

Identifying the Key Drivers of Personal Income

A Data-Driven Analysis of the US Census Dataset
For: Dataiku Technical Assessment

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Agenda

01

The Business Objective: What question are we trying to answer?

02

Data Exploration & Key Insights: What does the data tell us at a glance?

03

Modeling Approach: How did we build a predictive model and does it work well?

07

Key Findings & Recommendations: What are the most important takeaways and next steps?

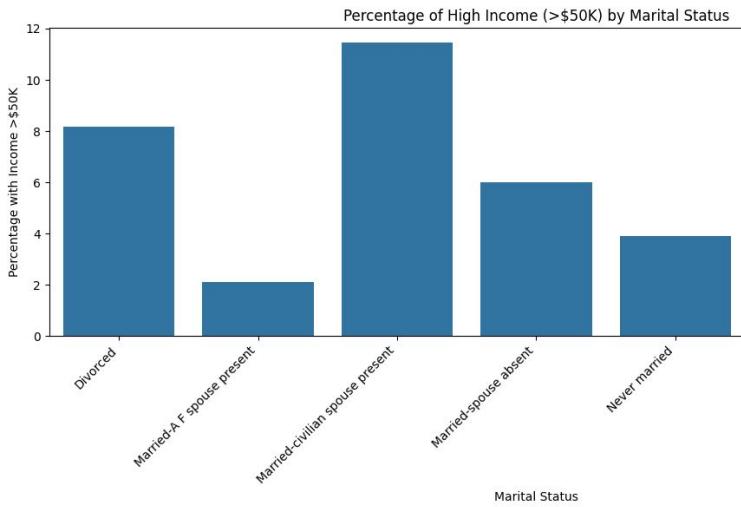
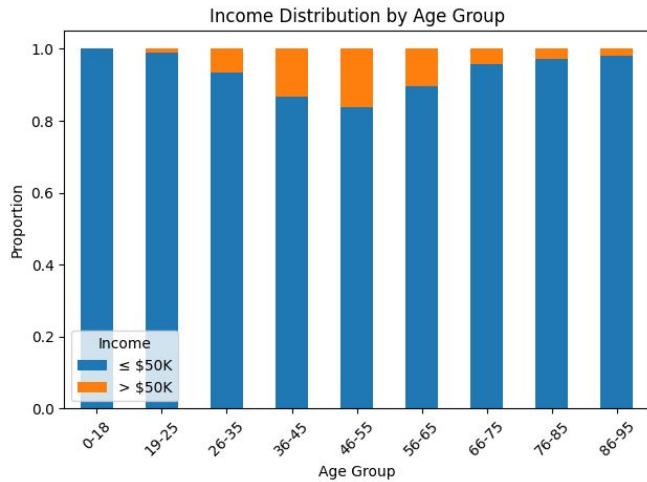
The Business Objective

Objective: To identify the demographic, occupational, and financial characteristics most strongly associated with an **individual earning over \$50,000 per year.**

- **The Challenge:** The raw dataset is large and complex, containing **~300,000 individuals** across 42 columns.
- **Massive Missing Data:** Key fields like class of worker and major occupation code are ~50% empty.
- **Irrelevant Population:** A large portion of the data represents children and non-workers, which can skew the analysis.

Our First Step: A rigorous data cleaning and filtering process to focus on the relevant adult working population.

