

BIA 654 Experimental Design II

*Design of Experiments:
Optimizing a Dice Profile for
maximization of responses
(Interview calls)*

Members:

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Overview

- Dice is a open web social recruiting platform which builds and analyzes profiles based on publicly available data from 130 social sites
- The site is used mainly by consultancies and recruiting companies for lead generation as it has a massive resume database of tech professionals actively looking for the next great opportunity.
- Anyone who is looking for a job can market themselves on Dice by creating a profile with their personal details, requirements and uploading their resume into it
- Getting on top of the search results of recruiting companies can be tricky as your profile is one among the several thousand similar profiles. In this project, we plan to determine the factors affecting the chance of a profile being shortlisted and contacted by a recruiter.



Dice - Tech Careers Platform

The screenshot shows the Dice Tech Careers Platform interface. At the top, there's a navigation bar with links: Dice, Tech Careers, Career Center, Insights, Contact Sales, Talent Solutions, and Sign Out. Below the navigation bar, a search bar is prominently displayed with the text "Search across 80,525 Tech Jobs". The search bar has two input fields: "Job title or keywords" and "San Francisco, CA", followed by a "Find Tech Jobs" button. Below the search bar, there's a section titled "Tech News" with a featured article: "Why GoPro's Layoffs Won't Affect Developers". The article includes a sub-headline: "The company's dev community could remain robust. [Read More](#)". To the left of the article is an illustration of a person holding a sign that says "HIRE ME". At the bottom of the page, there's a footer with a "D" logo and the text "Discover your market value with the Dice Careers app." and a "Learn More" button.

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Want Tech Super Powers?

Why GoPro's Layoffs Won't Affect Developers

'Pokémon Go' Shows No App Immune from Decline

Trending Searches

Business Analyst Jobs

Hadoop Jobs

Java Jobs

iOS Jobs

QA Jobs

Android Jobs

Project Manager Jobs

JavaScript Jobs

.NET Jobs

Dev Ops Jobs

Companies On Dice





Dice Profiles

Srikanth Kidambi

Edit Profile

srikanth.kidambi@yahoo.com (614) 956-8724 07306

Jersey City, NJ United States

Add LinkedIn Profile URL Add Twitter URL

Add Facebook URL Add Personal Website URL

Experienced Data Scientist

Full-time
Relocate? Yes
Preferred Location ?
Need H1 Visa Manage Work Authorization
Security Clearance? Yes
Add a Salary, Add an Hourly Rate
Experience: 3 yrs

Skills

Top Skills	Experience (>0 - 15+ Years)	Years
SQL	<div></div>	3
SAS/Enterprise...	<div></div>	3
R	<div></div>	3
Python	<div></div>	3
Apache Hadoop	<div></div>	1
Tableau	<div></div>	2
Apache Spark	<div></div>	1

Add a skill

Factors in the Experiment



- We have selected four factors for our experiment with each having two levels (low and high)

Factor	Low	High
H1-B required (X1)	No	Yes
Profile Tag line (X2)	Data Scientist	Analytics Consultant
Work Years (X3)	3 Years	8 Years
Job type (X4)	Short term contract (< 1.5 years)	Long term contract (> 1.5 years)

Methodology

- Since we have 4 factors, a full factorial design would require $2^4 = 16$ runs. Instead we decided to go for a half factorial design requiring $2^{4-1} = 8$ runs.
- We are confounding a main effect with a three way interaction. $X_4 = X_1 X_2 X_3$. Our experiment has a resolution of IV.
- We have created total 8 profiles in Dice and the experiment is ran for a period of 17 days for each profile
- The two periods overlapped by design as we want to negate the effect of Thanksgiving week which is a rather dull week for job search.

Period 1	Nov 9 – Nov 25	First 4 profiles are active
Period 2	Nov 16 – Dec 2	Other 4 Profiles are active

