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Deriving the Current Sentiments and Issues Being Encountered by Work-From-Home (WFH) Employees in the Philippines

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ARTICLE INFO	ABSTRACT
	The influx of job seekers who have applied for work-from-home (WFH) jobs after the pandemic has shifted the expectations and needs of employees involved with online and freelance work. To better understand the shift within the industry, this study aimed to determine the current sentiments and issues being encountered by people involved in the post-pandemic WFH market with the use of Natural Language Processing (NLP) tools. A total of 11,868 posts and comments were collected from the social media platform Reddit for analysis. Sentiment analysis was first conducted using the NLTK VADER model. It was found that the overall sentiment of users towards WFH jobs was slightly positive, with a compounded score of 0.1905, showing that many employees still feel that the benefits of WFH jobs still outweigh the issues that they have been encountering in recent years. Topic modeling was then conducted using a Latent Dirichlet Allocation (LDA) model and it was found that the biggest concerns users had towards WFH jobs were "salary and compensation", "time management", "company policies and culture", "job stability", and "skills management". These issues highlight the need for better policies and government regulations towards WFH jobs, to ensure employees who do remote jobs will be protected by the same laws and regulations as traditional employees. The findings also highlight the need for better platforms for WFH employees to engage in personal and professional development, so that they can keep up with the ever-growing needs and requirements of remote jobs. **Keywords:** Social media, Work-from-Home, Machine Learning, Natural Language Processing, Sentiment Analysis, Topic Modeling.

INTRODUCTION

Many Filipinos from various fields and professions have embraced Work-from-Home (WFH) jobs and careers as a legitimate alternative to traditional Face-to-Face (F2F) jobs in an office or other physical workplace. With a mixture of full-time jobs, part-time jobs, and freelance work, the number of Filipinos who are in the WFH industry has become more common in recent years, especially with more Filipinos able to access online tools and WFH platforms [1]. While WFH jobs existed before the COVID-19 pandemic, this trend was greatly accelerated at the height of the pandemic, which forced many people to stay and work in their homes [2]. While the various restrictions and limitations put down during that time have been lifted, WFH jobs and workers in the post-pandemic era have continued to grow, as many Filipinos had experienced the benefits of hybrid and flexible work environments and would like to continue taking advantage of these benefits [3].

Many workers in other countries such as India have also embraced WFH jobs, where many international and western based companies tend to offshore many business processes and tasks as "gigs" to countries with lower salary costs. Part of this is seen as a way for these companies to cut costs but is also described as "impact sourcing". Impact

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sourcing is a major component and philosophy of the Business Processing Outsourcing (BPO) industry which focuses on employing people from socioeconomically disadvantaged areas or communities [4]. It is partly thanks to these factors that there has been a rise of WFH and hybrid style work options for Filipinos in recent years. On top of competitive pay, these WFH jobs provide Filipinos with opportunities to access jobs and work with companies they would otherwise not have the opportunity to [5].

To determine if the current state of WFH jobs is acceptable to WFH employees or requires substantial change, sentiment analysis can be used. Sentiment analysis is a process of analyzing large volumes of text data to determine if these express a positive, negative, or neutral sentiment. This is typically used in the field of Natural Language Processing (NLP) to understand the perceptions of users towards a certain topic or issue. This typically involved collected various posts, comments, and text data about a topic, and "scoring" the post based on its overall sentiment as positive, negative, or neutral. Once all text data has been scored and labeled based on the sentiment, the overall sentiment of the users can then be derived regarding a specific topic or issue [6]. As many users who are in the WFH industry also commonly interact with various social media platforms and online communities, many of their sentiments regarding their current WFH jobs are also posted online. Different types of posts, both purely textual and posts with accompanying images and special characters, are used by users to express their feelings towards their current state in their WFH careers. These can provide a great insight into how employees currently feel about their jobs and what might be done to improve their working conditions and sentiments [7].

