NLP Report - 1

Group - 6

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Introduction

The primary objective of this assignment was to leverage Large Language Models (LLMs) and other advanced NLP techniques to enhance the interpretability and accessibility of welfare scheme documents through automated summarization and visualization. Our project entailed generating concise and informative write-ups for each scheme, developing effective image prompts, and creating relevant visual representations of the schemes using DALL-E 3. By implementing various iterations and approaches, we aimed to improve consistency, readability, and clarity across textual and visual outputs. Additionally, we evaluated the effectiveness of different transformer models (e.g., T5 and Pegasus) to summarize welfare scheme content accurately.

Task 2: LLM Writeups

For this task, our objective was to produce three targeted write-ups for each welfare scheme file. We implemented this process in a Python notebook to automate prompt generation and output the required sections for each welfare scheme. Using gpt-4o-mini API, we then generated write-ups for each scheme description file.

The process involved two main steps:

- 1. File Processing: We accessed each text file in a specified directory and read its content.
- 2. Prompt Generation: For each file, a prompt was generated using a function that constructed specific instructions based on the requirements for the three write-ups. Each prompt explicitly detailed the information to include in each section, with a reminder to retain all relevant details from the original file content.

Verification of Completeness of Write-ups

To ensure the completeness of the write-ups generated by the LLM, we followed a practical, hands-on approach as outlined below:

- 1. Manual comparison:
 - Given that each scheme document was relatively short (approximately 10KB), we manually reviewed the original scheme text, identified key points and wrote each write-up ourselves. This allowed us to create a reference for what should be included in each write-up. We manually compared the write-ups to ensure that no significant information was omitted.
- 2. Cross-evaluation:
 - To further ensure the completeness of the write-ups, we discussed the content among ourselves. Each team member was assigned to review one writeup, and we cross-checked each other's work.
- 3. Inclusion of ChatGPT for Additional Judging:

 To ensure we did not miss anything, we involved ChatGPT to act as one of the "judges"

 (although it was gpt-4o-mini which generated the writeup) for the completeness of the

 write-ups. After we reviewed the write-ups manually, we provided ChatGPT with both the

original scheme text and the generated write-up. ChatGPT was asked to identify any discrepancies or any missing information.

Comprehensiveness:

- Strengths: The write-ups cover the major aspects of the scheme problem, process, outcomes.
- Weaknesses: Some important details are omitted, especially in describing the specific
 challenges faced by beneficiaries, the exact steps in the application process and/or the
 beneficiaries. In one example, the LLM misses the broader scope of the scheme's
 impact (e.g., the local economy) and focuses only on crop yields and financial stability.
 This narrows the overall effect of the scheme. In another example, the LLM describes
 the beneficiaries, but fails to provide the concrete rules for identifying them..

Clarity:

- Strengths: The language is simple and direct, making the write-ups easy to understand.
- Weaknesses: In some places, the explanation could be more specific to enhance clarity.
 The LLM sometimes oversimplifies and cuts out critical information. In an example, it
 doesn't mention the form's specific details (personal and farm-related information), which
 could leave applicants confused.

Task 3: Transformer Summarization

We experimented with transformer models of varying sizes and configurations, specifically using T5-small, T5-base, T5-large, Pegasus-xsum, and Pegasus-cnn_dailymail, to determine which model performed best for question answering or summarization tasks on our dataset.

Experiment 1: Multi-Question Answering with Joined Responses

In the initial approach, we provided the data to the model, asked each question separately, and then combined the three individual answers to evaluate the BLEU score. Here are the configurations and results:

Model	Input tensor	Beams	Output tensor	Avg. Bleu Score
T5-Small	512	4	150	0.03581
T5-Small	512	4	175	0.03581
T5-Small	512	8	175	0.03581

T5-Base	1024	8	175	0.02862
T5-Base	1024	16	175	0.03605
T5-Base	2048	8	175	0.02704
T5-Base	4096	5	175	0.02867

The BLEU scores were relatively low, and responses did not vary based on prompt position, grammar, or formatting. This indicated that the model might not be differentiating between the individual questions effectively.

