering students, hundred and ninety (190) business students and hundred and ten (110) nursing students.

The total number of 1000 students will be under studied. With 250 been engineering students pursing bachelor programs while 250 also are nursing students pursing health programs. While 250 students are Business Management, the remaining 250 are those students from IIT’s. The target population for this study will be the students pursing both the undergraduate and postgraduate programmes since they are normally put in teams to accomplish task.

Out of the 5806 students forming the size of the target population, will be drawn a sample to represent the entire population since it will be more tiresome and complex to work with the totality of the whole population.

Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Unit of analysis** | **Population** | | **Disproportionate Stratefied sample** | |
| **Frequency** | **Strata fraction (%)** | **Frequency** | **Percent (%)** |
| Engineering students | 550 | 0.5 | 275 | 58.51 |
| Nursing students | 450 | 0.3 | 135 | 28.72 |
| Business students | 300 | 0.2 | 60 | 12.77 |
| **Total** | **1,300** | **100** | **470** | **100** |

**3.6 SAMPLING TECHNIQUES**

Sampling technique is the process adopted in taking any position of the population or universe as a representative of that population of that universe (Twumasi 2006).

Probability sampling technique was deployed for this study. With this method the chance of selection for each element is unknown and for some element is zero (Earl, 2002). In this study sttratified sampling technique was used. As the students were grouped into different stratum. In order to each stratum to work with easily.

**3.7 SOURCES OF DATA COLLECTION**

The data needed for a study can be collected either as secondary data or as primary data. Hussey et al. (1997), explain primary data to be data collected at source whereas secondary data is data which already exists.

Structured questionnaires was used in the primary data collection.The structured questionnaires was used to get the unbiased opinion of respondents. The data collection instrument made it very easy for respondents to give the information needed for the analysis.

Secondary data for this study are collected from literature (books, journals, articles, magazines, etc.), Internet, and databases.Books from libraries and on-line formed the substantial part of the literature review.

**3.8 METHOD OF DATA ANALYSIS**

The primary data collected was analyzed descriptively using Statistical Package for Social Science (SPSS) computer software version 20. This generated the data in the form of tables and regression analysis for easy interpretations.

**3.8 RESEARCH CONSTRAINTS**

Time was one of major limitations that confronted the researcher during this research work.

Another major limitation that confronted the researcher was finance

**3.9 PROFILE OF PMCH AND IIT (ISM) DHANBAD**

**PMCH**

In 1971, Patliputra Medical College PMCH Dhanbad was established at Ashok Raj Path Patna City. The college was initially under private administration. Currently, Patliputra Medical College & Hospital is situated in Dhanbad in Jharkhand state of India established in 1971, PMCH is a Government college. The college offers 15 different courses

The college is accredited by MCI. Patliputra Medical College & Hospital offers 15 courses across 3 streams namely Medical, Paramedical, Dental. Popular degrees offered at Patliputra Medical College & Hospital include MBBS, BDS, MD, MS (Surgery), Diploma. Besides a robust teaching pedagogy, Patliputra Medical College & Hospital is also a leader in research and innovation. Focus is given to activities beyond academics at Patliputra Medical College & Hospital, which is evident from its infrastructure, extracurricular activities and national & international collaborations. The placement at Patliputra Medical College & Hospital is varied, with recruitment options both in corporates and public sector as well as entrepreneurship.

At the Patliputra Medical College, the management is committed to providing an environment that fosters excellence and creativity in our future doctors, health professionals and medical scientists.

As a student of Patliputra Medical College, you will experience a unique camaraderie with classmates and teachers and a rewarding social life. Our practical problem based learning program will immerse you in the kinds of challenges and settings you will encounter in your future professional life.

**Shaheed Nirmal Mahto Medical College** is a medical school currently in Dhanbad, Jharkhand. It was established in 1971 under private management as Patliputra Medical College at Ashok Raj Path, Patna. The government of [Bihar](https://en.wikipedia.org/wiki/Bihar) transferred the college to [Dhanbad](https://en.wikipedia.org/wiki/Dhanbad) and attached Sadar Hospital, expanded the campus, added SSLNT hospital Purana Bazaar Dhanbad, and Central Hospital Jagjeevan Nagar Dhanbad to the school.