Sentiment analysis has been used in analyzing the sentiments of various users with regards to other issues and topics with much success. One study looked at the sentiments of users with regards to the responses to the COVID-19 pandemic in past years. The study looked at over 178,000 tweets from the social media platform X/Twitter and found that many of the users at the time, around 51.97%, expressed positive sentiments towards the changes and disruptions caused by the COVID-19 pandemic. It was found that many users were hopeful and were looking at the positive aspects of the quarantine, such as getting to spend more time with family and being able to work from home [8]. Another study looked at sentiments of users towards skincare products. While many skincare companies and products have grown very popular in recent years, there have been many controversies regarding their use of harmful chemicals. This droves many customers to choose natural skincare products. The study looked at various reviews of natural skincare products along with the sentiments of these reviews. Based on dataset with 10,000 reviews, it was found that out of five identified skincare brands, one has the large number of positive sentiments, with 96% positive reviews [9]. These studies show the applicability of sentiment analysis in understanding the overall attitudes of users towards various topics. These show that sentiment analysis can be utilized to better understand what employees in the Philippines currently feel towards WFH jobs.

Topic modeling is another NLP tool that is used to discover the hidden thematic structures within a set of text data. It makes use of unsupervised machine learning techniques to identify keywords and group them under a "topic", which is a set of words which are commonly used together based on the given dataset. Similarly to sentiment analysis, it makes use of a set of text data, and categorizes them into documents, topics, and words. Simply put, a document can have multiple topics, and each topic is a distribution of words. These topics are then analyzed to determine what ideas or concepts are being expressed by users, and what keywords are linked to those ideas and concepts [10]. On top of analyzing the sentiments of users, utilizing topic modeling on a set of data provides additional insight into the reasoning behind the overall attitudes of users towards WFH jobs. As many users a likely to post some or all the reasons that they like or dislike their WFH jobs online, analyzing these posts and comments gives context to the reasons why users feel positively or negatively towards their WFH careers [11].

One study on topic modeling looked at the issues and concerns of users on the social media platform Reddit towards the COVID-19 pandemic, specifically COVID-19 vaccines. The study looked at the perceptions of users towards the COVID-19 vaccine and how it had been administered during the height of the pandemic. The study collected 18,000 posts and comments from thirteen (13) subreddits and analyzed a total of five (5) topics. It was found that the topics covered by many users included the distribution of the vaccine, safety concerns, efficacy of the vaccine, potential side effects, and information distribution of the vaccine [12]. Another study looked at topic modeling for business analytics to understand an organization's internal and external needs, and how these connected to their customers and partners. The study looked at a dataset containing around 260,000 8-K filings, containing various information given

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to shareholders. These were processed to determine what were the most common issues being tackled by various businesses, resulting in a total of twenty (20) topics. The top topic that was found was regarding loan arrangements, with other notable topics including legal issues, earning results, employment arrangements, and production outlooks [13]. These studies show the usefulness of topic modeling in understanding the specific needs and concerns of employees in the Philippines towards WFH jobs.

With these, sentiment analysis and topic modeling tools were utilized to understand the current sentiments and issues being encountered by employees in the WFH industry. This provided a current view of how workers feel about the current state of WFH jobs, along with their biggest concerns and issues that they are contending with. Understanding the sentiments and needs of WFH employees will allow businesses, government agencies, and policy makers to best address these through actions plans, policies, and initiatives that are relevant and align with what workers are asking for. It is with these objectives in mind that this study aimed to ascertain the overall sentiment and current issues being expressed by employees in the field of WFH jobs in a post-pandemic job market. Specifically, this study aimed to; (1) determine the current overall sentiment of employees towards WFH jobs, and (2) to specify the current issues and concerns being expressed by employees towards WFH jobs.

METHODOLOGY:

This study was conducted with the use of two Python libraries to scrape, preprocess, analyze, and derive the sentiments and topics from a set of social media data with the use of NLP techniques. Additional libraries and packages were also used for displaying and visualizing the results of the study. The first library that was utilized is the Natural Language Toolkit (NLTK), which is a popular NLP library for analyzing human language text data. It was chosen for its many tools for computational linguistics, creating corpora, and text tokenization. It also has many tools for multilingual analysis, which was critical for this study as data collected contained a mixture of English and Tagalog texts [14], [15]. The second library that was utilized is the Gensim library, an open-source Python library commonly used for topic modeling [16].

A. Data Collection

The dataset that was collected for the study was scraped from the social media platform known as Reddit. The platform was very accessible, which allowed the researcher to set up the required libraries and scraping tools to collect the relevant data for the study [17], [18], [19].