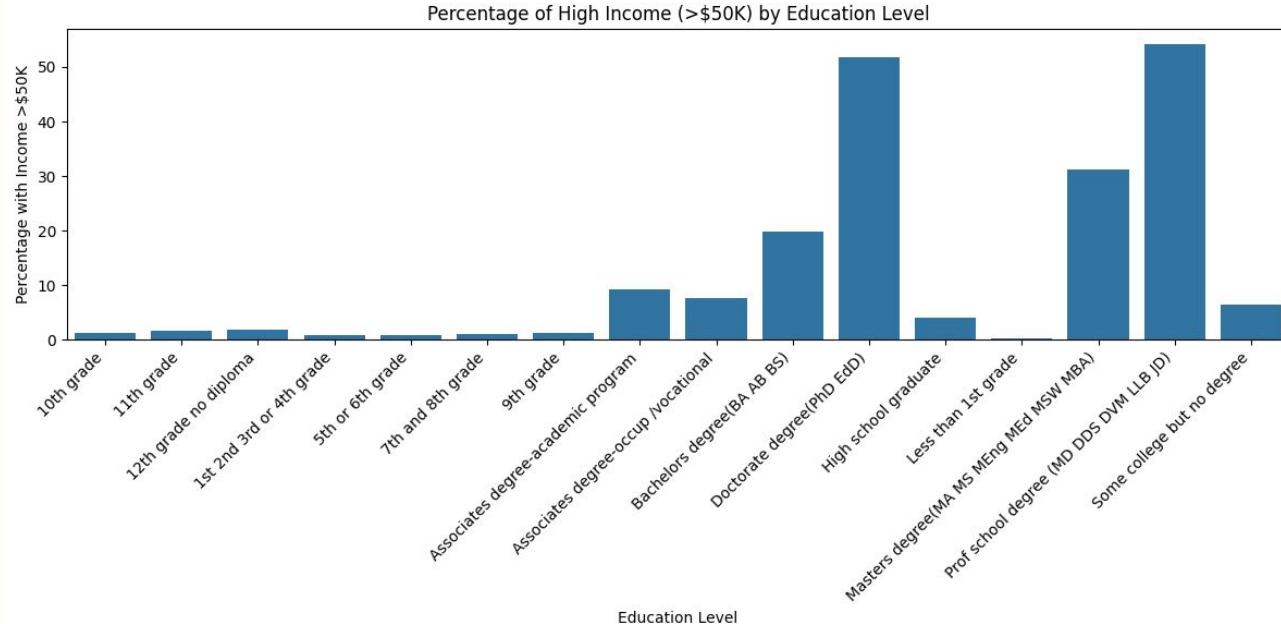
Demographics are Foundational



Insight 1 - Income potential peaks in the 46-55 age bracket.

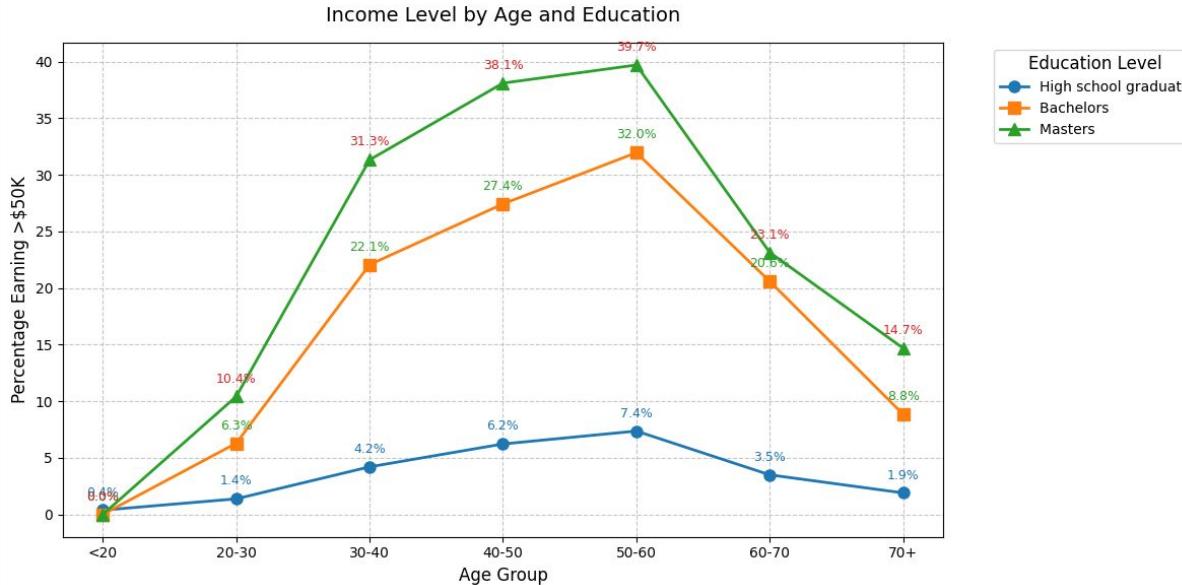
Insight 2 - Being married is a powerful positive indicator.