The medical college and hospital expanded onto 60 acres (24 ha) of land in [Saraidhela](https://en.wikipedia.org/wiki/Saraidhela" \o "Saraidhela), Dhanbad. Buildings were constructed for the medical college (functional from 1977) and hospital (functional from 2001 to 2002) with a capacity of 900 beds.

The hospital at Saraidhela campus contains all clinical departments except surgery and orthopedics which occupy the old building at Sadar.

The annual enrollment into M.B.B.S courses has been 50 since 1977.

The college has facilities for paramedical training courses in different streams. The hospital provides medical facilities to about 1000 OPD patients per day who come from adjoining districts and states.

Patliputra Medical College and Hospital was established in the year 1969. It has one of the best faculties in the State is an acknowledgement fact. This College is one of the best Government medical colleges in Jharkhand and is popularly known as Patliputra Medical College Dhanbad (PMCHCH Dhanbad). The College has the facility for paramedical training courses in different streams. It is affiliated with Vinoba Bhave University, Hazaribagh and approved by the National Medical Commission (NMC).

IIT (ISM) DHANBAD

**Indian Institute of Technology (Indian School of Mines), Dhanbad** (abbreviated **IIT (ISM), Dhanbad**) is a [public](https://en.wikipedia.org/wiki/Public_university) [technical university](https://en.wikipedia.org/wiki/Technical_university) located in [Dhanbad](https://en.wikipedia.org/wiki/Dhanbad), India. It has main campus of 218 acres in Sardar Patel Nagar area of Dhanbad and recently Jharkhand Cabinet approved 226.98 acres of land in Nirsa for its second campus, IIT (ISM) Dhanbad administration has plans to open more than 29 academic centers in this upcoming campus in Nirsa, Dhanbad. It is an [Institute of National Importance](https://en.wikipedia.org/wiki/Institute_of_National_Importance). IIT (ISM) has 18 academic departments covering [Engineering](https://en.wikipedia.org/wiki/Engineering), [Applied Sciences](https://en.wikipedia.org/wiki/Applied_Sciences), [Humanities](https://en.wikipedia.org/wiki/Humanities) and [Social Sciences](https://en.wikipedia.org/wiki/Social_Sciences) and [Management](https://en.wikipedia.org/wiki/Management) programs. It was formerly known as **Indian School of Mines, Dhanbad** before its conversion into an [Indian Institute of Technology](https://en.wikipedia.org/wiki/Indian_Institute_of_Technology) (IIT).

IIT (ISM) Dhanbad is located in the mineral-rich region of India, in the city of [Dhanbad](https://en.wikipedia.org/wiki/Dhanbad). It is the third oldest institute (after [IIT Roorkee](https://en.wikipedia.org/wiki/IIT_Roorkee), and [IIT (BHU) Varanasi](https://en.wikipedia.org/wiki/IIT_(BHU)_Varanasi)) which got converted into an IIT. It was established by [British Indian Government](https://en.wikipedia.org/wiki/British_Raj) on the lines of the [Royal School of Mines](https://en.wikipedia.org/wiki/Royal_School_of_Mines) - [London](https://en.wikipedia.org/wiki/London), and was formally inaugurated on 9 December 1926 by [Lord Irwin](https://en.wikipedia.org/wiki/Lord_Irwin), the then [Viceroy of India](https://en.wikipedia.org/wiki/Governor-General_of_India).[[6]](https://en.wikipedia.org/wiki/IIT_(ISM)_Dhanbad#cite_note-About_ISM-6) It started as an institution to impart education in mining and mineral sciences, and today, has grown into a technical institution with various academic departments. IIT (ISM) Dhanbad admits its undergraduate students through [Joint Entrance Examination (Advanced)](https://en.wikipedia.org/wiki/Joint_Entrance_Examination#JEE_Advanced), previously [IIT-JEE](https://en.wikipedia.org/wiki/IIT-JEE).