The researcher scraped a total of 11,868 posts and comments from four (4) subreddits, namely: "r/buhaydigital", "r/phcareers", "r/JobsPhilippines", and "r/Philippines". These were chosen as the most relevant subreddits for the study due to the demographics of the userbase along with the main topic of discussion of many of these subreddits focusing on online and WFH jobs. As many posts on these subreddit occasionally go off-topic, the researcher filtered the collected text by searching for keywords related to WFH jobs and online work platforms. Of the 11,868 posts and comments that were collected, 8067 were collected from "r/buhaydigital", 2887 were collected from "r/phcareers", 717 were collected from "r/JobsPhilippines", and 197 were collected from "r/Philippines".

B. Data Preprocessing

While a large amount of text data was collected for the study, not all of it was readily usable for analysis. Many of the collect posts and comments contained special characters, emojis, URLs, and other irrelevant data that was not needed for sentiment analysis or topic modeling. To address these imperfections and irrelevant data so that the data can be analyzed using NLP tools, the dataset needed to be cleaned first [20].

The collected text was processed by first removing all extra columns that did not contain relevant text data, such as the post ID, author, timestamp and score. After the extra columns were removed, next were special characters and symbols within the text itself, leaving only the raw text post and comment data. All text data was then changed to lowercase to ensure consistency in the analysis of the different posts and comments. The text was then tokenized so that analysis can be done on each individual word within a given post or comment. This would allow the models to read and analyze the text individually along with whole sentences [21].

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Many of the collected texts from the various posts and comments on Reddit contained a mixture of English and Filipino texts. To address this, a list of English and Filipino stop words was imported from the NLTK library to remove them from the dataset. Stop words were removed to improve the overall accuracy of the sentiment analysis and topic modeling, by focusing the processing of data on content words [22].

C. Data Analysis and Knowledge Representation

After the Reddit text data was cleaned and preprocessed, the dataset was then used for sentiment analysis and topic modeling with regards to employees in WFH jobs. Sentiment analysis was done with the use of the NLTK Valence Aware Dictionary for Sentiment Reasoner (VADER) model, which is a powerful pre-trained model used for classifying sentiment polarity. VADER analyses text by assigning a polarity score for positive, neutral, and negative sentiments. It also provides a single compound score which ranged from -1 to 1. The compound score is a normalized, weighted composite score of the sentiment for a given sentence or text. This model was utilized by the researcher for its proven sentiment analysis capabilities, allowing it to analyze and determine the sentiment of text without having to be trained and tested from scratch [23], [24]. The results of the sentiments were then exported and visualized using a table for easier evaluation and interpretation.

Topic modeling was done with the use of the NLTK and Gensim libraries. NLTK was utilized for preprocessing the data and building a corpus of the most frequently used terms and texts in the dataset. To analyze the topics of the collected Reddit text, a Latent Dirichlet Allocation (LDA) model was utilized from the Gensim library. One characteristic of LDA is that the number of topics needed to also be defined before analysis would start [25]. To determine the best number of topics based on the collected dataset, the topic coherence score was used. Specifically, the coefficient of variation coherence score was calculated for a range of different topic numbers. This was used to identify how many topics should be evaluated and derived for the study [26].

