

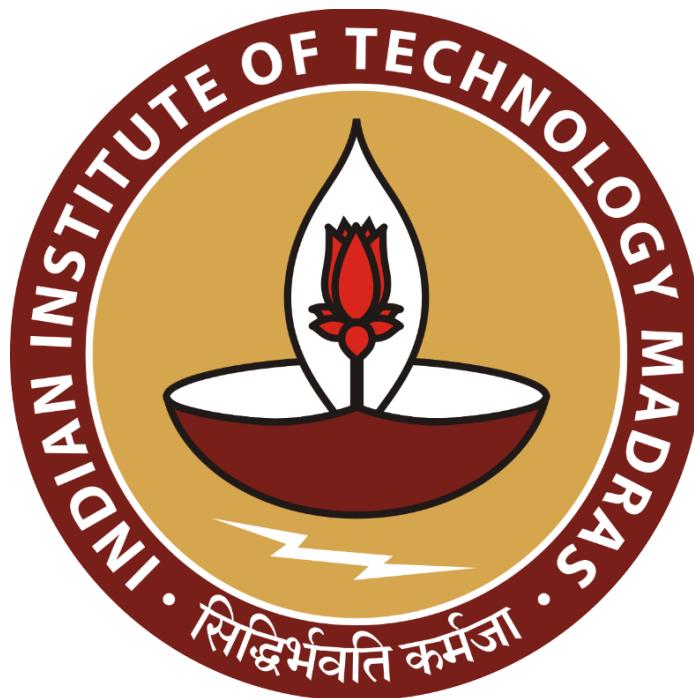
Business Intelligence for A2Z Computer Services: Turning Data Into Profits

Mid-Term Submission for the BDM Capstone Project

Submitted by

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Declaration Statement

I am working on a Project Title "**Business Intelligence for A2Z Computer Services: Turning Data Into Profits**". I extend my appreciation to **A2Z Computer Services**, for providing the necessary resources that enabled me to conduct my project.

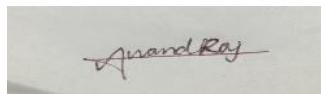
I hereby assert that the data presented and assessed in this project report is genuine and precise to the utmost extent of my knowledge and capabilities. The data has been gathered through primary sources and carefully analysed to assure its reliability.

Additionally, I affirm that all procedures employed for the purpose of data collection and analysis have been duly explained in this report. The outcomes and inferences derived from the data are an accurate depiction of the findings acquired through thorough analytical procedures.

I am dedicated to adhering to the information of academic honesty and integrity, and I am receptive to any additional examination or validation of the data contained in this project report.

I understand that the execution of this project is intended for individual completion and is not to be undertaken collectively. I thus affirm that I am not engaged in any form of collaboration with other individuals, and that all the work undertaken has been solely conducted by me. In the event that plagiarism is detected in the report at any stage of the project's completion, I am fully aware and prepared to accept disciplinary measures imposed by the relevant authority.

I agree that all the recommendations are business-specific and limited to this project exclusively, and cannot be utilized for any other purpose with an IIT Madras tag. I understand that IIT Madras does not endorse this.



Signature of Candidate:

Name: Anand Raj

Date: 25 June 2025

1. Executive Summary and Title

A2Z Computer Services is a B2C business that provides a dual portfolio of services: (1) training programs in basic computer literacy such as CCC, ADCA, MS Excel, and MS Office, and (2) technical services including data recovery, system troubleshooting, software installation, and other common service centre facilities. While the organization has maintained steady growth in its online training enrollments and technical service clientele, a significant problem persists in offline training classes—particularly the lack of female student enrollment around the institute. Despite interest from a few female learners, challenges such as the absence of female faculty, limited awareness in distant areas, and expectations of quick part-time job placements have restricted participation.

Data collected from the owner included two primary sources: student training records (enrollment date, course type, address, and contact details) and customer service logs (customer name, service type, and service cost). The dataset allowed insights into patterns of course enrollment, geographical spread of students, and demand for various technical services. Descriptive statistics and survey based feedback highlighted that online female participation is notably higher compared to offline enrollment.

