# *COMP3850 Project Deliverable Certificate*

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|---|---|
| Name of Deliverable | *Final Reflective Report* |
| Date Submitted | *31/05/2023* |
| Project Group Number | *31* |
| Rubric stream being followed for this deliverable<br>*Note: the feasibility study has the same rubric for all streams.* | *DATA SCIENCE Rubric* |

We, the undersigned members of the above Project Group, collectively and individually certify that the above Project Deliverable, as submitted, **is entirely our own work**, other than where explicitly indicated in the deliverable documentation.

| INITIAL S | SURNAME | GIVEN NAME | STUDENT NUMBER | SIGNATURE *(IN-PERSON OR DIGITAL)* |
|---|---|---|---|---|
| *TP* | *Philip* | *Tabitha* | *46347763* | |
| *CJ* | *Johns* | *Cassandra* | *46462457* | *CassandraJ* |
| *LY* | *Yates* | *Lachlan* | *45984352* | *L.Yates* |
| *AG* | *Gardiner* | *Ava* | *46410961* | *AGardiner* |
| *RA* | *Ali* | *Rory* | *45901848* | *RoryA* |

**List of tasks completed for the deliverable and activities since last deliverable certificate with totals for each individual team member and whole team** *(copy individual total row for each member and copy pages if more pages needed)*

| Performed by *(Student Names)* | Duration *(hrs)* | Complexity *(L, M, H)* | Name of task | Checked by *(Initials)* |
|---|---|---|---|---|
| Tabitha Philip | 8 | M | Writing and editing front half of document | AG |
| Tabitha Philip | 2 | L | Individual reflection | AG |
| Tabitha Philip | 1 | L | Group reflection for D5 | AG |
| Ava Gardiner | 2 | L | Individual Reflection | TP |
| Ava Gardiner | 1 | L | Group Reflection Discussion | TP |
| Ava Gardiner | 1.5 | L | Editing and Formatting Document | TP |
| Rory Ali | 0.5 | L | Individual reflection | TP |
| Ava Gardiner | 0.5 | L | Summarised the document and created the conclusion. | TP |
| Cassandra Johns | 2 | L | Individual reflection | TP |
| Tabitha Philip | 4 | M | Contributions to the presentation | AG |
| Ava Gardiner | 4 | M | Contributions to the presentation | TP |
| Rory Ali | 4 | M | Contributions to the presentation | TP |
| Lachlan Yates | 4 | M | Contributions to the presentation | TP |
| Lachlan Yates | 2 | L | Individual Reflection | TP |
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|---|---|---|---|---|
| Tabitha Philip total | 15 | | | |
| Cassandra Johns  total | 6 | | | |
| Lachlan Yates total | 6 | | | |
| Ava Gardiner total | 5.5 | | | |
| Rory Ali total | 4.5 | | | |
| Team Total | 37 | | | |

DATA SYNERGY

# Final Group Reflection

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## 1. INTRODUCTION

The following reflection demonstrates the team's understanding and thought patterns around the SAS Analytics' sponsored project Zoe Empowers and the academic requirements of Macquarie University's PACE unit. The team in its entirety conducted work in a collaborative manner accounting for all individual contributions and ideas to formulate a comprehensive approach to problem solving, discussions and tasks throughout the entirety of the project and semester.

## 2. PROJECT PLANNING

### 2.1. COMMUNICATION

**WHAT WE DID?**

The team established weekly 'stand-up' meetings which ran every Tuesday from 9:30 am to 10:00 am. These meetings were adapted from the Agile approach of daily stand-ups. Meeting agendas were drafted to make the most of the thirty minute slots with collaborative discussions around the work breakdown structure (WBS) and possible approaches to tasking. Each team member was assigned a task by the team lead with changes made according to strengths and weaknesses and harnessing skillets. In addition to this the weekly meetings acted as a session for updates by each team member, identifying risks, changes and opportunities to the project across its lifetime.

In addition to our team meeting we had fortnightly-cadence meetings with our Sponsor SAS Analytics which also ran on Tuesday's from 9:30 to 10:00 am. When a sponsor meeting would occur we would conduct our team meeting straight after. The whole team would be presented and on campus for team meetings to make the most of our in-person meetings

**WHY WE DID IT?**

Conducting weekly meetings with the team and fortnightly meetings with the sponsor allowed us to get project discussions around tasks, issues and risks done in a collaborative manner where all members were present to voice their opinions and concerns. Fortnightly Sponsor meetings allowed us to provide updates, request information regarding different data aspects of the project and receive feedback regarding both university and sponsor based deliverables.Having this style of communication upholds a culture of communication and collaboration amongst group members, ensured team members ongoing engagement in tasks, and continued to develop team harmony and unification.

### 2.2. DEFINING ROLES

**WHAT WE DID?**

Within the first three weeks of the project the team had identified each other's roles and responsibilities to take on ownership of different areas within the project. These roles included a team lead, project officers, change officers, a data consultant and data specialist.

**WHY WE DID IT?**
The assignment of roles acts like the assignment of risk across different areas of the project (change, data, stakeholder etc.). This allowed for each individual to take accountability for that specific area of the project whilst still contributing holistically. Each role allowed us to identify strengths and weaknesses across the board and work accordingly to see the successful and efficient completion of deliverables.

**WHAT SHOULD HAVE BEEN DONE DIFFERENTLY?**
Initially we only had the one technical role present which presented a burdenfully amount of work for one person. We quickly realised this and amended another role to account and accommodate for this. The addition of a Data Consultant championed the ideas of the Data Specialist whilst providing support for the Sponsor-run platform which the team was using to analyse the project's data. The Data specialist took lead to data aspects of the project including generating technical outputs, asking data specific questions to the sponsor, analysing and interpreting the data and taking charge of technical writing where need be and with support.