Experiment 2: Single-Prompt Answering

To address this issue, we switched to a single-prompt format, asking only one question to see if this approach improved response quality and BLEU score.

Model	Input tensor	Beams	Output tensor	Avg. Bleu Score
T5-Large	512	default	default	0.02095
T5-Large	4096	default	default	0.04397
T5-Large	4096	5	1024	0.14058
T5-Large	4096	4	2048	0.14058
T5-Large	8192	4	2048	0.14058

With T5-Large, we observed better responses and a higher BLEU score, particularly with increased input tensor size and beam search configurations. The answers were more relevant and detailed, supporting the model's effectiveness in a single-prompt setting.

Experiment 3: Multi-Question Format with T5-Large

Since T5-Large generated high-quality answers, we reverted to the original format of asking three questions separately and combining the answers.

Model	Input tensor	Beams	Output tensor	Avg. Bleu Score
T5-Large	8192	4	2048	0.10538

While T5-Large provided satisfactory results, the model continued to yield the same answer for each question, indicating a lack of question differentiation.

Experiment 4: Direct Summarization

To address the repeated responses, we asked the model to generate a summary of the entire dataset.

Model	Input tensor	Beams	Output tensor	Avg. Bleu Score
T5-Large	8192	4	2048	0.00726
T5-Base	2048	8	2048	0.05384
Pegasus-xsum	512	4	50	0.05384
Pegasus-xsum	512	4	200	0.05384
Pegasus-xsum	512	8	500	0.05384
Pegasus-cnn_dailymail	1024	8	500	0.01764
Pegasus-cnn_dailymail	1024	16	500	0.01764
Pegasus-cnn_dailymail	1024	16	2000	0.01764

Conclusion:

T5-Base emerged as a suitable model for direct summarization, given the BLEU score performance and its ability to handle larger input tensor sizes (2048 vs. 512 for Pegasus-xsum).

Task 4,5: Image Prompt Generation and Improvement

Initial Approach: Prompt Generation and Character Inconsistencies

We began by manually splitting the three write-ups generated by GPT-4o-mini and saving them in separate files, labeled with suffixes such as "problem_statement," "application_process," and "impact" to clearly indicate their purpose. For each file, we crafted prompts tailored to the specific section of the welfare scheme described:

- Problem Statement: Prompts focused on illustrating the challenges faced by beneficiaries before receiving support.
- Application Process: Prompts depicted the enrollment process, including elements such as required documents and registration.
- Impact: Prompts portrayed positive outcomes of the scheme, highlighting improved living conditions and community support.

This initial approach produced decent results but revealed inconsistencies, particularly with character portrayal. Characters were often male-dominated, which did not align with our aim for diverse representation.

Second Iteration: Introducing Gender Diversity and Narrative Consistency

To address the inconsistencies, we adjusted the prompt format to introduce a balanced portrayal of both genders. For instance, we included characters like "Shweta the housewife" alongside "Raju the farmer" when appropriate. Additionally, we incorporated the content from previous prompts to ensure continuity in the storyline and character representation across the series of images.

This revised approach led to notable improvements in coherence, as characters and narrative elements remained consistent across prompts. The images more accurately represented the progression of the welfare schemes, capturing a clear narrative from the problem statement to the application steps and the resulting impacts.

Third Iteration: Structured Prompts for Improved Consistency

In an attempt to further refine consistency, we experimented with adding a more structured format to the prompts. Each prompt was segmented into sections, such as:

- Scene Concept
- Characters
- Setting
- Elements to Include
- Mood
- Any other section deemed necessary

We hoped this format would standardize the prompt outputs and enhance the quality of imagery. However, this structure did not yield improvements. In some cases, the model (GPT-4o-mini) deviated from the structured sections. Overall, this resulted in images that were subjectively less relevant and impactful compared to the previous iteration.