The analysis was conducted primarily using Excel to examine trends and patterns. Courses with maximum enrollment, frequently availed services, and feedback trends were identified through student's feedback and survey. Preliminary results suggest opportunities in introducing female instructors, targeted awareness campaigns in underrepresented areas, and short-term job-linked programs. These initiatives could enhance offline female participation while strengthening overall customer satisfaction and service uptake.

2. Proof of Data Originality

i. Letter from the business



To

The Head of Department

Indian Institute of technology, Madras

Chennai, Tamil Nadu

Subject : Proof of Data Provision for Business Data Management Project

Dear Sir,

This is to certify that A2Z Computer Services, located at Village and Post Bibipur, Bakshi Ka Talab, Lucknow, has provided data to Mr. Anand Raj for his Business Data Management Project at IIT Madras. The data covers two categories:

Technical Services (from 2021 to 2025) and Coaching Classes (from 2023 to 2025), and has been sourced directly from the business owner, Mr. Utkarsh Singh.

The dataset includes information such as customer names, student names, contact details, addresses, grades, types of services availed, amounts paid, and other relevant fields.

We believe this data will be instrumental in helping Mr. Anand Raj successfully complete his project and meet his academic objectives. Should your institution require any further information for verification, please feel free to contact us.

Thank you

Sincerely

Utkarsh Singh

Owner, A2Z Computer Services

+91 6306249009

Utkarsh Singh



Village and Post Bibipur Bakshi ka Talab
Lucknow



ii. Video interaction with founder and images of the business



Link: [video Interaction](#)



3. Metadata

1. Metadata

i. Data origins, variables collected, their importance and relevance to the problem statement

The collected variables—name, contact, course_enrolled, grade_in_course, date_of_joining, and address_of_students—offer valuable insights into student demographics, academic performance, course preferences, and locality-based participation. These variables are essential in identifying enrolment trends, performance outcomes, and the reach of digital literacy initiatives. The address variable specifically helps highlight locality-based challenges and awareness gaps. Additionally, by analysing gender-related dropout trends, it's evident that the absence of female faculty impacts enrolment of female students due to security concerns and social constraints. Understanding these factors is critical to addressing the key problems faced by A2Z Computer Services and improving outreach and inclusivity.

Example of the data format for Coaching Classes:

Column	Data Type	Description	Example	Missing Value (%)
Name	String	Name of the Student	Aarush	0%
Gender	String	Gender(Male/Female)	Male	0%
Course	String	Type of course	ADCA	0%
DOJ	Date	Date of Joining	02/04/2025	0%
Qualification	String	Qualification of student	10+2	0%
Mode	String	Mode of Study (Online/Offline)	Online	0%
Grade	String	Grade Obtained in Finale Exam	A	0%
Location	String	Address of the student	Lucknow	0%

ii. Justification to variables chosen and metadata

The chosen variables directly relate to the problem by highlighting patterns in student enrolment, locality distribution, and gender participation. Address data helps identify areas with low awareness, while trends in female enrolment reflect the impact of lacking female faculty. This linkage supports targeted solutions to improve outreach and inclusivity.

2. Descriptive Statistics

i. Dataset Overview

- **Total Number of Tech Services :11**
- **Total Courses Offered: 5**
- **Time Frame for Tech Services: February 2021 to September 2025**
- **Time Frame for Coaching Classes: 2024 to 2025**
- **Total Services taken(Transactions): 80+**
- **Total Students Enrolled (Online): 16**
- **Total Students Enrolled (Offline): 10**
- **Total Revenue Through Coaching Classes: ₹1,28,000**
- **Total Revenue Through tech services: 61,619+**
- **Average Transaction Value of tech service: ₹ 551.60**
- **Average Transaction Value of Coaching Classes: 4923.08**

ii. Central Tendency and Distribution

	Coaching fees	Service Charge
Mean	4923.08	551.67
Minimum	3500	200
25%	3500	500
50%	3500	500
75%	7200	800
Maximum	7200	800
Std. Dev	1835.71	181.79

5. Detailed Explanation of Analysis Procedure/Method

i. Data cleaning and pre-processing

In the data cleaning process, we have removed all the records of the customer whose only services and service amount were mentioned by the owner and nothing else were mentioned like date or address in the records which was creating noise in the dataset and analysis, and

also when the a2z computer services started, in the beginning, owner recorded very few records of the customer in some random manner but in some copy or register which is still missing.

ii. Category Classification and Clustering

Since the owner categorized all the technical services and all common service centre (CSC) services into single category, and for analysis it was difficult to identify services for analysis.