## 2.3. IDENTIFYING STAKEHOLDERS & ANALYSIS

**WHAT WE DID?**
By identifying and analysing the project's stakeholders the team were able to pinpoint people of interest and influence as well as where to get information and further resources regarding the Zoe Empower's project.

Stakeholder Register SAS

| Name | Internal/ External | Role | Role Description | Interest & Influence | Contact |
|---|---|---|---|---|---|
| Lucia Biasi (Lucy) | External | Academic Program Manager | Head of student engagement across Australia and New Zealand, engaging in the SAS Work Placement Program focusing on STEM students and SAS customers working together. | High , High | Lucy.Biasi@sas.com |
| Jordan Mowlai | External | Technical Consultant | Providing feedback and insight to the student project as a technical consultant with systems engineering experience and commenting on data aspects of the project. | Medium, Low | Jordan.Mowlai@sas.com |
| Christopher Gibson | External | Technical Consultant | Providing feedback and insight to the student project as a technical consultanting intern with previous PACE experience. | Low, Low | Christopher.Gibson@sas.com |
| Jonathan Butow | External | Senior Data lead | Providing insight to the project's data acquisition and data set insights. Worked closely on the Zoe Empowers project previously. | Low, Low | Jonathan.Butow@sas.com |
| Deborah Richards | Internal | Unit Convenor | Oversees the unit and provides guidance and feedback around project issues relating to the Data Science specific projects. | High , High | deborah.richards@mq.edu.au |
| Sonit Singh | Internal | Data Science marker | Oversees the Data Science project marking, providing feedback and insights on deliverables. | High , High | sonit.singh@mq.edu.au |

**WHY WE DID IT?**
Identifying project stakeholders allowed us to identify stakeholder needs, questions and issues more effectively and efficiently. It also allowed us to get answers to questions better suited to one stakeholder group over another. Internal stakeholders provided the team information and clarity around university-specific deliverables whilst external stakeholders provided information

around sponsor-specific deliverables. External stakeholders were still able to provide input around academic requirements whilst still fulfilling their own wants and needs throughout the project.

### 2.4. ESTABLISHING A SCHEDULE

**WHAT WE DID?**
The use of ProjectLibre (application project management tool) allowed the team to visually see the scheduling of tasks and deliverables on a gantt chart and the WBS for each deliverable.

The use of Trello (online project management tool) also allowed the team to visually see tasks that were beginning, in progress and completed.

**WHY WE DID IT?**
Visually seeing tasks mapped both schedule wise and progress wise emphasised to the project team the importance of time management and how little time we really had when everything was visualised. It also demonstrated the intricacy to the breakdown of tasks and how much was needed to be done within each deliverable to be deemed 'completed'. With the close of semester approaching and deliverable four handed in there was still plenty to be done and seeing that actively being shuffled on Trello was terrific.

### 2.5. GOAL SETTING AND TASK PRIORITISATION

**WHAT WE DID?**
Internally to the team we have conducted discussions around WBS and the importance of time management when it comes to deadlines prescribed by the university. Bringing to light risks around timing we established a series of internal deadlines to meet the prescribed academic-deadlines. These internal deadlines granted us time to 'clean' up our work and bring together several moving pieces into one cohesive deliverable that was presentable and met the baseline criteria and more. Task prioritisation ensured we were giving enough attention to each task that came our way, and guaranteed adequate resources were assigned to it when the time came.

**WHY WE DID IT?**
Goal setting and task prioritisation permitted us to get the work done both efficiently, effectively and on time to the best of our ability. Deliverables came out presentable and received specific feedback with high marks demonstrating that our approach was indeed effective and efficient.

### 2.6. ASSESSING AND IDENTIFYING RISK

**WHAT WE DID?**
We assigned risk identification and analysis to the Change Officers within the project team but holistically looked out for the general interests of the project over its lifetime. Change officers were tasked with thinking about what risks could occur across the lifetime of the project and

what risks could occur with each deliverable. This in turn acted as a change management board revising risks with each sprint across the semester.

**WHY WE DID IT?**
Assigning roles to risk ensures that risk is always accounted for across the project. Thinking both holistically and specifically to the categories of the triple constraint involving time, scope and budget (not really budget more so resources) across the semester was really helpful. An example included the change officer Lachlan Yates highlighting the importance of increased communication towards the end of the project. Lachlan suggested we add an additional fifteen minute meeting towards the end of the week to address any gaps with the increase in tasks and the shortening of deadline times. In turn the team was able to be well informed and organised for the final presentation and deliverable five.

**WHAT SHOULD HAVE BEEN DONE DIFFERENTLY?**
Even though the team's communication was organised we would have certainly benefited from establishing a time in which a second meeting could take place. It took time to establish a second meeting and in doing so it took time out of the schedule during which meetings could have been held. Allocating that specific day and time could have been blocked out by every team member to ensure that in case emergency meetings needed to take place this would have been the time for it. Managing expectations was another aspect of the project that wasn't quiet dealt with very well, although highlighted by the project lead the team had felt a little let down by the university and sponsors by the lack of communication and engagement to the project and felt as though it was a 'check the box' assignment that needed to be done to keep up appearances. In turn the team would get demotivated and would need to have discussion on reinforcing the importance of deliverables. Additionally addressing the risk of miscommunication in the beginning would have benefitted the team as technical and non-technical translations could have been better handled. The two different tones can get confusing and time is wasted when not addressed quickly and effectively.

## 2.7. TRACKING

**WHAT WE DID?**
During team and sponsor meetings members (typically the change officer or the project lead) would take down meeting minutes to be revised/reviewed by team members after meetings had occurred. These minutes would be posted to the team discord page under the designated 'Meeting-minutes' channel.