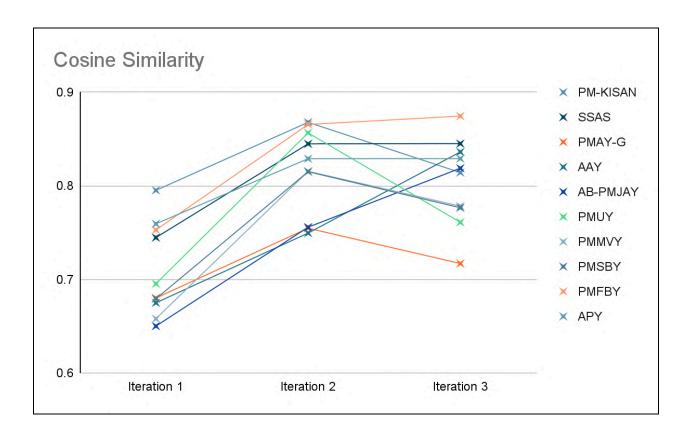
Consistency and Readability Metrics

We developed an comprehensive evaluation module to grade the sets of 3 image prompts for each of the 10 schemes. The metrics employed consist of the average pairwise cosine similarity

between the image prompt embeddings, the prompt lengths to evaluate consistency in prompt generation, the Flesch Reading Ease and Gunning Fog readability scores, and the lexical diversity scores to indicate the level of detail of each prompt. In addition to these quantitative metrics, we also visually confirmed consistency of characters and themes across the prompts for each scheme, as well as for readability of the prompt contents. The detailed metrics of the final iteration of the image prompts of all the 10 schemes can be viewed in the submitted notebook.

Following is a table that shows the variation in the average pairwise cosine similarity and average Gunning Fog readability score across prompts for each of the 10 schemes.

Scheme	Average Cosine Similarity (iter1, iter2, iter3)	Average Gunning Fog Score (iter1, iter2, iter3)	
PM-KISAN	0.7952, 0.8679, 0.8142	15.37, 14.25, 14.79	
SSAS	0.7447, 0.8449, 0.8451	16.47, 16.52, 16.56	
PMAY-G	0.6801, 0.7547, 0.7170	14.51, 15.18, 14.66	
AAY	0.6750, 0.7495, 0.8362	16.24, 16.25, 17.06	
AB-PMJAY	0.6501, 0.7558, 0.8188	15.95, 15.13, 16.71	
PMUY	0.6954, 0.8566, 0.7610	16.24, 14.44, 14.75	
PMMVY	0.6580, 0.8155, 0.7783	14.30, 17.59, 16.06	
PMSBY	0.6793, 0.8151, 0.7766	14.52, 15.39, 13.11	
PMFBY	0.7529, 0.8656, 0.8745	16.11, 17.51, 16.77	
APY	0.7594, 0.8290, 0.8291	14.99, 14.88, 14.62	



Conclusion:

Ultimately, we opted to proceed with the second iteration, as it provided the best balance of character consistency, thematic relevance, and quality in the generated imagery. This iteration effectively portrayed the essence of each welfare scheme with coherent, diverse characters and a clear narrative flow across the problem, application, and impact phases.

Cosine similarity scores for our image prompts increased steadily from iteration 1 to iteration 2, then stabilized or slightly decreased in iteration 3, meaning that iteration 2 prompts captured the relevant information optimally.

Token lengths generally increased from iteration 1 to iteration 2 which was beneficial for image alignment, as the additional tokens likely provided context that improved the visual output's relevance. However, in iteration 3, some schemes showed an even further increase which contributed to challenges in maintaining conciseness and clarity due to the increased verbosity. Lexical diversity saw a slight decrease in iteration 2 compared to iteration 1 which suggests that this version achieved a balance, using focused and purposeful language to retain relevant information without unnecessary variation.