A2Z Computer Services – Service Type Clustering Table:

Primary Service Type	Sub-Category	Example Services	Target Customers	Key Performance Metrics	Business Value / Insight
1. CSC / Digital Facilitation Services	Government Form Processing	PAN Card Application, Voter ID, Income Certificate, etc.	General Public	Number of forms processed, turnaround time	High foot traffic; improves brand visibility locally.
	Online Applications & Uploads	Online Form Filling, Document Uploading	General Public	Processing success rate	Repeat customers during govt. deadlines.
2. Technical Services	System Repair & Troubleshooting	Hardware Repair, System Reboot, Virus Removal	Individuals, Small Businesses	Number of repairs, issue resolution rate	High profit per service; builds technical credibility.
	Software / OS Installations	OS Installation, Software Setup, Driver Configuration	Individuals, Offices	Installation time, repeat calls	Upselling potential (antivirus, optimization services).
3. Coaching / Computer Education	Foundational Courses	CCC, Typing, MS Office	Students, Job Seekers	Enrollment count, pass rate	Essential entry-level demand; steady income flow.
	Advanced / Professional Courses	ADCA, O-Level, Excel, Graphic Design (if offered)	Students, Professionals	Certification rate, course completion	Higher revenue per student; long-term engagement.

iii. Geo Mapping of the customers and students

Since there are some services like system troubleshooting which were done online only, there was no interaction of owner and the customer in offline so owner doesn't mention their address record in the dataset and the problem arrived was that the location mentioned in

the dataset for the customers or the students not the exact address it was the area or the district or the city so it was difficult to conclude about the geo location of the customers or the students but easy to track the range.

iv. Growth of individual Tech Service from 2021-2024

1. For Tech Services: -

The tables below summarize all technical services and courses provided to customers and students since the establishment (2021) of the business till 2024. They illustrate the monthly growth trends of these offerings over the years, providing insights into when and how demand has increased. This analysis supports strategic planning for targeted marketing and helps ensure that future demand is effectively met.

Months	Printer Setup	Laptop Repair	OS Installation	RAM Upgrade	Data Recovery	Virus Removal
Jan,1	2	1	1		2	
Feb,2			2	1	2	
Mar,3	2	1			1	1
Apr,4	1			1	1	
May,5	1	1	3	1	2	
Jun,6		1	1		1	1
Jul,7	1	2		1		1
Aug,8					3	
Sep,9	1	2	1		1	1
Oct,10		1	1	1		
Nov,11	1	2	2	1	1	
Dec,12	1	1		1	2	
total	10	12	11	7	16	4

The above data shows steady demand across services with Data Recovery (16 cases) leading, followed by Laptop Repair (12) and OS Installation (11). Printer Setup also shows consistent need (10). Virus Removal remains low (4). Growth trends suggest prioritizing promotion of high-demand services while improving awareness of underutilized ones.

2. For Coaching Classes: -Enrolment of students in offline and online mode in coaching classes:

Mode	Gender	total students
Online	Male	6
Online	Female	10
Offline	Female	0
Offline	Male	10

From the above table, it is clear that there are no girl students enrolled in the offline mode, and most of the technical services are Data recovery and Laptop Repairing while in the course enrolment there are only two courses only in which students are currently enrolled either online or offline.