In addition to this deliverables were saved to a project Github repository by the project officer after each submission and were also available via Google Docs.

**WHY WE DID IT?**
Minutes ensured that team members were on the same page about discussions, leaving little room for confusion. It was also an excellent way to recount what discussions had occurred both with sponsors and other team members. Where team members were absent (typically due to clash of schedule or illness) they would simply observe the meeting minutes to be up to date.

Having all our documents stored and readily available was extremely helpful and crucial to the project's success as all majority of our deliverables were documents needing to be handed in and revised. The ability to have all team members edit at the same time and then make copies proved helpful for deliverables down the line.

**WHAT SHOULD HAVE BEEN DONE DIFFERENTLY?**

Reaffirming communication with the sponsors around managing expectations is probably one of the biggest points of improvement. There were scenarios where the client was under the impression we would be presenting one thing and we'd show something different as what they wanted had not yet occurred within our academic timeline. Possibly having a dedicated weekly email correspondence with the client would have bridged this gap, have an email structured to update them on what has been done, what is in progress and what will likely be discussed in the next meeting to come. This email could also have direct questions that if at the time could not be answered could possibly be addressed at the meeting. By implementing this strategy we the team and the sponsor can always be on the same page.

Additionally not acting on assumption with communication with clients examples included awareness around the student academic calendar for PACE deliverables versus client deliverables. Assumptions about presenting a demonstration to the client of findings versus a final product when the team had not yet finished, assumptions on everyone's skill set being data oriented compared to one team member possessing data skills and the rest in other IT and business domains.

## 3. REQUIREMENTS AND ANALYSIS

**WHAT WE DID?**

The team conducted extensive discussions amongst ourselves and with the sponsor regarding the student project (PACE) and the Zoe Empowers project we were dealing with. The baseline requirements from the sponsor included three reports and a presentation. The first report would detail our findings from the three datasets provided by the sponsor (Self Sufficiency, Rwanda and Kenya datasets), the second report would delve into the analysis of key findings and the last report would pinpoint areas of recommendations that SAS could observe to present to Zoe Empowers. The final deliverable would be a presentation which would summarise all three reports and whether or not Zoe Empower's has an effective charity.

**WHY WE DID IT?**

We were aiming to figure out an overarching question with overarching solutions. SAS themselves mentioned that it was a 'very open ended question and project' leaving plenty of room for us to make discoveries and questions. The team also were insistent on understanding SAS's wants and needs to better understand the project from a student perspective.

**WHAT WORKED?**

The team realised that the project was very open-ended and was really up to us to determine the questions and the answers. The overarching question of 'Is Zoe Empowers an effective question?' turned out to be something that focused on the measure of 'How does Zoe Empower's improve the lives of its participants?' and then to 'How does the Self Sufficiency Index change throughout a participant's lifetime throughout the Zoe Empower's program?'. The requirements and questions were constantly evolving and developing into specific questions and criteria that the team could work with.

**WHAT SHOULD HAVE BEEN DONE DIFFERENTLY?**
The team would have benefitted from a group discussion on what our perspective of the program was and then come up with a series of direct/vigorous and logical questions to ask SAS so that we could get a clearer direction of where to move. In doing so we would have saved up to three to four weeks worth of back and forth conversations with the sponsor and developed the needs statements of the client more concisely.

## 4. DESIGN

**WHAT WE DID?**
The team came to the consensus that the project should be broken down into a series of sections that would make up the Findings report and pave the way for the two following reports (Analysis and Recommendations). The main points would centre around the Self Sufficiency Index, a measurement of self sufficiency for participants which were composed of eight different factors which would make up the second half of the project. The second main point would dissect how those eight factors influence the SSI, how they change with each participating country and Zoe Empowers' work differentiating in each country.

**WHY WE DID IT?**
In doing so this provided a clearer picture and direction in which we could take the project. This also helped in executing tasks and deliverables in a more efficient manner as clearer goals were being established.

**WHAT WORKED?**
Breaking down the problem into smaller bits helped the team to channel its resources and time more efficiently to come up with a solution that addresses different aspects of the project and yet also meet SAS's requirements.

**WHAT SHOULD HAVE BEEN DONE DIFFERENTLY?**
Conducting a more contextualised study of the two different countries earlier on would have benefitted the team especially in painting a picture of the different environments we were dealing with. Being able to understand the countries from geography, economic and poverty statuses and climate environment would have provided a basis to analyse findings and tell a story.

## 5. IMPLEMENTATION

The team divided the work into three main sections of findings, analysis and recommendations (as prescribed by the client) reports and then broke down the data into its small sections of 'What makes up the SSI?' its features and the eight categories with each member assigned 1-2 categories each. The work breakdown structure is as follows:

- ➢ Self Sufficiency Index (Linear Regression) - Cassandra Johns
    - ○ Random Forest Model
- ➢ Health and Hygiene - Ava Gardiner
- ➢ Food Security and Nutrition - Ava Gardiner
- ➢ Education - Rory Ali
- ➢ Economy - Rory Ali
- ➢ Housing - Tabitha Philip
- ➢ Community - Tabitha Philip
- ➢ Child Rights - Lachlan Yates
- ➢ Spiritual Strength - Lachlan Yates

Using this WBS each member produced findings on the sponsor's platform Viya creating data visualisations such a bubble plots, two-way bar charts, dot plots, correlation matrices, random forest model etc. From these findings the group conducted consultations amongst each other to figure out what each visualisation meant and what additional information could support the analysis around it. From there each member collated the strongest findings and analysis into a report to be presented to the client. The recommendations is the last of the reports and is in the current works with team discussions and deliberations around what would work best for the Zoe Empowers organisation to implement a series of recommendations that has the best outcome for its participants. In addition to this our Data Specialist dedicated their time to the python side of the project, creating data visualisations and linear regression on python which added a different angle to our insights.