Deep Dive - Education is the Great Accelerator



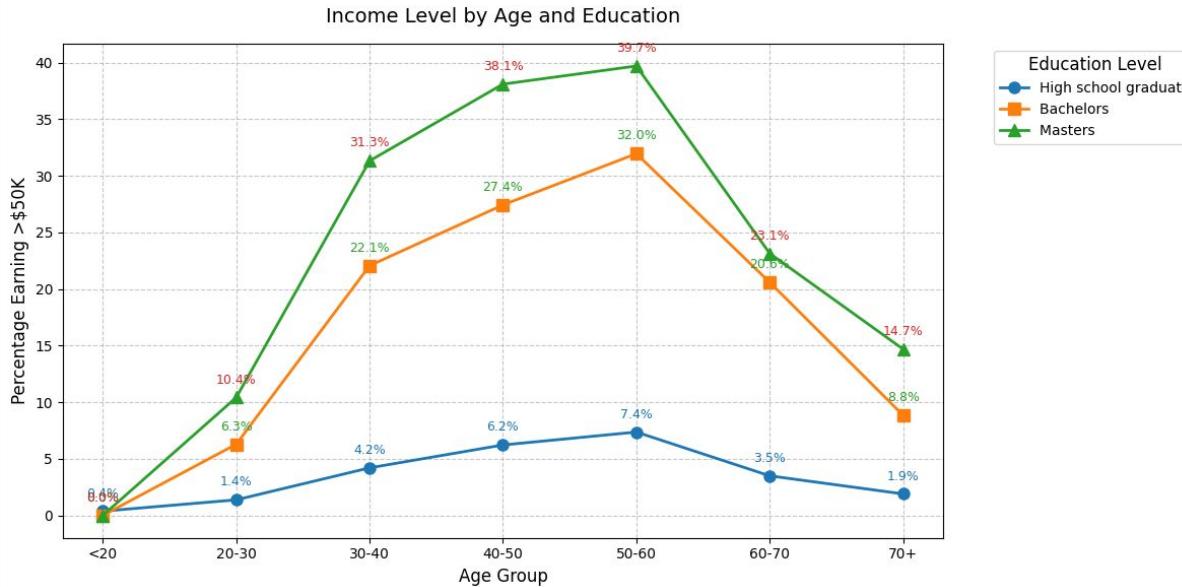
Insight 3 - While less than 5% of high school graduates earn over \$50k, this jumps to over 50% for those with a Doctorate or Professional School degree. This is a critical insight.

Deep Dive - Education is the Great Accelerator



Insight 4 - Higher education not only increases income potential but also allows individuals to benefit more from their experience as they age. This insight highlights the importance of investing in education early in life to maximize long-term earning potential.

Deep Dive - Uncovering Societal Patterns



Insight 4 - Higher education not only increases income potential but also allows individuals to benefit more from their experience as they age. This insight highlights the importance of investing in education early in life to maximize long-term earning potential.

Meet the team

Full Name
Title



Write a brief bio for this team member. Mention their background, area of expertise, and their role in this research project.

Full Name
Title



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Write a brief bio for this team member. Mention their background, area of expertise, and their role in this research project.

Greet your audience. Explain why you conducted this market analysis. For example, the market might be changing due to new competitors, technologies, or customer behaviors.

Why is this presentation relevant right now?

Upcoming projects

Launch:
Date

Project name

What is this project about? How will it help us reach our business goals?

Launch:
Date

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What is this project about? How will it help us reach our business goals?

01

Step name

Summarize how you conducted your market analysis. Be transparent about how you reached your findings.

As your first step, you might have defined your research goals and approach.

02

Step name

Continue with the second step in the process.

For example, you might have selected your data sources, then collected data through surveys, interviews, focus groups, industry reports, etc.