6. Explanation of Analysis Procedure

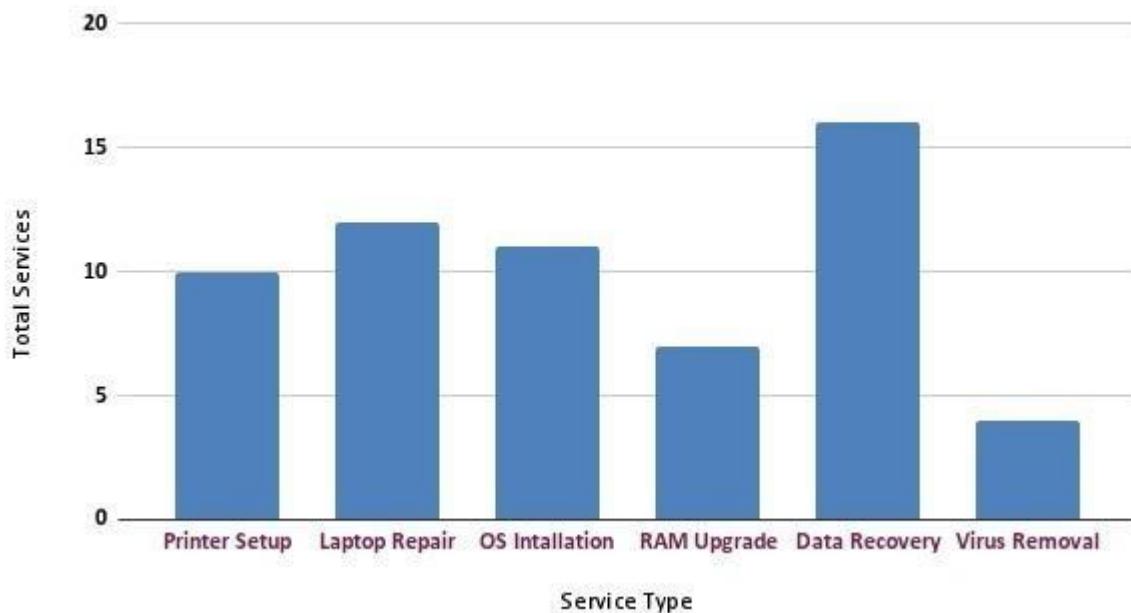
Aim: To understand the monthly performance of the variables across the year for both categories.

Justification: In this analysis, there is analysis on Aspirational Data, Trend Analysis of patterns of both the datasets, and since there was not much data available for the technical services so monthly performance of variables across the year so there is monthly analysis but for the whole time from when the a2z was established. It gives the clear idea which services the owner should advertise more in targeted area and which services should be avoided by the owner. And this is also valid on the coaching classes.

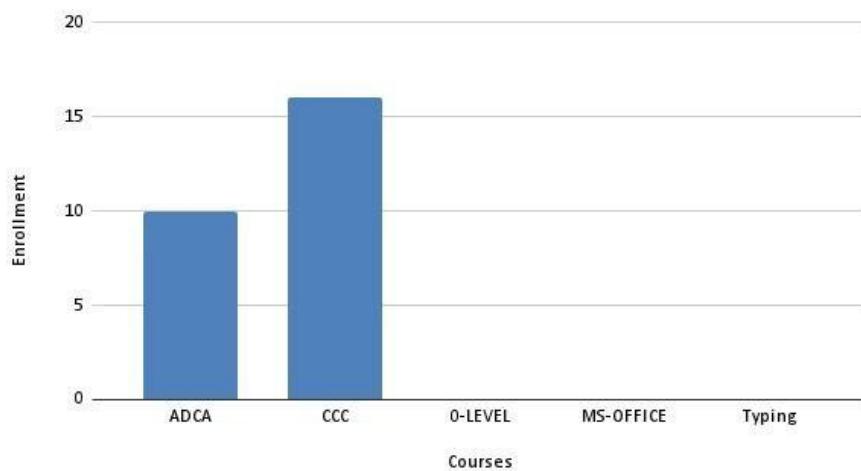
7. Results and findings

7.1 Trends and patterns

Total Services vs. Service Type (2021-2025)