**WHY WE DID IT?**
Breaking down the 'problem' and the work ultimately led to this notion of 'divide and conquer' . It gave the team an opportunity to take the work one step at a time and really make the most out of each category and section. By breaking it down we were able to allocate enough time to look into our allocated categories and bring up discussion points to debate what works and what doesn't work.

**WHAT WORKED?**
Dividing up the work was definitely the best strategy when it came to time management and resource allocation.

**WHAT SHOULD HAVE BEEN DONE DIFFERENTLY?**
Definitely working with the data earlier within the project would have helped. Being able to see the data from the first instance would have given the team better understanding further into the project knowing different data structures, what data meant in the different categories. Additionally, emphasising the importance of learning the client platform early on would have helped with a smoother transition to figuring out what needs to be done to get the project executed more efficiently.

## 6. LEARNING OUTCOMES

**ULO1: Critically analyse and describe the client's problem and apply principles, models, tools, techniques, technology and processes to provide a solution.**

The team applied this learning outcome the most in the scoping document and feasibility study. We were able to demonstrate to the client how we broke down the problem and our ability to complete the project within the designated time frame of the semester (up to June 2023).

In doing so we implemented the Scrum Agile approach to deal with the client's problem in a series of sprint-like deliverables.

**ULO2: Demonstrate understanding of the project stages using appropriate process models in an authentic context.**

The team utilised the Agile project management approach specifically in the scrum framework with Kanban visualisations (in Trello). The team was able to see the work breakdown structure of tasks and scheduling in ProjectLibre demonstrating when and where to break up work to fit into the sprint-like deliverables. The Agile approach meant that the team could constantly revise, adapt and alter products to meet the clients needs but also account for change throughout the project in meetings and reviews of tasking.

**ULO3: Apply the basic principles of project management and teamwork while working closely with the project's customer.**

All members of the group were present for the team training and majority of team meetings including sponsor meetings (with one or two missed due to unit clashes and illness). In doing so we learnt to work together in a collaborative manner listening to each other's ideas and opinions on structure and topics throughout the semester. Understanding project management as a team meant handling different aspects of time, stakeholder and scope management through several moving parts within the project. Examples include coming to a consensus about when to meet the team using 'When2Meet' which is an online site that generates a meeting time using everyone's availability. Establishing internal deadlines to meet academic deadlines is an orderly manner and who can reach out to the stakeholders if need be. Identifying stakeholders needs were accomplished through rigorous discussions in sponsor meetings and presenting the scoping document to the client for additional approval.

The feasibility study allowed the team to break down the client's problem, analyse it and see what was and wasn't possible within thirteen weeks of the semester. It also demonstrated our understanding of the problem at hand including the current situation,different solutions implemented and best course of action.

The project plan document formalised the team's thoughts and understandings around project management and presented a clean representation of different areas of the project including change, risk, resource, communication and quality management.

The scoping document provided the client with a solid understanding of what the team would and would not be provided as a final product. Liaising with the client back and forth regarding scope provided us a better understanding of academic standards versus industry standards. Our client provided helpful advice and met the team half-way with the scope of the project pertaining to both industry standards and academic marking criteria.

**ULO4: Effectively communicate results of the project (in both written and oral form)**

Weekly reports were submitted to the unit to provide updates regarding what work was being done and by whom. Individual reflecting provided personal recounts of the specific weeks works and personal understanding and development around the project. Results of the project were also consistently communicated through the deliverables handed in to the university and the demonstration shown to the sponsor. The demo shown allowed the team to grasp an understanding of what data results were good and which could be improved in the eyes of the sponsor.

**ULO5: Recognise and address ethical issues when they arise based on an understanding of professional ethics.**

Ethics was consistently addressed throughout the thirteen weeks of the semester through the reinforcement of the Australian Computer Society's (ACS) Code of Professional Conduct. The code has six points including:

1) The Primacy of the Public Interest
2) The Enhancement of Quality of Life
3) Honesty
4) Competence
5) Professional Development
6) Professionalism

By observing the following code the team was able to act in a professional and ethical manner that did not jeopardise the progress of the project or the wellbeing of themselves and others around them.

Overall the team understood that acting ethically was in the best interests of the team, the project and the client's interest. Acting ethically also plays a role in the timely completion of the project by avoiding deviation and scope creep. Our train of thought is 'if it deters resources and focus from the participants (orphans) then it isn't worth it', focusing our time and energy on things that would holistically benefit the program is better than derailing on unethical behaviour and solutions.

## 7. INDIVIDUAL REFLECTIONS

### 7.1. TABITHA PHILIP (46347763) - PROJECT LEAD

**WHAT I DID?**

As project lead I was responsible for ensuring that the project's deliverables were handed in on time,within scope and budget (resource allocation wise). I needed to ensure that communications across the board meant that everyone including internal and external stakeholders were on the same page. My role entailed me organising team meetings, writing minutes, speaking to stakeholders both internally (through the university) and externally (client), communication was key as it meant the team was meeting the wants and needs of both the client's and academic requirements. I would conduct one on one with team members to make sure their needs were also being met and to ensure that everything in terms of progress and work was satisfactory on their end. In terms of time management I scheduled tasks within ProjectLibre to see the time frames in which the team were operating with each task. These timeframes allowed me to set internal deadlines within the team for deliverables such as having a deliverable completed one to three days beforehand to ensure quality and criteria were met. I would consistently reinforce the importance of time management in the team and would delegate tasks accordingly. Delegation was another big role I took on, I needed to make sure that resources (team member's skill and time) were used appropriately and in an efficient manner. This meant understanding my team member's strengths and weaknesses in order to effectively delegate tasks, where members of the team were needing help I would step in or ask if anyone was able to assist them. In general the deliverables were evenly spread across the board. This was accounted for with the assignment of task/deliverable 'owners', each member was responsible for at least one deliverable, this didn't mean that they were the only one working on it, it just meant they were in charge of seeing it through with the help of the team. Conducting work like this ensured that the responsibilities of submitting work was shared and that a sense of ownership and responsibility was enforced, in doing so each assigned member saw through each deliverable and ensured it was up to a standard that everyone would be happy with.