RESULTS

The 11,868 posts and comments that were collected from Reddit were marked as either positive, negative, or neutral, and were given an overall compound score. This was used to determine if the overall sentiment of a given piece of text was positive or negative. Separate positive, negative, and neutral posts and comments were also identified to determine what specific issues and factors led to the sentiment of the user. The number of positive, negative, and neutral posts and comments can be seen in Fig. 1.
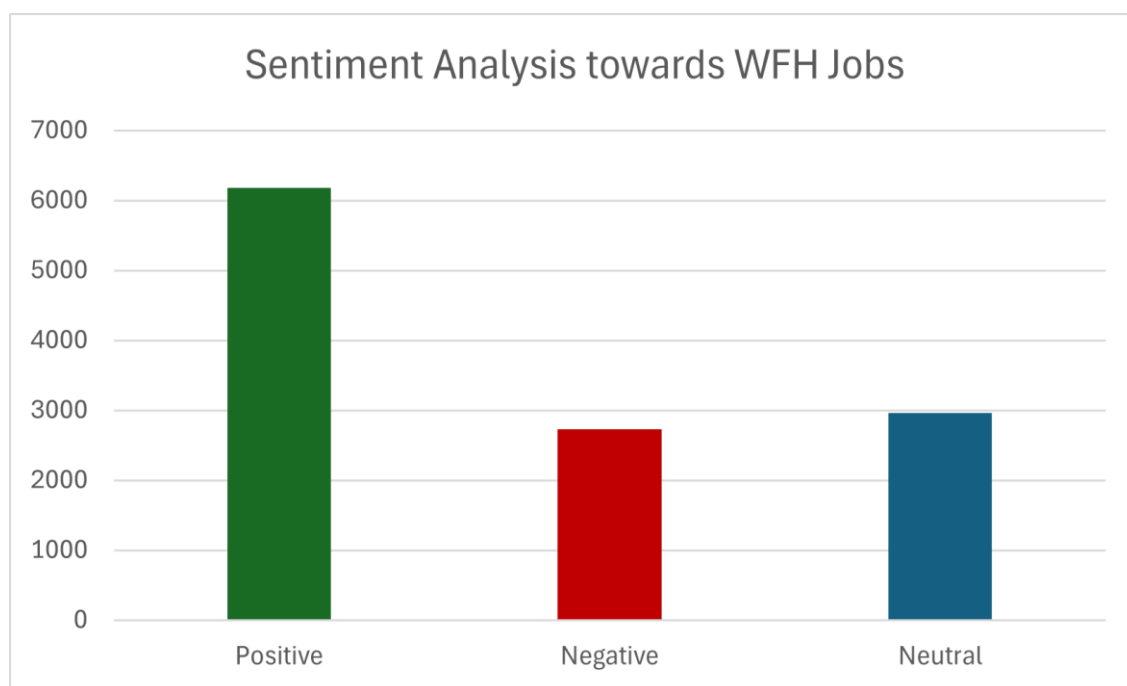
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Figure 1 Sentiment Analysis Results of Employees towards WFH Jobs

As seen on Fig. 1, most of the posts and comments that were collected have a positive sentiment towards WFH jobs, numbering at 6183 texts, followed by 2958 texts labeled with a neutral sentiment towards WFH jobs, and lastly followed by 2727 texts labeled with a negative sentiment towards WFH jobs. The compound score of all the sentiments expressed by WFH employees on Reddit was found to be 0.1905. This value, combined with the individual sentiments that were recorded indicates that the overall sentiment of employees towards WFH jobs is positive.

Table 1. Sample Positive Sentiment Text Data

Text Data	Compound Sentiment Score
been fully working from home since pandemic never felt lonely pa naman kahit may events like team building sa work di na rin ako nagjojoin nagsawa na umattend haha like you i kinda cutoff ties with college friends but i still have other close relatives and close friends i could share my stuff with kahit di madalas magkita siguro find someone you can chat with (kahit sending messages lang kase us introverts hate calls) and rant to important yung may napapagsabihan ka pag nayayamot ka na haha also don't be afraid of places with a lot of people they will be minding their own business and you'll be minding yours and di mo naman sila kilala so wapakels na	0.878
i don't feel lonely living by myself probably because of my furbaby yung routine namin keeps me occupied (kain sa umaga at hapon potty sa likod suklay laro ng habulan sa loob ng bahay etc) minsan namimiss ko din mag date but to the point na malulungkot ako ginagawa ko nalang na motivation para makabili ng sasakyan	0.8179
i chat with friends although unlike before na halos everyday may memes and chat replies ngayon from time to time nalang dahil busy din i go out and jog as well im also starting to add other exercise	0.6369
nkaka inspire ang mga stories ako ito nasa 130k per month as graphic designer for amazon sellers pero halos gusto na igive up ang online work dahil sa toxicity ng schedule pati dami ng projects i love my job pero i am at a point that i'm really tired and demotivated to put the same effort for 4 years with a single client tapos d ko kaya dumagdag kasi tad tad na ako sa work then dumadagdag pa sila ng ibang steps sa work process to make things better for them and only much worse for us designers i feel like i can't find a better or another premium client if i leave this one sorry parang naging rant na ang message ko pero medyo nabuhayan ako ng loob kaka basa lang dito sa thread na to sana maaabot ko rin yun mga exp ng mga tao dito i just feel so underpaid d ko nman mataasan ang rate ko (15usd/hr) ang daming client na ntatakot sa desired rate ko na 20usd may pag asa pa din pla mgkaroon ng mas better na client	0.8127
wfh since pandemic and my company didn't mind wherever i was so i moved close to the ocean my hobbies includes freediving surfing cruising around with a motorcycle and watching the sunset my life's been better since then	0.4404

As seen on Table. 1, five positive sentiments have been listed along with their associated compound sentiment score. Many of the positive sentiments discuss the benefits of working from home such as the higher pay along with the time spent with family and friends. Some of the comments also discuss the hobbies that users can get into due to their WFJ jobs.