Running experiments

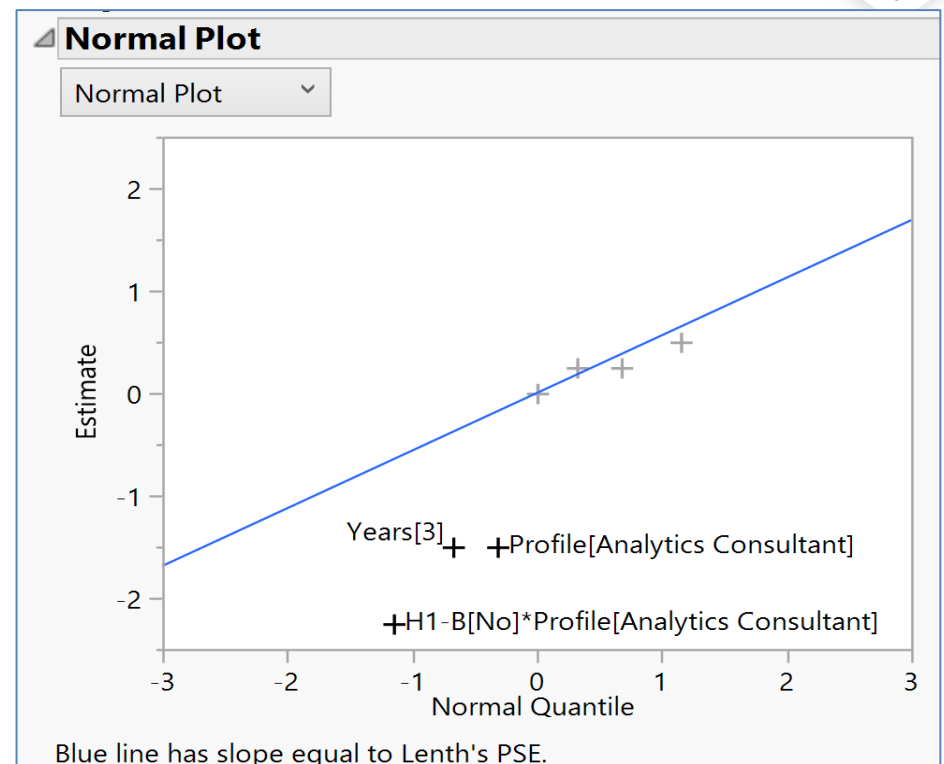
Runs	X1	X2	X3	X4(=X1*X2*X3)	Profile owner	Experiment period
1	-1	-1	-1	-1	Raj	Period 1
2	1	-1	-1	1	Vamshi	Period 1
3	-1	1	-1	1	Raj	Period 2
4	1	1	-1	-1	Arslan	Period 1
5	-1	-1	1	1	Vaibhav	Period 1
6	1	-1	1	-1	Vamshi	Period 2
7	-1	1	1	-1	Vaibhav	Period 2
8	1	1	1	1	Arslan	Period 2

Design table (Screening Design)

	Pattern	H1-B	Profile	Years	Job Type	Number of Responses
1	++++	Yes	Analytics Consultant	8	Long Contract	12
2	--++	No	Data Scientist	8	Long Contract	15
3	+--+	Yes	Data Scientist	8	Short Contract	10
4	----	No	Data Scientist	3	Short Contract	11
5	++--	Yes	Analytics Consultant	3	Short Contract	8
6	-++-	No	Analytics Consultant	8	Short Contract	6
7	-+-+	No	Analytics Consultant	3	Long Contract	5
8	+--+	Yes	Data Scientist	3	Long Contract	7

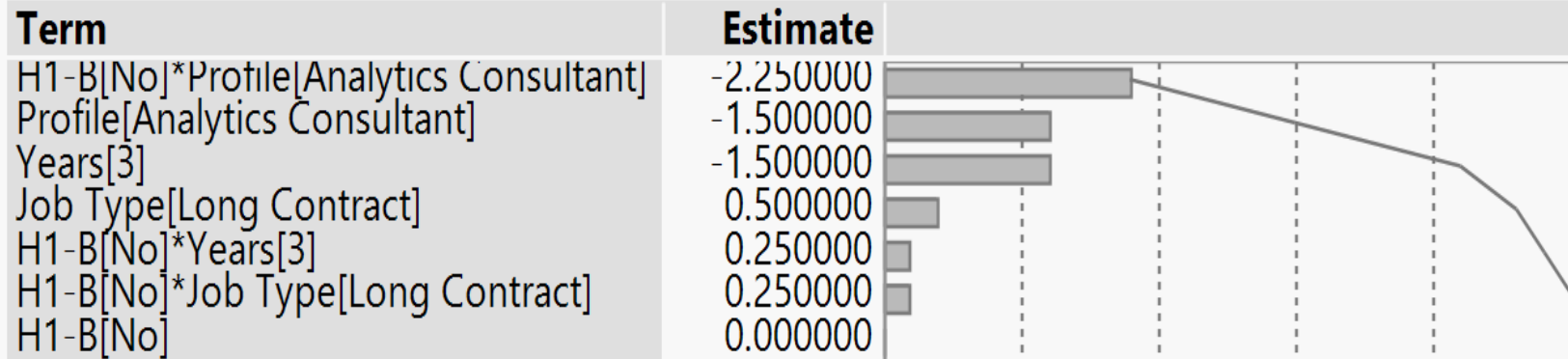
Results

Parameter Estimates		
Term	Estimate	Standard Error
Intercept	9.25	
H1-B[No]	0	
Profile[Analytics Consultant]	-1.5	
Years[3]	-1.5	
Job Type[Long Contract]	0.5	
H1-B[No]*Profile[Analytics Consultant]	-2.25	
H1-B[No]*Years[3]	0.25	
H1-B[No]*Job Type[Long Contract]	0.25	