03

Step name

Finally, describe how you arrived at your conclusions.

This might have included analyzing the data, interpreting the results, and making recommendations. Duplicate this slide to include more steps.

Key findings

Summarize the main takeaways from your market analysis.

Write a high-level summary here, then break it down into specific data points and callouts in the rest of this slide.

Most used channels



00%
Projected growth

00%
Projected growth

Emerging trends

- Highlight 3 or 4 upcoming market trends
- Describe each trend in a brief headline
- You can elaborate on these trends in a later slide

Write a high-level statement about your key findings



Headline for key finding 1



Elaborate on this finding. Explain how it impacts your business, your customers, or your industry.



Headline for key finding 2



Use this slide to highlight new market trends, customer behaviors, industry challenges, growth opportunities, etc.



Headline for key finding 3



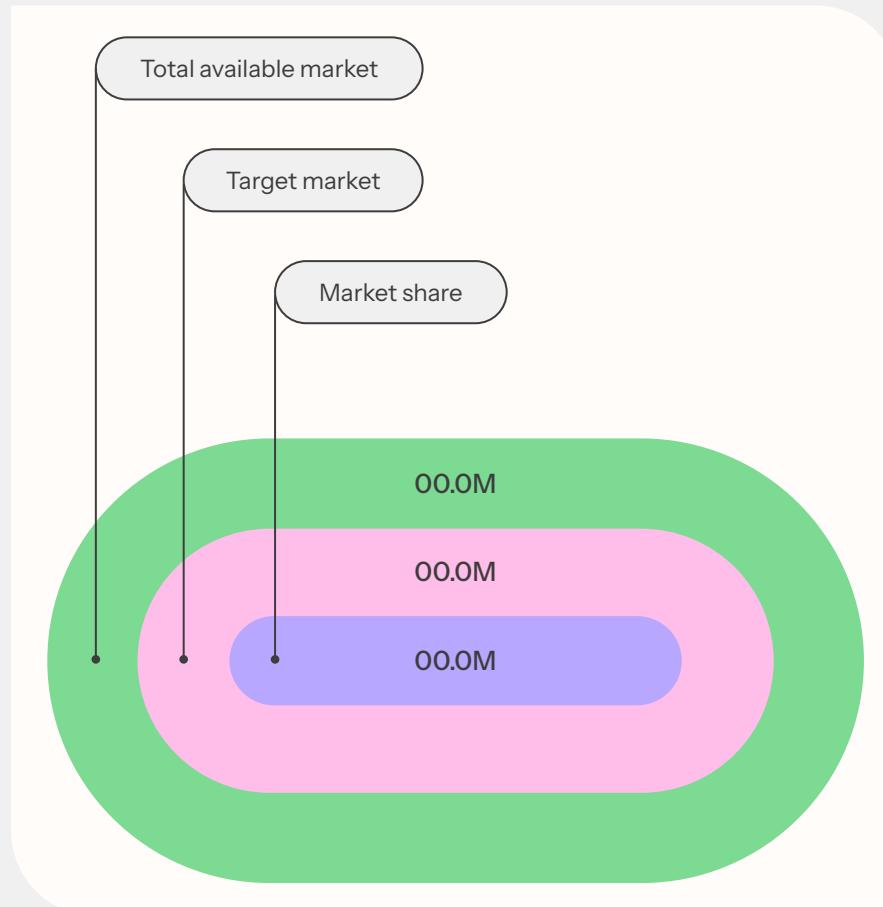
Each finding should be supported by the concrete data you'll be reviewing in the slides ahead.

Market share

Use this space to analyze your company's market opportunity, based on your research.

For example, by comparing your market share to your target market, you might conclude there's potential room for growth.

You might then recommend investing in marketing or sales efforts, expanding into new regions, investing in new products or services, etc.