Table 2. Sample Negative Sentiment Text Data

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Text Data	Compound Sentiment Score
im such an emotional person po pangalawang beses na po ito na na reject ako from online is this a sign to work on a hospital nalang po ba since nalilito ako if mag work ako as an rn with my license or with an online job para double pay	-0.9705
hindi naman po i never showed how vulnerable i am they like my performance pa nga and ive been receiving compliments from them mental health therapist intern po yung job ko sa kanila	-0.3257
yeesh again and again introvert does not equal mahiyain you have social anxiety introvert ako pero sobrang kapal ng mukha i taught theater in college i'm a business trainer now first sa pila ng buffet no problem presenting in front of clients doesn't get nervous during interviews huwag lang pakakantahin sa videoke i know my limits i've got my own self-realization when i conquered my social anxiety but it's a bit brutal and in-your-face so i get downvoted when i tell people about it	-0.7441
the bitter pill here op is that this is work and work hinges a lot on communication and collaboration no matter the extent gets naman na siyempre averse kayo sa social interactions but the first step to be "invisible" is to be very visible sa work ang mga "hermit" lang na nakawork ko ever are tenured ones mga nakapagcollaborate na nakaattend na ng sangkatutak na meetings at may napatunayan na enough para mag lay low pero as i've said there's no way to get around the video interviews the meetings and similar encounters ang first step niyo is to accept that work is communication and collaboration	-0.4565
more responsibilities more income you need to manage your time between work and your life otherwise it will lead to mental illness	-0.4019

As seen on Table. 2, five negative sentiments have been listed along with their associated compound sentiment score. Many of the negative sentiments focus on the mental health of employees, along with difficulties in adjusting with the requirements and responsibilities of WFH jobs.

Table 3. Sample Neutral Sentiment Text Data

Text Data	Compound Sentiment Score
pero ang hirap makahanap ng client sa upwork kung baguhan ka marami nang nauna at may ratings	0
naging stepping stone ko yung pagwork sa bpo tapos unang mga inapplyan ko is customer service	0
yun ang course supply chain sa coursera ko siya tinake nagooffer ang rutgers university ng online course sa supply chain nakita ko siya sa coursera	0
about 2 years ang rate ko nung bago pa lang ako is $4 an hour	0
hindi naman siya sine send sa clients record ng client document lang siya sa online and kami lang nakakakita non kung baga space lang sa title nung name yung kina kina ka g g niya	0

As seen on Table. 3, five neutral sentiments have been listed along with their associated compound sentiment score. Many of these texts in the neutral category focus on finding online work, the work requirements, work experience, and upskilling techniques.

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To determine the optimal number of topics for the topic modeling process, the coherence score was computed for a set number of topics, ranging from 1 to 40. This was chosen as the range to determine how many topics would be best utilized for the study. This resulted in two (2) topics having the highest coherence score of 0.6042, followed by five (5) topics with a coherence score of 0.5809, which can be seen in Fig. 2.
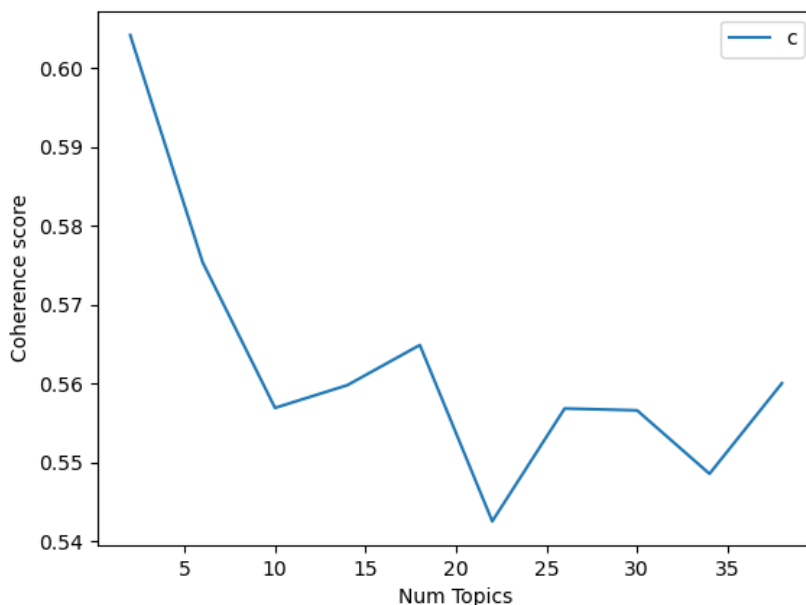