**WHY I DID IT?**

Ensuring communication was being maintained across the project played a major role to a project's success. Team members, stakeholders and the client all need to be on the same page and transparent about their wants and needs. In doing so I was able to translate a lot of communication across the board, an example of this is when I communicate with the team's Data Specialist Cassandra. Cassandra is able to convey ideas around data and data concepts in a very high-level and technical format that often needs to be dissected and translated to a more business-style of communication. I felt as though my skills were really well used in this case as I was able to convey the majority of Cassandra's ideas to aid the development of deliverables, data findings, analysis and recommendations. Communication with key stakeholders ensured that the team was aware of what was expected of us and how we ourselves could manage our expectations.

Conducting one on one meetings with team members allowed me to gain insight into how each member was feeling throughout the project and to ensure they were on the same page and on track with their assigned work. It also helped me to establish rapport with my team members and understand how they were feeling about the project in general. I was able to align their interests with what they were working with.

Delegating tasks was important; it meant that one I wasn't taking on a massive amount of responsibilities by assigning myself as the task owner for everything and two that others weren't being overburdened with large amounts of work. I always ensured that at least two people were coexisting on a document for example I would have Lachlan as the task owner of the Handover document but ensured that Rory and Lachlan were on the document at all time whilst I would handle revisions and have Ava and Cassandra on the Analysis and Design documents. I did my best to keep the work spread and where needed to be adjusted to ensure that the work was completed on time.

**WHAT WORKED?**

I guess I'm still waiting for this to be quantified by myself entirely, I'll believe that everything that I have done 'has worked' when I see the final mark for the overall deliverable this includes delivering in a timely and effective manner. I'd say overall the marks the team has been receiving shows that the tools and techniques being implemented are definitely working. The biggest thing I have in ensuring that everyone voices their opinion and I believe that was the biggest asset for me to see success throughout the project, where someone disagreed I would listen and synthesise the information rather than shut it down. Listening and understanding is better than having the 'I'm alway right' characteristic. Where there was an opinion of idea I didn't think would work I wouldn't say no I would ask a question that would address a gap in the solution and ask for others input as to how we could improve or close that gap, in turn we would come up with a solution that actually worked by harmonising two ideas and two opinions into one.

**WHAT SHOULD HAVE BEEN DONE DIFFERENTLY?**

Not operating on assumptions, I would sometimes think that SAS is on the same page as the team and that when we would say one thing SAS would think something entirely different. So reiterating the clients needs and expectations back to them and what we would deliver could have been better managed. An example of this is when a SAS sponsor said to 'come prepared' for a joint meeting with data champions of the company our team assumed this meant come prepared with questions rather than their expectation of a demonstration presentation. Another example was our demo findings presentation, our team was going to present examples whereas SAS was under the impression we would be presenting a demonstration of the final product. This was not possible entirely as the team would have needed to finish or commence the majority of the three sponsor deliverables before the final presentation.

My communication could have been better managed, I operate sometimes under the impression that people understand industry style communications or terminology that would be better understood in my specific working place. My actual working environment communicates very directly and to the point which can sometimes come off as blunt but the intention is not to be rude rather to just get the work done. Being cognisant of everyone's communication styles would have been the best way to address this.

### 7.2. CASSANDRA JOHNS (46462457) - DATA SPECIALIST

**WHAT I DID?**

As the data specialist I worked on driving the data analysis. This meant I was the first one to properly investigate how the data worked and what it looked like. I described to my teammates what we were working with from my experience, a feature rich but complexity reduced data sets. I started rudimentary investigations from the start using python.

Being the data specialist on a data science project essentially made me the technical lead. Working on the technical aspects of the reports. I planned what the earlier models were and attempted to make a plan around our understanding of what SAS was requiring of us. It was a difficult process to understand and balance what SAS and the Uni required from us especially as it wasn't perfectly aligned. Eventually I understood that SAS was asking us for a data analysis task, looking at patterns and relationships between variables in the data and to build a presentation. Not making any complex predictive modelling. This took a long time for us to figure out. Making the project quite stunted until that point.

Once we got started on the actual analysis, I worked with python to produce some analytics. SAS was looking for us to use their data sets to analyse the effectiveness of the Zoe Empower's methods. I used python to work through the data sets and find features. However towards the end of the project I switched to Viya after being told why it's more powerful than python for our project and also instructed on how to leverage each other against each other. These two working together I produced the analysis of how the Self Sufficiency of the participants improves with membership and described how Zoe Empower's is accurately catering towards the two different countries' strengths and weaknesses. These two are large sections of our final presentation which reflects my strength of working directly with the data.

**WHY I DID IT?**

I enjoy data analysis. I think it's incredibly useful and fun. Turning almost random data points into something we can use to clean information about the world around us. I have extra curricular experience with working on data analysis and have won some competitions that the Uni has conducted for undergraduates. It was an obvious choice to make me the data specialist and I wouldn't have had it a different way.