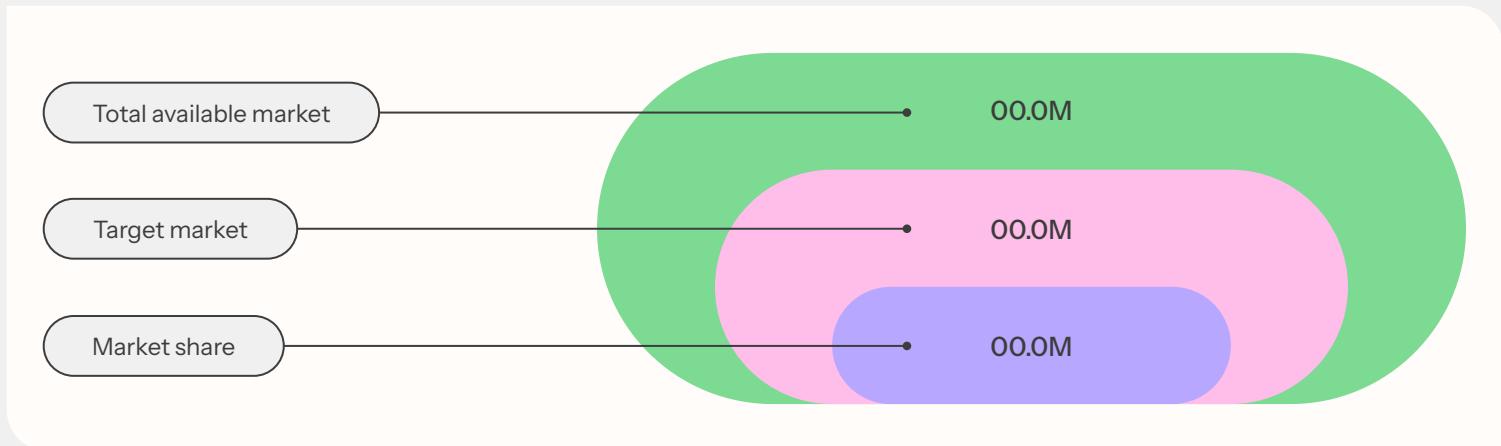
Market share

Market share

Use this space to analyze your company's market opportunity, based on your research.

For example, by comparing your market share to your target or addressable market, you might conclude there's potential room for growth.

You might then recommend investing in marketing or sales efforts, expanding into new regions, investing in new products or services, etc.



Market regions



Current market
Region name

Describe how your business operates in this city, area, country, or continent.