Figure 2 Coherence Score Trend based on the Number of Topics

The researcher chose five (5) topics for the paper for interpretation and evaluation. The five topics that were found are as follows: (1) salary and compensation, (2) time management, (3) company policies and culture, (4) job stability, and (5) skills management. These were derived based on the interpretation of the key topics and terms that were found under each of the respective topics. The sentiment analysis was then done with five (5) topics to determine what issues and concerns WFH employees have with their careers and jobs. Fig. 3 showcases the intertopic distance map, showcasing the topics that were generated through analysis of the collected reddit data. As seen in the figure, none of the topics overlap, suggesting that the topics generated are distinct in their subject matter.

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Figure 3. Intertopic Distance Map of Five (5) Topics

DISCUSSIONS

The results of the sentiment analysis of the collected Reddit data have shown that most users have a positive attitude towards WFH jobs even if there might be issues that they have with them. The compound sentiment score of the users towards WFH jobs was found to be 0.1905, which indicates a weakly positive outlook towards the current state of the WFH industry. These results are highlighted by the sample sentiment text data, showcasing that many users still have a positive view of WFH careers in general, while many of their concerns are focused on adjusting and adapting to the unique working environments of WFH jobs.

Some of the factors as to why many users still choose to engage with WFH jobs include the overall salaries and compensations that users can get in the industry. Many high skill and specialized positions online typically pay higher than local counterparts. Users prefer jobs which pay higher salaries as these can be used to pay down debts and other expenses, especially those that were incurred during the pandemic. Many of the users also claim to be breadwinners, which highlights the focus on getting better salaries to support themselves and their dependents [27]. This is supported by one study found that many Filipino workers who take on online work are typically highly skilled, are in their prime, and were married or cohabiting. Some workers were even found to have postgraduate degrees. When these online workers were surveyed, they mentioned that they chose to work online due to the higher pay, work flexibility, and their personal preferences. Working from home also made it easier for these professionals to find additional work, learn new skills, and save money on transportation and other expenses related to commuting to and from one's place of work [28].

Aligning with this, another study found that two parent and single parent households can take advantage of the benefits of WFH jobs to provide financial support without sacrificing time spent with family members and loved ones [29]. One other study also found that Filipinos who are unable to find local career opportunities that match their

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skills to look online for a larger pool of jobs that can give them better career opportunities. It prevents them from having to take jobs which might not fit their skill set due to fear of discrimination [30].

Another factor that was found in the dataset which likely contributes to the positive sentiment is the flexibility afforded by online jobs. Many users expressed their preference for having a flexible schedule, wherein they were not required to stay in a physical office for a full eight (8) hours during a regular work week. Users preferred to get their work done at irregular schedules throughout the day, in between their daily tasks and routines. Many users preferred this setup as they wanted to pursue additional professional work or business ventures with the inherent flexibility of many WFH jobs. Many users would find WFH jobs that were in a different time zone so that they would have the day to work on other responsibilities at home or even find a second job in another time zone that did not conflict with the previous job to earn more money. These align with findings conducted by previous authors during and after the COVID-19 pandemic [31], [32].

An additional factor that was found in the dataset that contributes to the positive sentiment of users was the increased time that users spend on other tasks and errands. Users appreciated the extra time they would gain by not commuting or constantly getting ready for work and coming home from work. Users were found to spend this gained time in different ways, such as upskilling themselves, using it for leisure activities, completing chores around the house, and spending time with family and friends. These activities were purported to reduce the overall stress level and improve the mental health of users [33].