Flesch Reading Ease scores were moderately lower in iteration 2, which generally indicates slightly more complex language. However, this complexity led to enhanced precision, adding context essential for effective image generation.

Across iterations, the Gunning Fog scores remained high, but this was necessary to convey the themes of the source material effectively, and capture relevant details in the prompts. All these factors aided our decision to choose the second iteration prompts for submission.

Task 6: Images

After experimenting with various prompts and refining our approach, we used DALL-E 3 to create images based on our final prompts. Below are examples of some of the images created.

1. Sukanya Samriddhi Account Scheme

Prompt 1:

Image Generation Prompt:

Create an illustration depicting a rural setting that showcases the challenges faced by families, particularly focusing on a worried father, "Raju," who is sitting on a small, weathered wooden bench outside his modest home made of mud bricks. The surroundings feature lush, green fields that symbolize potential but also reveal the hard work that goes into farming.

In the scene, Raju looks contemplative and distressed, gazing towards a small, open notebook in his hands where he jots down educational expenses for his daughter. Nearby, a modest kitchen garden is visible, with sparse crops and limited resources that reflect their financial struggles.

Include a small child, his daughter, playing with a worn-out doll nearby, which underscores the family's hope for a better future. In the background, depict a simple village landscape with a few other homes, a distant school building, and a cloudy sky, symbolizing uncertainty.

The overall mood of the image should convey a sense of worry and the need for financial security, illustrating the looming educational challenges that families face before the support of the Sukanya Samriddhi Account Scheme.

Prompt 2:

Image Generation Prompt:

Create an illustration that captures the application process for the Sukanya Samriddhi Account Scheme, set in a bright and welcoming government office. The main character, Raju the farmer, is present and engaging with

a friendly government official at a registration desk. Raju is portrayed as hopeful and eager as he navigates the process to secure a financial future for his daughter.

At the registration desk, Raju is filling out the application form (Form-1) while holding his daughter's birth certificate in one hand. The required documents, including an Aadhaar card, bank passbook, and the completed application form, are visibly spread out on the desk in front of him, emphasizing the necessary steps for the application.

The government official, with a warm smile, is assisting Raju by pointing to the information on a digital device, illustrating the assistance provided during the process. The office space is bright with natural light, filled with posters promoting the Sukanya Samriddhi Account Scheme, creating an atmosphere of encouragement and support.

In the background, other families can be seen engaging with staff, highlighting the accessibility of the application process. The scene embodies a sense of community and the positive impact of the scheme, reinforcing the message that families are empowered to secure their daughters' futures through savings and education.

Prompt 3:

Image Generation Prompt:

Create an illustration that highlights the positive impact of the Sukanya Samriddhi Account Scheme in a rural village setting, showcasing a joyful celebration of educational achievements. In the foreground, Raju, the father from previous illustrations, is seen proudly presenting a certificate or a report card to his daughter, who has just completed her higher education. His face radiates pride and happiness, symbolizing the successful outcome of their savings journey.

The daughter, dressed in a simple yet elegant graduation gown, is standing beside Raju, holding the certificate close to her chest with a beaming smile, indicative of hope and future opportunities. In the background, their modest home and flourishing kitchen garden are visible, symbolizing the progress and stability gained through the scheme.

Surrounding them are various village friends and family members, clapping and celebrating together, emphasizing community support and shared joy in this milestone. The village has a vibrant atmosphere, with decorations such as colorful flowers and banners that read "Congratulations!" and "Future is Bright!" to depict a festive spirit.

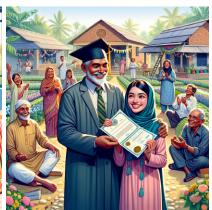
Include elements of agricultural success, like harvested crops being displayed, illustrating the farm's contribution to their newfound education funding. The sky above is clear and sunny, representing optimism and a bright future ahead.

Overall, the image should convey a strong sense of accomplishment, unity, and the transformative power of the Sukanya Samriddhi Account Scheme, showcasing how it enables families to invest in their daughters' dreams and aspirations.