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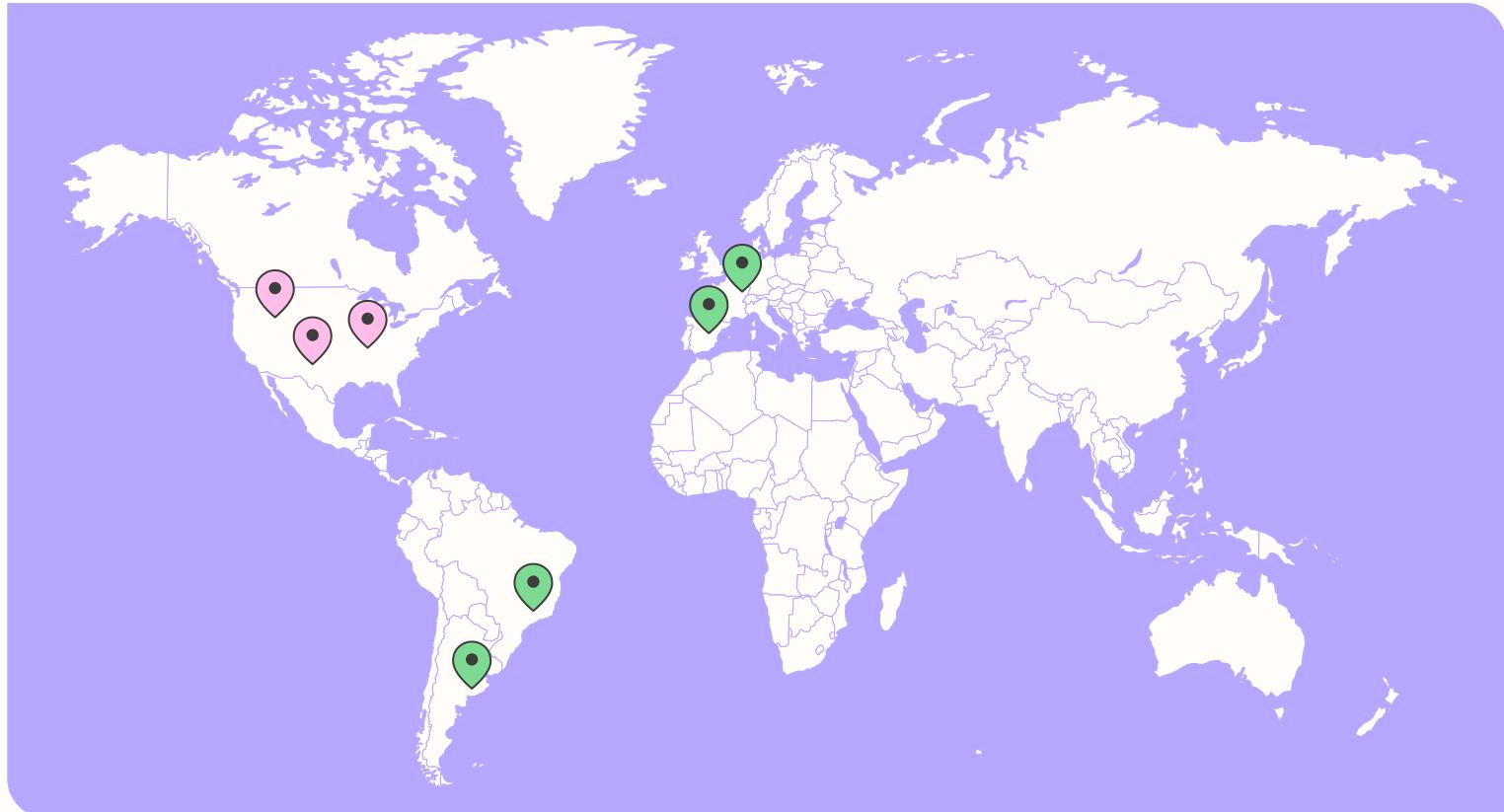
Potential market
Region name

Identify a market that offers growth potential for your business.