Enrollment vs. Courses

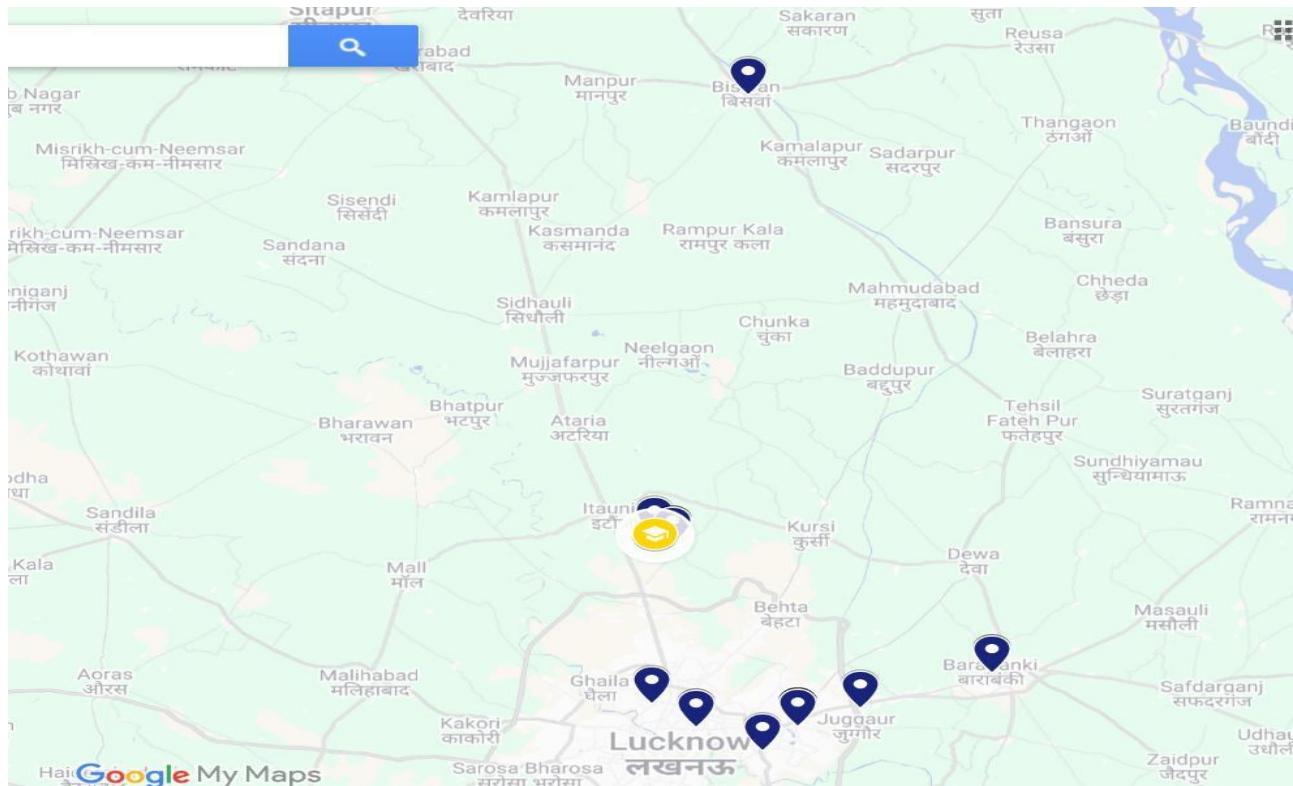


As we can clearly see from the above conclusions that there are only two courses out of five courses offered by the business are running and also there are only five technical services are running currently out of the 11 services offered and that to mostly are far from the place.

