Team Vergo Tech
Data Science Hackathon
‘February 2021
Province Of The Eastern Cape

Creating an ICT Effecient Mzansi

Problem Statement

01

Unemployment is rife, we need to learn digital skills and become ICT effecient to survive in the digital time ahead. There is a high skills mismatch and low ICT efficacy and internet literacy in our country. Those at the bottom of pyramid stand to lose the most.

Digital Skills Framwork (DBE 2019)

This policy seeks to ensure the intergration of ICT into the school curriculum.

02

is the government doing enough to ensure a digital skills for all curriculum in our country? Are we being equipped with the relevant digital skills to be attractive to tech jobs? Policy needs to reinforced on digital skills for all curriculum

Digital Skills Strategy(DTPS 2017)

Aims to drive policy that ensures digital skills are developed for agility, creativity and problem solving

Our Solution TechScore

Our Solution makes use of the linear regression model with the aim of analyzing data on ones ICT Efficacy and General Efficacy to predict their likeliness of finding employment based on these features.

Most people in the country battle to find employment let alone a job that fits their skills set and abilities.
This is set to worsen if no urgent intervations are made.
We need a robust digital skills curriculum in our schools to ensure ICT efficiency in learners from a young age.

We hope from this presentation, decision makers can find some insights. That they can see there is an urgent need for the digital skills strategy to be prioritized and implemented with precision to ensure those at the bottom of the pyramid are not left out and a digital curriculum is developed to fit their General Efficacy.

PITCH DECK V 1.0

Data Selection & Cleaning

We selected and cleaned the data we wanted to use. Which was the ICT self efficacy and general efficacy data. We took 10 columns for each.

Data Splitting & Testing

We then split the data into a 33% test set and 67% training set.

Model Training

Our model was then trained using the Linear Regression Model.

Model testing

The Model is tested with the mean square error score used as a measure for accuracy.
‘For the end user, they can use the model to test their own ICT & General efficacy score to identify weakness and improve chances of employment.

Observations

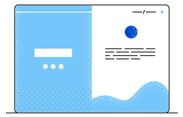
From our model and the overall data set we were able to make some of the following observations.

ICT Self Efficacy Q1

IN CELL 1 THERE IS 100% CORRELATION BECAUSE VARIABLE ARE THE SAME

ICT Efficacy Vs Employment

THOSE WITH HIGH ICT SCORE MOST LIKELY EMPLOYED & GRADUATE



Mean Expenditure

2245.244632

Mean Household Income

3.209333

Data Insights

Story our Data Tells

"ICT Self Efficacy

1 Cell 1 & Q1 Self Efficacy

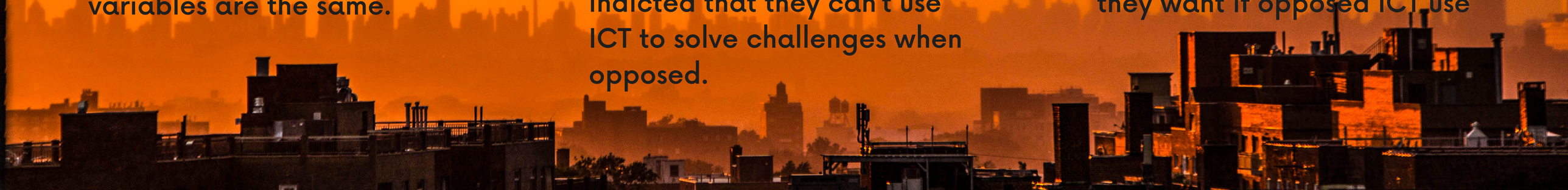
Here we seea 100% correlation because these variables are the same.

2 Cell 9 Q2

Here only 69% of the answers correlated. 31 of the people indicted that they can't use ICT to solve challenges when opposed.

3 Cell 2 Q10

Again we see 69% correlation between using ICT to handle whatever comes ones way and people finding a way to get what they want if opposed ICT use



General Efficacy

Cell 9 Q1

There is only a 45% correlation between people managing to solve difficult problems by trying hard enough & being able to handle whatever comes ones way. 55% of people are not able to do the above.