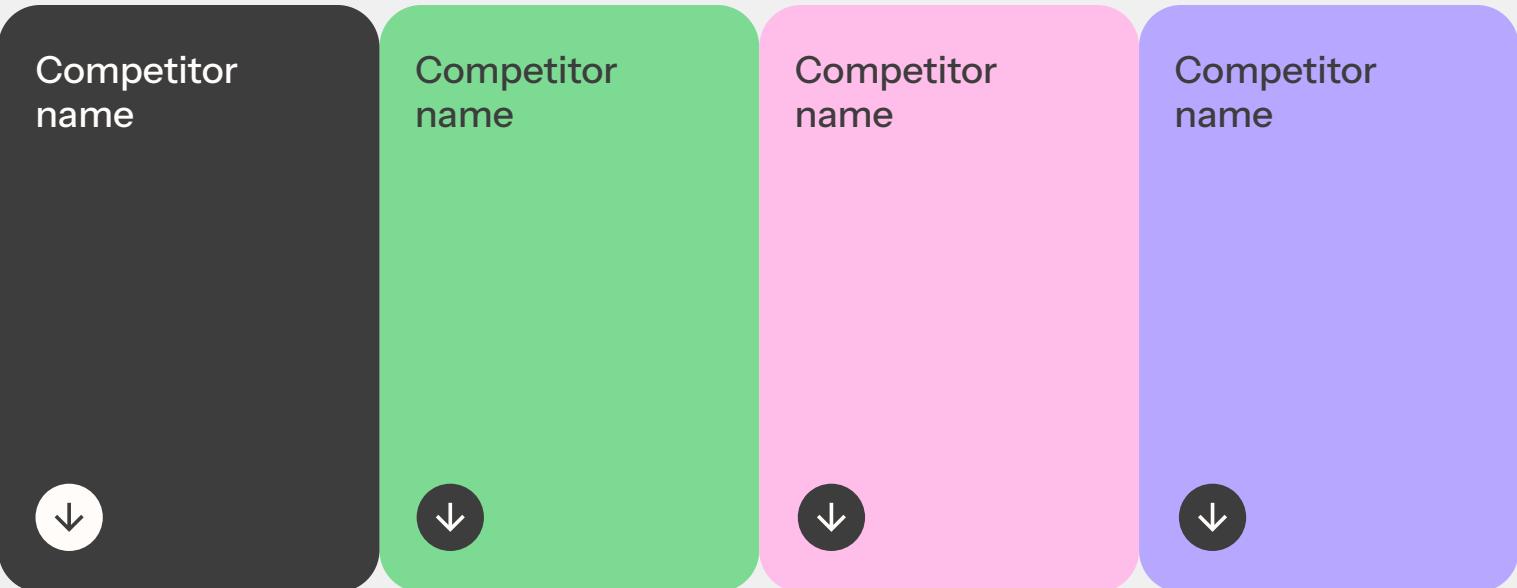
Market regions

● Current markets

● Potential markets



Write a line about your competitors in your market ecosystem



Write a line about your competitors in your market ecosystem

	Competitor name	Competitor name	Competitor name	Competitor name
Features	→ List the features of this product or service → Two or more	→ List the features of this product or service → Two or more	→ List the features of this product or service → Two or more	→ List the features of this product or service → Two or more
Strengths	→ Point out the strengths of this product or service → Two or more	→ Point out the strengths of this product or service → Two or more	→ Point out the strengths of this product or service → Two or more	→ Point out the strengths of this product or service → Two or more
Weaknesses	→ Call out the weaknesses → Two or more	→ Call out the weaknesses → Two or more	→ Call out the weaknesses → Two or more	→ Call out the weaknesses → Two or more

Based on the market ecosystem, make a claim about the opportunities for your business

01

A headline about an opportunity

Examine a specific area for growth or expansion. Explain why it's an opportunity for your company.

02

A headline about an opportunity

For each opportunity, think about what your competitors are doing (or not doing) that you could improve upon.

03

A headline about an opportunity

Describe a new feature or product type, an untapped regional market, an underused social channel, etc.

Our customers

Write a brief insight about the **customer demographics** that appear on this slide.

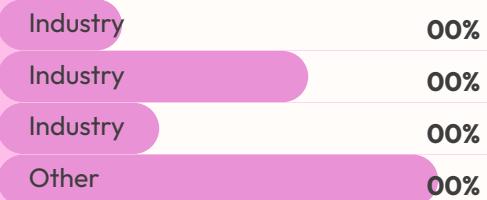
Education



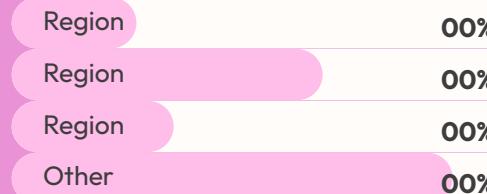
Income



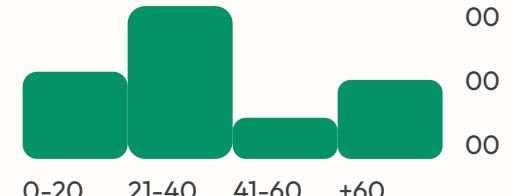
Occupation



Geography

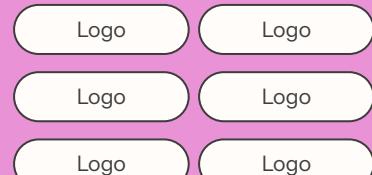


Age



Write a brief insight about the **customer demographics** that appear on this slide.

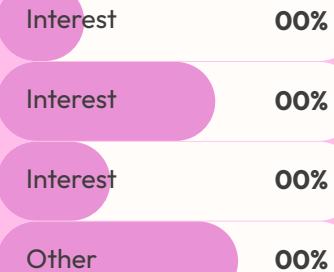
Favorite apps



Values

- “Add an insightful quote from user research that reveals what users care about.”
- “Add an insightful quote from user research that reveals what users care about.”

