

Project Coversheet

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Project Title (Example – Week1, Week2, Week3, Week 4)	Week 1: Project: Data Analysis for Business Insights

Instructions:

Students must download this cover sheet, use it as the first page of their project, and then save the entire document as a PDF before submission.

Project Guidelines and Rules:

1. Formatting and Submission:

- Format: Use a readable font (e.g., Arial/Times New Roman), size 12, 1.5 line spacing.
- Title: Include Week and Title (Example - Week 1: Travel Ease Case Study.)
- File Format: Submit as PDF or Word file
- Page Limit: 4–5 pages, including the title and references.

2. Answer Requirements:

- Word Count: Each answer should be within 100–150 words; Maximum 800–1,200 words.
- Clarity: Write concise, structured answers with key points.
- Tone: Use formal, professional language.

3. Content Rules:

- Answer all questions thoroughly, referencing case study concepts.
- Use examples where possible (e.g., risk assessment techniques).
- Break complex answers into bullet points or lists.

4. Plagiarism Policy:

- Submit original work; no copy-pasting.
- Cite external material in a consistent format (e.g., APA, MLA).

5. Evaluation Criteria:

- Understanding: Clear grasp of business analysis principles.
- Application: Effective use of concepts like cost-benefit analysis and Agile/Waterfall.
- Clarity: Logical, well-structured responses.
- Creativity: Innovative problem-solving and examples.
- Completeness: Answer all questions within the word limit.

6. Deadlines and Late Submissions:

- Deadline: Submit on time; trainees who fail to submit the project will miss the “Certificate of Excellence”

7. Additional Resources:

- Refer to lecture notes and recommended readings.
- Contact the instructor or peers for clarifications before the deadline.

YOU CAN START YOUR PROJECT FROM HERE

INTRODUCTION:

This report looks at how customers are signing up for Rapid Scale's services and what we can learn from the data. We analyzed information from 300 customers who signed up between January and October 2024 to help the Marketing and Onboarding teams make better decisions.

What We Looked At:

- How customers found us (Google, YouTube, Facebook, etc.)
- Which subscription plans they chose (Basic, Pro, or Premium)
- Customer age and location

- Whether customers agreed to receive marketing emails
- Any problems with missing or incorrect information

The goal was to find out: where are our best customers coming from, who is most interested in our services, and what can we do better?

DATA CLEANING SUMMARY:

Before we could answer any questions, we had to fix problems in the data. Think of it like cleaning up a messy filing cabinet before you can find anything useful.

What Was Wrong:

- Missing Information: Some customers didn't provide their email (34 missing), location (30 missing), or age (19 missing)
- Inconsistent Spelling: The same plan was written different ways , "basic", "Basic", "BASIC" all meaning the same thing
- Duplicate Customers: One customer was listed twice
- Wrong Information: Some ages were written as words like "thirty" instead of the number 30

What We Fixed:

We cleaned up the data by:

- Removing the duplicate customer (we now have 299 unique customers)
- Making all plan names consistent (Basic, Pro, Premium)
- Fixing dates so they're all in the same format
- Converting word ages to numbers where possible
- Standardizing how "Yes" and "No" answers were written

The Result:

After cleaning, we have 299 customer records ready for analysis. Some information is still missing (like 30 customers without a location), but we've made the data as accurate as possible.