Generated Images:







Evaluation:

- Coherence Scores:

Image 1: 4/5 The image accurately depicts Raju in a rural field, though the expression could be more pronounced. The cloudy sky's effect is overshadowed by the sunny weather.

Image 2: 3/5 The image does not show Raju filling the form. Instead, the girl seems to be filling the form - however this could also convey the ease of signing up for the scheme.

Image 3: 4/5 The feeling of the image is conveyed, but instead of the girl, Raju is seen wearing the graduation gown. One interesting detail is that Raju seems to have gotten older when his daughter graduates.

- Consistency Score: 5/5

Raju and his daughter are consistently depicted across images.

- Comments:

Overall, the images effectively represent the prompts. The text-to-image model performed well in maintaining character consistency, with slight variations likely due to model and prompt limitations.

2. Antyodaya Anna Yojana

Prompt 1:

Image Generation Prompt:

Create an illustration depicting the challenges faced by beneficiaries of the Antyodaya Anna Yojana scheme in a rural Indian setting. Feature 'Raju the Farmer' standing in front of a small, modest house with a worried expression, surrounded by sparse crops and a barren field that highlights his financial struggles.

In the background, include glimpses of the rural landscape: a couple of other simple houses, a few scattered farm animals, and a distant view of dry fields that emphasize the scarcity of resources.

Capture the essence of food insecurity by showing an empty kitchen with minimal cooking utensils and no food supplies visible. Raju should appear contemplative, symbolizing the burden of providing for his family, with his worried face reflecting the urgency of the situation before the scheme's support.

Integrate subtle elements like a ration card in his pocket to symbolize hope for assistance, and maybe a fading sun setting in the background, representing the challenges of day-to-day living and the struggle against poverty.

Prompt 2:

Image Generation Prompt:

Create an illustration showcasing the application process for the Antyodaya Anna Yojana scheme in a government office setting. Feature 'Raju the Farmer' at a registration desk, looking hopeful and determined as he fills out an application form on a digital device. The desk should be equipped with a friendly government official, assisting Raju with a warm smile, promoting a sense of community support.

Highlight essential documents around Raju, such as an Aadhaar card, a bank passbook, and the application form, visibly placed on the desk. The environment should reflect a simple rural government office, with posters about the Antyodaya Anna Yojana on the walls and charts displaying food grain subsidies.

Integrate elements that signify accessibility, such as a waiting area with other individuals engaging with staff or utilizing tablets for online

applications, illustrating the dual application methods (both online and offline).

Capture the essence of hope and assistance in the scene, demonstrating the transformative impact of the application process for families like Raju's. Make sure Raju's expression conveys a sense of optimism as he takes this significant step towards enhancing his family's food security and well-being. The lighting should be bright and welcoming to symbolize the positive change the scheme could bring to his life.

Prompt 3:

Image Generation Prompt:

Create an illustration depicting the impacts and outcomes of the Antyodaya Anna Yojana scheme in a vibrant rural Indian setting. Feature 'Raju the Farmer' and his family, including his elderly mother and his children, joyfully sharing a meal together on a hand-woven mat outside their modest home. Capture the essence of food security as they enjoy a nutritious meal made from rice and wheat, symbolizing the benefits they receive from the scheme.

In the background, include details of a flourishing farm with lush green crops, illustrating the positive change in their livelihood due to the assistance from the Yojana. Raju should have an expression of relief and contentment, embodying the joy of providing for his family now that food is no longer a daily worry.

To emphasize community support, incorporate other families from their village in the background, sharing meals or engaging in cheerful conversations, illustrating the sense of togetherness fostered by the scheme. Add symbolic elements such as a large, colorful banner promoting the Antyodaya Anna Yojana, and an AAY ration card prominently displayed on the mat, representing the tool that has unlocked their access to essential food grains.