On 25 May 2016, the Union Cabinet headed by [Prime Minister Modi](https://en.wikipedia.org/wiki/Prime_Minister_Modi) gave its approval to amend the Institutes of Technology Act, 1961 for conversion of ISM Dhanbad into an [Indian Institute of Technology](https://en.wikipedia.org/wiki/Indian_Institute_of_Technology). The amendment was approved by parliament and upon presidential assent, was notified in the Gazette of India on 10 August 2016.

The [Indian National Congress](https://en.wikipedia.org/wiki/Indian_National_Congress) at its XVII Session of December 1901 passed a resolution stating that: The Indian National Congress is of opinion that a Government College of Mining Engineering be established in some suitable place in India on the models of the [Royal School of Mines](https://en.wikipedia.org/wiki/Royal_School_of_Mines) in [England](https://en.wikipedia.org/wiki/England)...

The McPherson Committee formed by [Government of British India](https://en.wikipedia.org/wiki/British_Raj), recommended the establishment of an institution for imparting education in the fields of [mining](https://en.wikipedia.org/wiki/Mining) and [geology](https://en.wikipedia.org/wiki/Geology), whose report, submitted in 1920 along with approach of Indian Mine Managers' of India in 1924, formed the main basis for establishment of the Indian School of Mines & Applied Geology at [Dhanbad](https://en.wikipedia.org/wiki/Dhanbad) on 9 December 1926. From 1926 to 1946 it was led by Prof [F. W. Sharpley](https://en.wikipedia.org/wiki/F._W._Sharpley).

The institute originally offered courses mainly in [Mining Engineering](https://en.wikipedia.org/wiki/Mining_Engineering) and Applied Geology when it opened. In 1957, the institute began offering courses in [Petroleum Engineering](https://en.wikipedia.org/wiki/Petroleum_Engineering) and Applied [Geophysics](https://en.wikipedia.org/wiki/Geophysics) and the name was changed to Indian School of Mines. Up to 1967, it was a government institute where the faculties were recruited through [Union Public Service Commission](https://en.wikipedia.org/wiki/Union_Public_Service_Commission) (UPSC).

The school was granted university status by the [University Grants Commission](https://en.wikipedia.org/wiki/University_Grants_Commission_(India)) under the [University Grants Commission Act, 1956](https://en.wikipedia.org/wiki/University_Grants_Commission_Act,_1956) in 1967. Later courses in Mining Machinery Engineering and Mineral Engineering were started in 1975 and 1976 respectively. It was among the few institutes to start courses in [Industrial Engineering](https://en.wikipedia.org/wiki/Industrial_Engineering) and Management (in 1977), to cater to the needs of industries like [metallurgy](https://en.wikipedia.org/wiki/Metallurgy), mining and [manufacturing](https://en.wikipedia.org/wiki/Manufacturing).

From 1996 to 1997 the school came directly under the financial and administrative controls of [Ministry of Human Resource Development](https://en.wikipedia.org/wiki/Ministry_of_Human_Resource_Development_(India)), [Government of India](https://en.wikipedia.org/wiki/Government_of_India) with pay scales and perks to its employees at par with that of [Indian Institutes of Technology](https://en.wikipedia.org/wiki/Indian_Institutes_of_Technology) and [Indian Institutes of Management](https://en.wikipedia.org/wiki/Indian_Institutes_of_Management). In 1997, the institute began admitting students through the IIT Joint Entrance Examination ([IIT-JEE](https://en.wikipedia.org/wiki/IIT-JEE)) conducted jointly by the IITs and ISM. In 1998 courses for [Electronics Engineering](https://en.wikipedia.org/wiki/Electronics_Engineering) and [Computer Science and Engineering](https://en.wikipedia.org/wiki/Computer_Science_and_Engineering) were introduced and in 1999, the institute started a bachelor of technology course in [Mechanical Engineering](https://en.wikipedia.org/wiki/Mechanical_Engineering).