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{'initial_rows': 300,
 'initial_missing': customer_id      2
  name          9
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  age            12
  gender         8
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  email         34
  signup_date   6
  source         15
  region        30
  plan_selected 14
  marketing_opt_in 10
  age            19
  gender         8
  dtype: int64,
 'deduped_rows': 299}
```

KEY FINDINGS & TRENDS:

Where Are Our Customers Coming From?

YouTube brought us the most customers overall (58 customers), but here's the interesting part: Google is catching up fast. In October 2024, Google actually brought in more new customers (7) than YouTube (5). This suggests we should pay more attention to Google it might be where our future customers are.

Top Sources Overall:

- YouTube: 58 customers
- Google: 50 customers
- Referral: 49 customers
- Instagram: 48 customers
- Facebook: 40 customers

Who Wants to Hear from Us?

Older customers are much more likely to say "yes" to marketing emails. Nearly half of customers aged 35-54 want to receive our marketing messages, compared to only about one third of customers under 25.

Marketing Opt-In Rates by Age:

- Under 25: 36% say yes
- 25-34: 46% say yes
- 35-44: 49% say yes (highest)
- 45-54: 49% say yes (highest)
- 55-64: 43% say yes

What This Means: If we want more people to engage with our marketing, we should focus on customers in their 30s and 40s. They're more interested in hearing from us.

Who Buys Which Plan?

Premium is our most popular plan (99 customers), but it's very close , all three plans are almost equally popular. The real story is about age: customers in their late 20s and early 30s (ages 25-34) are our best customers. They buy Premium plans more than anyone else (47 out of 99 Premium customers), and they're interested in all our plans.

This age group is our goldmine, they're willing to spend more and they're open to different options.

age_band	opt_in_rate		(29,	plan_selected	region	ticket_count	
0	<25	0.357143		0	Basic	Central	2
1	25-34	0.454545		1	Basic	East	11
2	35-44	0.489796		2	Basic	North	3
3	45-54	0.489362		3	Basic	South	14
4	55-64	0.428571		4	Basic	West	10)
5	65+	NaN					

BUSINESS QUESTION ANSWERS:

Question 1: Which acquisition source brought in the most users last month?

Answer: Google brought in the newest customers in October 2024 with 7 sign-ups. That's 28% of all new customers that month. YouTube came second with 5 customers, and Facebook third with 4.

What This Means: Google is working well right now. Even though YouTube has brought us more customers overall, Google seems to be getting better results lately. We should consider putting more marketing money into Google.

Question 2: Which region shows signs of missing or incomplete data?

Answer: We're missing location information for 30 customers that's 10% of all our customers. This is a problem because we can't tell where these customers are located.

Why This Matters: Without knowing where customers are, we can't:

- Send them to the right sales person
- Run location-specific marketing campaigns
- Plan where to put our support staff

The regions we do know about:

- North: 65 customers
- East: 61 customers
- South: 58 customers
- West: 45 customers
- Central: 39 customers

Question 3: Are older users more or less likely to opt in to marketing?

Answer: Older users are MORE likely to want marketing emails. The numbers are clear:

- Customers under 25: Only 36% want marketing emails
- Customers 25-34: 46% want marketing emails
- Customers 35-44: 49% want marketing emails
- Customers 45-54: 49% want marketing emails
- Customers 55-64: 43% want marketing emails

What This Means: Customers in their 30s and 40s are almost twice as likely to say "yes" to marketing compared to customers under 25. If we want to grow our email list and get more engagement, we should focus on this older group.

Question 4: Which plan is most commonly selected, and by which age group?

Answer: Premium is the most popular plan (99 customers), but it's very close - Pro has 93 customers and Basic has 92. They're almost equal.

The real answer is about age: Customers aged 25-34 are our best customers. They buy Premium plans more than anyone else (47 out of 99 Premium customers are in this age group). They also show interest in all our plans, which means they're open to upgrading.

Breakdown by Age:

- 25-34 year olds: 47 Premium customers, 44 Pro customers, 42 Basic customers
- This age group is interested in everything we offer

What This Means: If we want to sell more Premium plans, we should focus our marketing on people in their late 20s and early 30s. They're our most valuable customers.

Question 5 (Optional): Which plan's users are most likely to contact support?

Answer: Basic plan customers contact support the most (40 support tickets). However, since we have almost equal numbers of customers on each plan, this suggests Basic plan customers might need more help getting started.

Important Finding: 29 customers (almost 1 in 4 who contact support) reach out within their first 2 weeks. This tells us that new customers, especially Basic plan customers, might be confused or need better onboarding.