Ensure the environment is filled with bright colors and warm lighting, denoting a hopeful and thriving community life. The scene should encapsulate the transformative power of the Antyodaya Anna Yojana in alleviating hunger and uplifting the socio-economic conditions of impoverished families.

Generated Images:







Evaluation:

- Coherence Scores:

Image 1: 5/5 The image accurately depicts Raju in a drought-affected field, including the minor details like ration card in his pocket.

Image 2: 4/5 The image clearly shows Raju filling the forms and the background details shown accurately. The only problem is the change of art style.

Image 3: 4/5 The farm is lush, and Raju is smiling and details are accurately made, but some details like the big rice plate does not seem to indicate a family dinner. Change of art style.

- Consistency Score: 4/5

Raju is moderately consistently depicted across images, but variations in appearance exist. In the last image, Raju appears fairer than the earlier images.

- Comments:

Overall, the images effectively represent the prompts. The consistency could be improved by adding a solid description of the main character - Raju. Prompt should also choose one art style and stick with it.

3. Pradhan Mantri Matru Vandana Yojana

Prompt 1:

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### Image Generation Prompt
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Title: Struggles of a Rural Mother under PMMVY

Scene Description:

Illustrate a poignant scene in a rural Indian village, focusing on the character **Shweta**, a pregnant woman in her late twenties, embodying the struggles highlighted in the Pradhan Mantri Matru Vandana Yojana. The background should feature simple mud houses with thatched roofs, a small farm with sparse crops, and dusty pathways typical of rural India.

Character Details:

Shweta is wearing a colorful but worn saree, depicting her modest economic status. Her expression should convey worry and concern, emphasizing her hardships. She is seated on the ground with her hands on her belly, looking pensive, surrounded by a few children who are playing with simple toys made from local materials, reflecting the challenging environment they live in.

Visual Elements:

- In the background, show agricultural fields that appear dry or unkempt, symbolizing the financial strain and underemployment faced by families in the area.
- A small, unadorned cooking area with minimal utensils should be visible, representing the scarcity of resources.
- Include elements that suggest a lack of access to proper healthcare, such as an unattended first-aid kit or a stack of medical brochures lying nearby.
- The overall lighting should be warm yet slightly dim, symbolizing both hope and the pressing struggles of the characters.

Emotional Touch:

Convey a sense of resilience despite the challenges. While Shweta's expression reflects concern about finances and the well-being of her and her unborn child, there should be a subtle hint of strength in her posture and presence, indicating her determination to seek better support.

This scene encapsulates the multifaceted issues faced by beneficiaries like Shweta under the PMMVY scheme and sets the tone for the positive change that the initiative aims to bring.

Prompt 2:

Image Generation Prompt

Title: Application Process for PMMVY

Scene Description:

Capture a moment in a vibrant rural government office where **Shweta**, the pregnant woman from the previous image, is engaged in the application process for the Pradhan Mantri Matru Vandana Yojana (PMMVY). The setting

should be a simple yet inviting government office, with posters displaying health information and PMMVY details on the walls.

Character Details:

Shweta is seated at a registration desk, wearing the same colorful but worn saree, which symbolizes her modest economic status. Her expression shows a mix of hope and determination as she interacts with the official.

Visual Elements:

- On the desk, prominently display a stack of required documents including an **Aadhaar card**, **bank passbook**, and **application forms**.
- The government official, a friendly woman in formal attire, is assisting Shweta with a warm smile, showcasing helpfulness and accessibility of the process.
- A digital device, such as a tablet or computer, should be visible with the registration page on screen, indicating the modern approach to applications.
- Include additional elements that evoke a sense of community and support, like other women in the background discussing similar issues or completing their applications.

Setting Elements:

- The office should have large windows allowing natural light to flood in, symbolizing transparency and hope.
- Include rural motifs, such as village maps or photos of healthy mothers and children on the walls, promoting the initiative's benefits.