7.2 Geo-mapping:

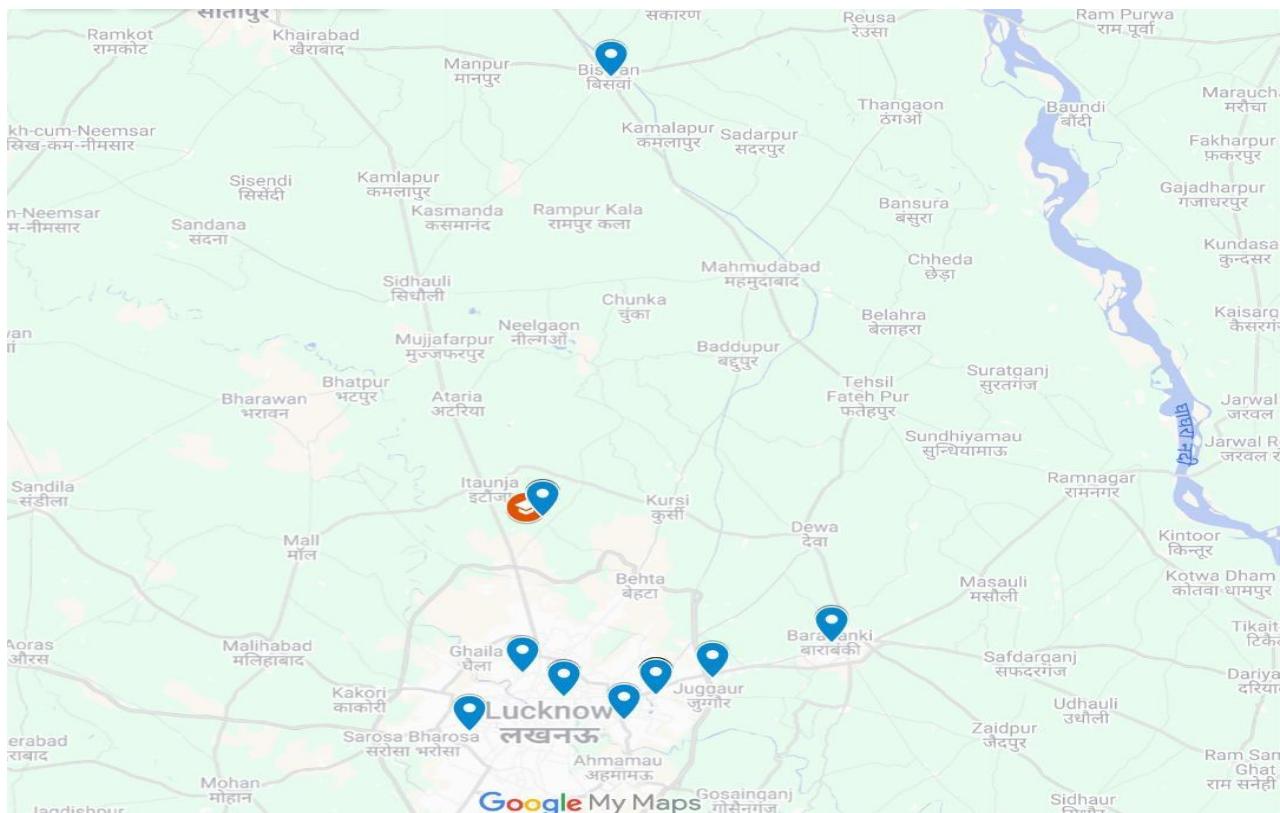
i. Geo Mapping of Students (A2Z training Classes)

The geo-mapping of A2Z Computer Services' students' highlights that most enrolled learners reside far from the institute, with very few located nearby. This indicates limited local participation and emphasizes the need for targeted outreach, awareness campaigns, and localized strategies to attract students from surrounding areas.



ii. Geo Mapping of customers of Tech. Services

The customer geo-mapping indicates that most technical service users are located in and around Lucknow, with some clients spread across nearby towns such as Barabanki and Biswan. This shows A2Z Computer Services' wider regional reach in technical support, though its strongest customer base remains concentrated near the city.



7.3 Preliminary Insights:

1. **Lack of Female Faculty:** The absence of female instructors discourages potential female students from joining offline training, despite their interest, leading to a gender gap in classroom enrollments.
2. **Offline vs. Online Enrollment:** All female students enrolled so far have chosen online mode, highlighting hesitation for in-person attendance and reinforcing the need for female faculty recruitment.
3. **Geographical Awareness Gap:** Most students and customers are located far from the institute, suggesting limited awareness and visibility among nearby communities.
4. **Customer Base Concentration:** Technical service customers are concentrated in and around Lucknow, but fewer from the immediate vicinity of the institute, signalling a need for targeted outreach in closer localities.
5. **High-Demand Courses:** CCC and ADCA batches show consistently strong growth and higher enrollments, making them strategic courses to continue and expand further.
6. **Job-Oriented Expectations:** Student feedback indicates interest in short-term and part-time job opportunities, which could be leveraged to increase enrollment and satisfaction.