What This Means: We should improve how we help new Basic plan customers get started. Better tutorials, clearer instructions, or more proactive check-ins could reduce support calls and make customers happier.

RECOMMENDATIONS:

Recommendation 1: Fix the Missing Location Problem:

The Problem: We don't know where 30 customers (10%) are located. This makes it hard to plan marketing campaigns and assign sales people.

What To Do:

- Make location a required field when customers sign up
- Use technology to automatically detect location if customers don't provide it
- Set up the system to catch missing information before it becomes a problem

Why This Matters: Once we know where all our customers are, we can run better regional campaigns, assign the right sales people, and plan support staffing better.

Recommendation 2: Focus Marketing on Customers Aged 35-54:

The Opportunity: Customers aged 35-54 are almost 50% more likely to want marketing emails than customers under 25.

What To Do:

- Create marketing campaigns specifically for people in their 30s and 40s
- Put more marketing budget into places where this age group spends time (like LinkedIn)
- Write email campaigns that speak to this age group's interests and needs

Why This Matters: If we focus on the people who actually want to hear from us, we'll get better results and spend our marketing money more wisely.

Recommendation 3: Target 25-34 Year Olds for Premium Plans:

The Opportunity: Almost half of our Premium plan customers (47 out of 99) are aged 25-34. This age group is also interested in all our plans.

What To Do:

- Create special Premium plan promotions for people in their late 20s and early 30s
- For existing 25-34 customers on Basic or Pro plans, create easy ways for them to upgrade to Premium
- Design marketing that shows how Premium helps with career growth and professional development

Why This Matters: This age group is already buying Premium more than anyone else. If we focus here, we can sell even more Premium plans and make more money per customer.

Recommendation 4: Help Basic Plan Customers Get Started Better:

The Problem: Basic plan customers contact support more often, and many new customers need help in their first 2 weeks.

What To Do:

- Create simple video tutorials showing Basic plan customers how to use the service
- Send friendly check-in emails at 3 days, 7 days, and 14 days after sign up to see if they need help
- Build a help section with common questions and answers
- Assign special onboarding help for Basic plan customers in regions where we see lots of support requests

Why This Matters: If we help customers get started successfully, they'll be happier, stay longer, and won't need to call support as much. This saves us time and money while making customers happier.

DATA ISSUES OR RISKS:

The Big Problem: Missing Location Information:

What's Wrong:

We don't know where 30 customers (10% of all customers) are located. This might not sound like much, but it causes real problems:

- Sales teams can't assign customers to the right sales person
- Marketing can't run location-specific campaigns
- We might not be following rules that require us to know where customers are
- Support teams can't plan staffing based on where customers actually are

Why This Happened:

- The location field was optional when customers signed up, so many skipped it
- Some information might have been lost when we moved to a new system
- Some customers might prefer not to share their location

How To Fix It:

Right Away:

- Make location required when customers sign up (they have to choose from a list)
- Use technology to automatically figure out location if customers don't provide it
- Set up the system to stop customers from completing sign up without providing location

Soon:

- Try to figure out missing locations using email addresses or other information we have
- Contact customers directly to ask for their location
- Create a dashboard that shows us when location information is missing

Long Term:

- Make it a company rule that we need location for at least 95% of customers
- Set up automatic checks that warn us when information is missing
- Train staff on why complete customer information matters

What Success Looks Like:

If we do these things, we should have location information for at least 98% of customers within 3 months. This will let us run better marketing, assign sales people correctly, and plan support better.

CONCLUSION:

Here's the story the data tells us:

Our best customers are people in their late 20s and early 30s. They buy Premium plans, they're interested in all our services, and they're our biggest opportunity for growth.

Customers in their 30s and 40s are most likely to want marketing emails almost half of them say yes, compared to only one-third of younger customers.

Google is becoming more important than YouTube for bringing in new customers, especially recently.

But we have a problem: we're missing location information for 10% of customers, which makes it hard to do our jobs well.

The good news is that all of these problems have solutions. If we focus our marketing on the right age groups, fix the location data problem, and help new customers get started better, we can grow faster and serve customers better.

By taking action on these recommendations, Rapid Scale can make better decisions, spend marketing money more wisely, and help more customers succeed.