The two points I focused on with my findings were chosen as I felt that they answered SAS's question. Firstly, the SSI of participants increases during their membership describes in the most plain of terms that Zoe Empower's does improve the lives of those they work with. The linear regression describes a very strong positive correlation between the two variables. It's undeniable with the data we have that it improves with their membership. Secondly I described sections' most important features and why, after some research finding that Rwanda and Kenya have different constitutional laws regarding human rights. Zoe Empower's shows their understanding by the Random Forests' output of the most important features reflected the constitutional differences.

I chose to work with python because I'm far more familiar with it. I'm a programmer professionally and understand how to manage my scripts and work with raw code. Working with a platform that takes away my ability to "see under the hood" and manipulate the information to any detail I want to, didn't seem to be very interesting to me.

**WHAT WORKED?**

There were a few things that worked. My python implementation worked well for proving the effectiveness of the program. I eventually did use Viya to work on the most significant factors for the different countries and in that finding the difference in constitutions. I found that the weekly meetings worked really well, especially to have some time after meeting with SAS just as the team to instantly reflect on meetings and understand the client's desires. I think that keeping a simple momentum throughout the entire project was key to success. This was really well driven by good communication and organisation done with the team.

**WHAT SHOULD HAVE BEEN DONE DIFFERENTLY?**

If I was to do the same project again, I would have focused on understanding the platform from the beginning. I think it would have been extremely helpful for our team if I worked directly with learning how to get Viya to work, instead of working on my own with python. I stayed within my comfort zone rather than what would have been best for team work and collective skills.
I would have also let myself engage more deeply with the project much earlier. I was holding back my interest because I was scared of burning myself out. While I think that was wise to try to avoid, it would have been beneficial to have a solid foundation to work with when approaching SAS about what they were asking from us. Their primary method of direction was through criticism, which was ineffective for us as we weren't producing many results until the end for them to direct us towards the final product. They worked from a perspective that we were working through a very agile approach where we were attempting to pre-define the question before simply delving into it.

## 7.3. RORY ALI - PROJECT OFFICER/ DATA CONSULTANT

**WHAT I DID?**

Throughout the duration of the project my jobs varied with different deliverables but mostly consisted of various multi disciplinary support features over different roles. Through the first 2 deliverables I was responsible for risk analysis metrics as well as general enquiries and use of the assigned Viya for learners platform. Research into different project management procedures were conducted and then reported to Tabitha for further implementation for the rest of the project.. This use of the Viya platform came into fruition by deliverable 3 as i was co lead on the project with lachlan in creating a coherent MVP/prototype document using the tools within the Viya software to create this landscape for our visualisation aspects of our projects. This also worked out well for deliverable 4 as I was adept to show a step by step procedure for using the Viya platform properly. For our sponsor reports I was responsible for researching and presenting our findings relating to any educational and economic factors and presenting related analytics. This crosses over into our final presentation in which I am also covering this economic aspect of the target organisation, while also incorporating outside research in a manner which the sponsors have expressed desire to see extrapolated.

**WHY I DID IT?**

Coming from an information systems degree learning background I was keen to try and fit into a multi faceted role in order to test my skills and see what i'm good at and where i may need to improve on from a skills standpoints. A data science stream project seemed to be the perfect blend of aspects I was comfortable with as well as areas I needed to study and improve on. From the start of the project I positioned myself to learn the external software well. I saw it as advantageous due to the widespread nature of its use within other large corporations for dealing with these same sorts of industry data problems. I was also given many opportunities to improve my formal writing skills, especially writing around data sets and prototyping models which I haven't had much experience with before.

**WHAT WORKED?**
I definitely feel that the projects I worked on were successful, especially given the high marks our group has been able to achieve on each deliverable. The time I put into learning the viya software definitely paid off with the deliverable 3 and 4 submissions and it's gratifying knowing that parts I majorly contributed on were able to bring good marks for my other team members.

**WHAT SHOULD HAVE BEEN DONE DIFFERENTLY?**
I think throughout the unit there was always a difficulty trying to match universities deliverable structure and demands with what the sponsors themselves wanted. Oftentimes within meetings with SAS they would stop to ask what uni actually wants and a few times contradict their expectations against the deliverable requirements. If I was to do this again I would make sure to ask them clearly at the start if they were aware of the uni structure and make sure they were properly filled in on the course structure.  I think also many of us may have underestimated the size of the project in just sheer word count and pages and it definitely crept up on us towards the start with trying to manage other units at the same time.

### 7.4. AVA GARDINER (46410961) - PROJECT OFFICER/ CHANGE OFFICER

**WHAT I DID?**
As the Project/Change Officer, my primary responsibility was overseeing and managing various aspects of our project. I work closely with our project manager, Tabitha, to ensure all tasks and goals are completed on time and within budget. Some of my key responsibilities included developing project plans, monitoring progress, identifying risks and issues, and communicating updates to SAS. I also played a crucial role in team coordination and resource allocation, ensuring all team members work effectively and efficiently. As a Change Officer, I also played a vital role in identifying areas that needed change, developing the plan in the Team Manual for implementing these changes, and ensuring they were carried out with minimal disruptions or negative impacts. Throughout the change process, I communicated with all team members to address any concerns or questions they may have during our weekly meeting. As a result, I ensured all changes aligned with our overall goals and objectives and were implemented promptly and efficiently. Additionally, I kept track of the progress of the change and provided regular updates to all team members.

In the early stages of our team's development, I made it known that I would be more than willing to handle the majority of the writing for our deliverables. I find writing enjoyable and take pride in ensuring that each section of the Project Deliverable Definition Document is adequately covered so the team's hard work does not go to waste by facing penalties for missing information. If I noticed any areas that needed to be added, I would either inform the responsible team member for that section or take the initiative to make the necessary changes myself. I would also review the feedback for each deliverable and revise it for the following deliverable, in addition to writing my designated sections. Of course, I would always discuss these changes with the team during our weekly meetings to ensure they aligned with our project goals.