Cell 6 Q10

We see only a 50% correlation between people being able to handle whatever comes their way & people solving problems if they invest necessary effort.

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```
In [1]: import pandas as pd
        import matplotlib.pyplot as plt
        import seaborn as sn
        from sklearn.model_selection import train_test_split
        from sklearn.linear_model import LinearRegression
        from sklearn.pipeline import Pipeline
        from sklearn.metrics import mean_squared_error

In [6]: data = pd.read_excel('03 - Environmental Scan 1.xlsx')

In [7]: df = data.copy()
        df
```

Out[7]:

	QuesionnaireNo	Expenditure	Household_Income	Province	Municipality	Area	UrbanPeriUrbanRural	@1.DEMOGRAPHICS	Q1.WhatisyourGender	Q2.
0	2618	600.0	1	Eastern Cape	Sundays River Valley	Kirkwood	Rural	NaN	1	
1	2556	1200.0	2	Eastern Cape	Sundays River Valley	Kirkwood	Rural	NaN	2	
2	2504	1500.0	1	Eastern Cape	Sundays River Valley	Kirkwood	Rural	NaN	1	
3	2574	1500.0	1	Eastern Cape	Sundays River Valley	Kirkwood	Rural	NaN	1	

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...	...	...	...
2995	0	0	0
2996	0	0	0
2997	1	0	0
2998	1	0	0
2999	1	0	0

3000 rows × 19 columns

```
In [12]: features.index('@11.ICTSELFEFFICACY')
Out[12]: 213

In [13]: X_ICT = df.iloc[:,214:224]

In [14]: #X_ICT = df.iloc[:,225:235]

In [15]: X_ICT
```

Out[15]:

	Q1.IcanalwaysmanagetosolvedifficultproblemsusingICTifItryhardeno	Q2.IfsomeoneopposesmeusingICTIcanfindthemeansandwaystogetwhatIwa	Q3.UsingICTitiseasyformetosticktomyaimsandaccomplishmygoals

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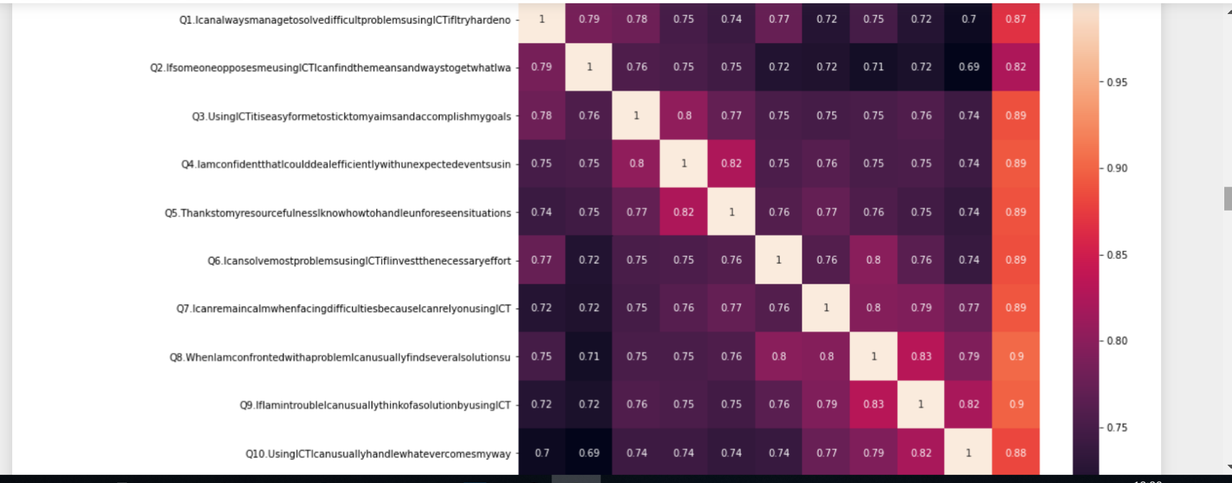

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