In 2006, IIT (ISM) Dhanbad added 14 new courses, prominent among them being [Electrical Engineering](https://en.wikipedia.org/wiki/Electrical_Engineering) and a course in [Environmental Engineering](https://en.wikipedia.org/wiki/Environmental_Engineering) in the undergraduate curriculum. From 2006, IIT (ISM) Dhanbad also started offering Integrated Master of Science (Int. MSc) in Applied Physics, Applied Chemistry and Mathematics & Computing, and Integrated Master of Science and Technology (Int. MSc Tech) courses for Applied Geology and Applied Geophysics. In 2011, the institute offered a BTech programme in [Chemical Engineering](https://en.wikipedia.org/wiki/Chemical_Engineering). The institute introduced [Civil Engineering](https://en.wikipedia.org/wiki/Civil_Engineering) in 2013 and [Engineering Physics](https://en.wikipedia.org/wiki/Engineering_Physics) in 2014.

### Conversion to Indian Institute of Technology

While a proposal to upgrade ISM Dhanbad to an [Institutes of National Importance](https://en.wikipedia.org/wiki/List_of_Institutes_of_National_Importance) had been put as early as 1994 by a Government Committee, no action was taken by the Government over this proposal.

A proposal for the conversion was included in the 12th Five year plan after its passage through the [National Development Council](https://en.wikipedia.org/wiki/National_Development_Council_(India)) (NDC), on 27 December 2012, and put across the IIT Council on 7 January 2013.

The Union Finance Minister [Arun Jaitley](https://en.wikipedia.org/wiki/Arun_Jaitley" \o "Arun Jaitley), during his budget speech in [Parliament](https://en.wikipedia.org/wiki/Indian_Parliament) on 28 February 2015, proposed to upgrade ISM Dhanbad into an IIT. On 25 May 2016, the Union Cabinet approved that a bill be introduced in Parliament for converting ISM Dhanbad into an IIT. On 19 July 2016 the Institutes of Technology (Amendment) Bill, 2016 was introduced into the Lok Sabha. It was passed by the Lok Sabha without opposition on 25 July 2016. The Rajya Sabha unanimously passed the Bill on 2 August 2016. The Bill got the Presidential assent and a Gazette notification was made on 6 Sep 2016, thus officially conferring [Indian Institute of Technology](https://en.wikipedia.org/wiki/Indian_Institute_of_Technology) tag to erstwhile [Indian School of Mines, Dhanbad](https://en.wikipedia.org/wiki/Indian_School_of_Mines,_Dhanbad) .

IIT (ISM) Dhanbad campus total campus size is around 444.98 acres, and with its main campus of size approximately 218 acres located in Sardar Patel Nagar of Dhanbad and 226.98 acres of upcoming campus in Nirsa, Dhanbad. The institute has around 8101 students with 3732 undergraduate students, 1951 postgraduate students, and 2418 doctoral students.

### Academic Programs

IIT (ISM) Dhanbad offers courses in engineering, pure sciences, management and humanities with a focus on engineering. The institute has 18 departments and five inter-disciplinary centers. The Department of Mining Engineering has been accorded the status of "Center of Advanced Studies" by the [University Grants Commission](https://en.wikipedia.org/wiki/University_Grants_Commission_(India)).

Admission to the courses of BTech and Integrated BTech-MTech are done from [JEE Advanced](https://en.wikipedia.org/wiki/Joint_Entrance_Examination#JEE_Advanced) qualified students. Admission to the MTech courses are done either through the [Graduate Aptitude Test in Engineering](https://en.wikipedia.org/wiki/Graduate_Aptitude_Test_in_Engineering) (GATE) or through a special examination conducted by the institute. Admissions to the MBA program is done through the [Common Admission Test](https://en.wikipedia.org/wiki/Common_Admission_Test) (CAT). Admission to the MSc, Integrated MSc-MTech course and PhD courses are done through exams conducted by the institute.

Various courses offered by institute include:

* BTech Course (Duration – 4 Years)
* Integrated BTech-MTech Course (Duration - 5 Years)
* MTech Course (Duration - 2 years)
* MSc Course (Duration – 2 Years)
* Integrated MSc-MTech Course (Duration - 3 years)
* MBA Programme (Duration – 2 years)
* PhD
* Post-Doctoral Fellowships (PDFs)