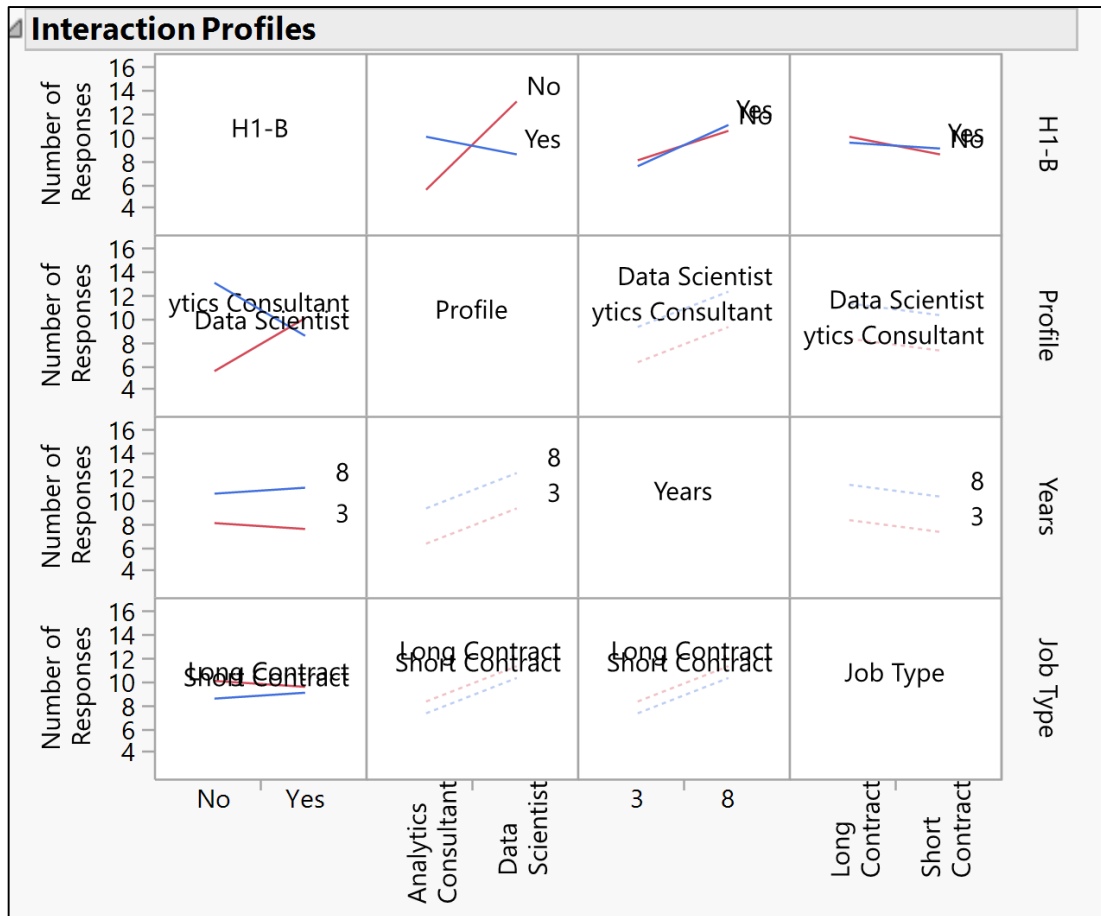


Normal plot shows only Years, Profile and interaction between H1-B and Profile are significant

Pareto Plot of Estimates



Results



Interaction between H1-B option and Profile option is significant.

Confounding Two way interactions:

- $H1-B * profile = Years * Job Type$
- $H1-B * Job Type = Years * Profile$
- $Profile * Job type = H1-B * Years$

Conclusion

*Equation : Response = 9.25 – 1.5 (Profile[Analytics Consultant]) -1.5 (Years [3])
-2.25 (H1-B[No] * Profile[Analytics Consultant])*

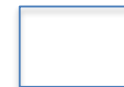
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Recommended



Not recommended



Doesn't matter