Unfortunately, some changes did not benefit our project, and Tabitha would have to contact the marker to revise our project again or to make him aware of what our project is. Furthermore, I took on the initiative for every deliverable once everyone had written their sections to read through the entire document, structure it and ensure there were no grammatical or spelling errors to ensure everything we delivered looked professional and business-like.

**WHY I DID IT?**
I chose data science as my field of study for Pace because I have always been fascinated by the power of data and its potential to transform the world. Data science is critical for solving complex problems and making informed business, government, or society decisions. With its focus on statistical analysis, machine learning, and data visualisation, data science offers powerful tools for extracting insights from complex data sets and using that knowledge to drive innovation and growth. Data science is an exciting and challenging field that combines technical expertise with real-world impact. I am thrilled to participate in SAS's initiative of helping Zoe Empowers determine its program effectiveness for humanitarian intervention. Furthermore, I had the opportunity to enhance my technical skill set by learning a new tool that SAS has developed - SAS Viya for Learners. This software supported our project's analytics life cycle, from data to discovery to deployment. The software made accessing, integrating, transforming, and modifying data a breeze, and the interactive, self-service visualisation tools on the software allowed me to effortlessly search for relationships, trends, and patterns to gain a deeper understanding of the Zoe Empowers Program. By learning this software, I was able to make a significant contribution to the team.

I made it my top priority to excel in every aspect of our project and contribute significantly to the team. I took on most of the writing for our deliverables to achieve this goal. I am proud to say that I ensured all sections of our deliverables thoroughly covered each area of the Project Deliverable Definition Document and that our hard work did not result in being penalised for missing information. Furthermore, I carefully reviewed feedback and revised it for the following deliverable, which resulted in us getting full marks every time. Lastly, I took the initiative to read through and structure each deliverable to ensure its professionalism and accuracy. In addition, I attended our weekly meetings, shared my ideas, and took on my fair share of the workload to ensure the success of our project.

**WHAT WORKED?**
Our team has been receiving positive feedback on the marks we have been getting back, which is a testament to the effectiveness of our collaborative efforts. I was impressed with how quickly I could familiarise myself with the SAS Viya platform, especially for someone who has only covered data science in one unit. The SAS Viya for Learner feature made accessing, integrating, transforming, and modifying data accessible. The self-service visualisation tools that came with the software made searching for relationships, trends, and patterns effortless. This allowed us to gain a deeper understanding of the Zoe Empowers Program, and I was pleasantly surprised at how straightforward it was to produce data findings and draw conclusions. Thanks to Lachlan managing the project timeline, Trello was also instrumental in keeping our team organised. We could assign tasks to team members, allocate due dates for each deliverable, and ensure that no one missed a deadline due to the automatic email reminders. By giving tasks to team members, we ensured that everyone took on their fair share of the workload, guaranteeing the success of

our project. Our weekly meetings and team workshops were invaluable, allowing us to break down the project into smaller, more manageable components and work collaboratively towards our final product.

**WHAT SHOULD HAVE BEEN DONE DIFFERENTLY?**

As we reflect on our project progress, our team can take pride in the excellent work we have accomplished. The exceptional marks we have received throughout the semester are a testament to our hard work and dedication. However, we also recognise that there are areas where we could have made some adjustments to benefit the team further. For example, with a clearer understanding of what SAS wanted and expected from us, we could have spent more time developing a deeper narrative as we progressed. In addition, using Viya for Learners earlier would have allowed us to produce and analyse broader and stronger findings more effectively. Finally, communication with SAS could have also been improved, as there were a few instances of miscommunication. For example, we came prepared with questions for a joint meeting with Group 32, when SAS was expecting a demonstration presentation. Another instance was during our demo findings presentation, where our team presented examples of our findings, but SAS thought this was our final presentation. Furthermore, we could have given SAS additional details regarding the university's criteria as they seemed bewildered about what was expected of us during our meetings. This would have enabled them to have a better understanding of the academic requirement, as they were conveying one thing to us while the university was conveying something different.