Interest



Personality

Extrovert



Spontaneous



Collaborative



Current feelings

Frustrated

Anxious

Hopeful

Curious

Audience personas



Persona Name

About. Describe an audience persona, if you have identified one. Make sure it's clearly different from your other personas.

Quote. “I make sustainable choices for my family, because every action counts.”

Product knowledge

50%

Purchase probability

25%



Persona Name

About. Describe an audience persona, if you have identified one. Make sure it's clearly different from your other personas.

Quote. “I make sustainable choices for my family, because every action counts.”

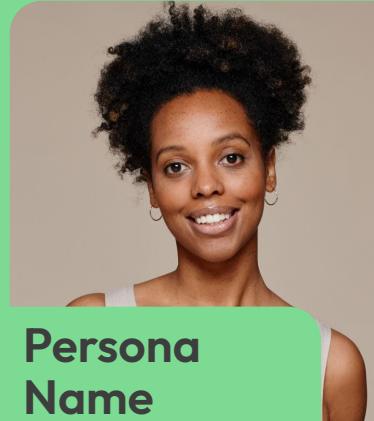
Product knowledge

75%

Purchase probability

93%

Audience persona



**Persona
Name**

Write a brief bio of an audience persona.
Draw from your demographic data for
inspiration.

Your persona should be a hypothetical user,
client, or customer who represents a broader
audience segment.



Needs and motivations

- What does the persona want to achieve?
- What motivates them to pursue their goals?

Pain points

- What obstacles do they encounter in their daily lives?
- What stands in the way of their goals?

How we can help

How do our products or services help the persona achieve their goals?



Persona
name

“In a quote, summarize your persona’s needs. This quote can be fictional or based on real interviews. Ideally, the need is satisfied by your product or service.”

Write a brief bio of this audience persona. Draw from your demographic data for inspiration.

Your persona should be a hypothetical user, client, or customer who represents a broader audience segment.

Goals and obstacles

What does your persona want or need to achieve?

→ Add a goal

What stands in the way of them achieving their goals?

→ Add an obstacle

How we can help

How can your offerings help the persona achieve their goals?

- Benefits of your products or services
- 2 or more

Persona name



“In a quote, summarize your persona’s needs. This quote can be fictional or based on real interviews. Ideally, the need is satisfied by your product or service.”

Write a brief biography of this audience persona. Draw from your demographic and psychographic data for inspiration.

Your persona should be a hypothetical user, client, or customer who represents a broader audience segment.

Based on your market research, present a hypothesis about how your market and audience are evolving.

Identify a market trend

Explain why you consider this to be a current or future trend. Support your argument with all the information you've outlined during this presentation.

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Explain why you consider this to be a current or future trend. Support your argument with all the information you have reviewed during this presentation.

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SWOT

Write a brief conclusion of your company's position in the market. Expand upon your insights by identifying your company's strengths, weaknesses, opportunities, and threats.

Strengths



- Make a list of what your organization or team excels at
- This is what sets you apart from the competition, even within your organization
- Add as many items as you want

Weaknesses



- Identify areas for improvement within your organization or team
- Think about what you could be doing internally to achieve better results
- Add as many items as you want

Opportunities



- Call out any opportunities for growth
- These are external factors, such as market trends or platforms, that your business can leverage
- Add as many items as you want

Threats



- Mention any challenges, obstacles, or risks that your business is facing
- These can range from environmental factors to new market competitors
- Add as many items as you want

Project roadmap

Our next projects	Project name	Project name	Project name
Description	What is this project about? How will it help us reach our business goals?	What is this project about? How will it help us reach our business goals?	What is this project about? How will it help us reach our business goals?
Owners	→ List the key project owners → Mention what they'll be responsible for	→ List the key project owners → Mention what they'll be responsible for	→ List the key project owners → Mention what they'll be responsible for
Deliverables	→ List the final outcomes → These could be documents, prototypes, reports, etc.	→ List the final outcomes → These could be documents, prototypes, reports, etc.	→ List the final outcomes → These could be documents, prototypes, reports, etc.



Thank you!