Emotional Touch:

The composition should encapsulate a sense of empowerment and hope. While Shweta's focus is on completing her application, her posture and expression convey confidence and determination to secure better support for herself and her child. The atmosphere should be warm and inviting, celebrating the positive change that the PMMVY aims to bring to women like her.

This scene illustrates the proactive steps taken by beneficiaries like Shweta in accessing support through the PMMVY scheme, emphasizing both the challenges faced and the optimistic journey towards better health and well-being.

Prompt 3:

Image Generation Prompt

Title: Celebrating the Benefits of PMMVY

Scene Description:

Illustrate a joyful and uplifting scene in a rural Indian village, showcasing **Shweta**, the pregnant woman portrayed in previous images, celebrating with other women from the community as they gather to share their success stories after receiving benefits from the Pradhan Mantri Matru Vandana Yojana (PMMVY). The background should feature a vibrant community scene with colorful decorations such as flowers and banners celebrating motherhood and girl children.

Character Details:

Shweta is now joined by several other pregnant and lactating mothers, all dressed in bright, traditional sarees reflecting their cultural heritage. Their expressions should convey happiness, relief, and a sense of empowerment. Shweta, cradling her baby bump with one hand and holding a small cash incentive envelop with the other, is in the center, radiating hope.

**Visual Elements: **

- A simple but festive food spread should be visible, symbolizing shared joy and community support, with items like fruits and local delicacies laid out on woven mats.
- Include intricate decorations made from local materials, such as handmade rangoli or torans, depicting the occasion of celebrating motherhood.
- Showcase a small group of young girls happily playing nearby, emphasizing the positive impact of the scheme on improving the societal perception of girl children.
- In the background, illustrate supportive husbands or family members who are participating in this community celebration, reinforcing the theme of family unity and shared happiness.

Setting Elements:

- The scene should be bathed in warm sunlight, creating a bright and cheerful atmosphere that symbolizes hope and positivity.
- Include elements of rural life, like lush greenery, small farm animals, and colorful flora, to indicate a thriving environment supportive of maternal health.
- Banners or posters in the vicinity that read supportive slogans like "Empowering Mothers, Nurturing Girls" should help convey the impact of the PMMVY initiative.

Emotional Touch:

Capture the essence of celebration and community empowerment. While Shweta leads the joyful gathering, her face shines with gratitude and pride. The collective vibe should embody resilience and mutual support, illustrating how the PMMVY scheme has transformed their lives, fostering a strong sense of community and celebrating the value of every child, especially girl

children. This scene encapsulates the positive change and hope instilled in beneficiaries through the PMMVY initiative, showcasing how it uplifts families and communities alike.

Generated Images:







Evaluation:

- Coherence Scores:

Image 1: 5/5 The image accurately depicts Shweta in her miserable conditions, the expression can be seen through the image. The medical kit however looks like a sewing kit.

Image 2: 5/5 The image clearly shows Shweta filling her forms in a confident pose. The backgrounds are accurately represented. The saree is not the same, but could be fixed using concrete character description.

Image 3: 3/5 Shweta is seen celebrating, but several small things like celebration of girl child, envelope of money in one hand, and festive food spread are missing.

- Consistency Score: 4/5

Shweta is consistently depicted across images, but minor variations in appearance exist. Other faces appear distorted in most images.

- Comments:

Overall, the images represent the prompts well. Maybe face distortion can be improved by sticking to cartoon like art style (like in the previous scheme's 2nd image)

Observations:

The images generated by DALL-E 3 aligned well with our expectations in terms of both thematic accuracy and visual clarity. These visual outputs were evaluated based on criteria such as relevance to prompt, coherence of details, and consistency. However, we observed a consistent

limitation in the model's ability to produce legible text, in English, Hindi and other Indian languages. In many cases, the model generated distorted text rather than readable content, which impacted the visual clarity in areas where textual details were intended to be focal points. In the above examples, we can also observe that there are some inconsistencies in the art style, which will be improved in the next stage.