## 7.5. LACHLAN YATES (45984352) - BUSINESS ANALYST/ CHANGE OFFICER

**WHAT I DID?**

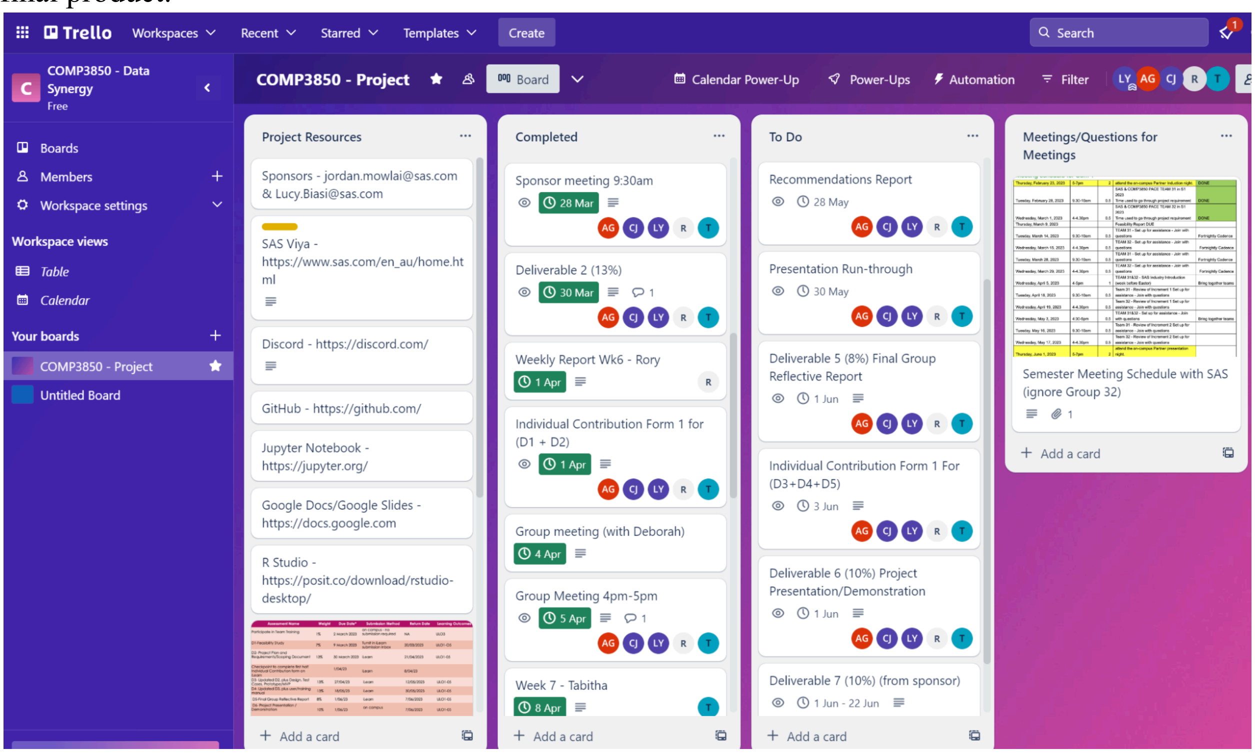
My main role in the project was to work as a business analyst and change officer. The blend of roles was undertaken to ensure a marrying up of roles in change officer with my team member Ava to give extra cover to project changes, and furthermore as a business analyst to work logically and strategically. To effectively manage change and tasks across the project, I worked mainly on a web-based, kanban-style application called Trello. Trello worked to bridge the gap with our work on Discord, where I was able to visually manage and implement due dates and date changes to project tasks, while adding small descriptions and assigning members to upcoming tasks. From this, members were reminded with emails throughout the week before a task was due, providing timeframes to work on tasks or communicate issues to our project manager Tabitha. Apart from being assigned these roles, I worked on a weekly basis with my team, ensuring I was consistently engaged with my team across the semester. Ensuring that I worked in my role, but also worked with my team on a more personal level, helped foster morale and resolve. Furthermore, my role saw me contribute to assigned tasks within the project deliverables, and working on Viya to conduct data analysis for SAS. Being a commerce student, data analysis isn't a strong point of mine, however using Viya and working closely with my team-members in analytics, helped broaden my understanding of data analytics and its processes.

**WHY I DID IT?**

Working in a data science project, having a more surface level understanding of data analysis, I wanted to work in an environment where I could both learn something new and offer the differing perspective of my commerce degree to the project. Not only that, I understand how crucial data analysis is today, and was curious as to how it could be operationally understood, transformed, and utilised. I used Viya because although it was of recommended use from SAS, it was a feasible platform that would allow me to effectively contribute work to the project. My use of Trello allowed me to contribute to keeping the team organised and manage changes in due dates and tasks. I found the project a great challenge and learning from my team-members was a very beneficial experience.

## WHAT WORKED?

The SAS Viya for learners platform was great. I was able to easily input, transform, and draw conclusions from the SSI, Kenya, and Rwanda data sets. The beauty of the platform was because I wasn't a data specialist, the ability to input data and instantly be given a visual output, I found to work well for me. Working on my findings section of Child Rights and Spiritual Strength, I thought it was going to be a struggle. With Viya's ease of use, I was able to produce data findings and draw conclusions on the impact of Zoe Empowers I thought quite easily. Using Trello, I was easily able to assign team-members to due tasks e.g. assigning Rory to a weekly report submission for week 6, he would receive an email to remind him it was due soon, and so would other team-members so they could add their individual parts in. This helped mitigate the risk of late submissions. Our use of weekly meetings and team workshops across the semester were fantastic. Each meeting/workshop we were able to collectively break down the project further, and really click as a team to discuss what we were aiming to achieve each week, building to our final product.




(Example of how Trello integrated our resources, and allowed the team to track completed and upcoming tasks)

## WHAT SHOULD HAVE BEEN DONE DIFFERENTLY?

Overall, I thought our progression through the project was great, however, some tweaks along the way would have benefited the team. I think clearly defining what SAS expected/wanted from us earlier in the semester would have afforded us more time to develop a deeper narrative as we progressed. Furthermore, our use of Viya for learners perhaps began a bit later in the semester than we expected, where jumping into its use earlier could have strengthened the team's use of the platform, and produced both broader and stronger analysis and findings.

## 8. CONCLUSION

The project to help Zoe Empowers determine the effectiveness of its humanitarian intervention program was a fantastic opportunity for our team to gain industry experience. It allowed us to put our project management, teamwork, and professional ethics into practice, which was an incredible learning experience. We used the Agile Methodology to ensure we could adapt to changes in the project scope, and we employed iterative planning and continuous integration to keep everything on track. Communication and collaboration were vital. Therefore, we made it a point to hold regular meetings with the team and sponsors to keep everyone on the same page. We assigned each member specific roles and ensured everyone had an equal share of the workload. For instance, we each investigated two categories of the SSI, breaking down the project into manageable parts to examine each aspect in detail. Therefore, we could dig in and find interesting points to analyse and discuss which category of the SSI is working well and which one needs improvement. The project's success is a testament to our ability to apply principles, models, tools, techniques, technology, and processes to solve the client's problem. Overall, the Zoe Empowers project allowed us to use our knowledge and skills in a real-world context, which was a valuable experience. We are proud of the outcomes achieved and the impact we have made, and we look forward to continuing our journey as lifelong learners in the field of data analytics and project management.