These factors showcase the inherent benefits of WFH jobs which many users feel still outweigh the drawbacks of a WFH setup. Despite this, the relatively weak positive sentiment indicates that there is room for improvement in how WFH jobs are conducted, managed, and governed by company policies and government laws. There is a possibility that these issues will continue to impact the overall sentiment negatively if problems that employees encounter in the WFH industry continue to go unaddressed [34].

The topic modeling analysis that was conducted for the collected Reddit data derived five (5) key topics: (1) salary and compensation, (2) time management, (3) company policies and culture, (4) job stability, and (5) skills management. Five (5) topics were chosen over the two (2) topics that had the highest coherence score based on previous topic modeling studies that were analyzed. This was done to provide a balanced view of the issues that were being encountered by WFH employees [35]. Additionally, the coherence score of five (5) was still found to be high at 0.5809, indicating that the texts within each topic were still relevant to each other and would each provide a distinct subject matter for interpretation [36].

The first topic that was found in the analysis process was regarding "salary and compensation". This included discussions about benefits, overtime, pay schedules and payment methods for various WFH jobs. Users were most concerned about the compensation of their current or future WFH job, and many would frequently discuss methods to increase their pay or find alternative jobs with higher pay. They would compare their salaries with traditional jobs offerings in their area and would inquire if switching to a WFH job with higher pay was worth it. When discussing salaries, many would complain about delayed payments, inconsistent payment schedules, and even clients or employers sometimes not paying them at all. This shows that while WFH jobs typically give higher salaries than equivalent traditional jobs, the compensation process itself has issues that many users were frustrated with. This would lead to some users going back to traditional jobs for the stability and consistency of the compensation process, despite getting lower pay [37].

The second topic that was found is regarding "time management". Many users were concerned about how to handle working odd hours due to the different time zones of their clients and employers. Users would complain about online meetings being conducted late at night or early in the morning. Users disliked having sudden meetings or tasks given to them throughout the day with minimal prompt. This also included discussions on the boundaries of work time and personal time, when many users complained about feeling constantly on call throughout the whole day. Many users would lament never truly feeling "off the clock" with WFH jobs as their clients or employers would contact them at various hours throughout the day for additional tasks or meetings. These issues showcase the lack of consistent policies or company guidelines on how employee time should be treated for WFH jobs [38].

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The third topic that was found in the analysis was regarding "company policies and culture". Users were concerned about various company policies and programs at their respective jobs, not applying to remote employees. This meant that WFH employees would not enjoy the same benefits as the face-to-face employees in the same organization. Users would find that they were left out of incentives that their company would give out if they were a remote employee. Additionally, many users had trouble adjusting to the different work culture of companies in other countries. Employers and clients from other countries have different expectations of employees, which are not always the same with equivalent jobs in the Philippines. This shows the need for policies and programs to ensure WFH employees in the Philippines will be able to enjoy the full benefits of traditional face-to-face employment despite working online or freelancing [39].

The fourth topic found by the topic modeler was determined to be about "job stability". Many users, especially those who were freelancing, found that they would not always get consistent tasks and contracts from their employer or clients. Many users have found themselves placed on standby for long periods of time in between tasks or projects. While still technically employed by their company, they would usually get no pay or lowered pay when they were not actively working on any projects. Users who were already employed in online jobs would also question the longevity of the job itself, as many companies who hire WFH employees have a high turnover rate. Those who freelanced would experience similar issues, with many WFH freelancers claiming to go weeks or months without any jobs from clients and so having to find alternative sources of employment. These factors highlight the importance of worker protections and laws applying to WFH employees, especially with regards to unemployment [40].

The fifth and last topic that was found during analysis was "skills management". Many users were concerned with the various skills and certifications needed for their respective WFH jobs. Many of the posts mentioned upskilling to increase the overall skill level and knowledge of the employees, making themselves more marketable for better WFH jobs. From the perspective of employers and clients, WFH employees and freelancers are expected to train and upskill themselves with their own time and funding. Due to this, many users would state that they use the extra time they gained from the WFH job to learn new skills and knowledge related to their profession as these are common requirements for WFH careers. More experienced users would also often recommend online and paid certifications to other users. This was seen as a method to get higher pay and better jobs online as many overseas companies looked for employees with many certifications. These show the importance of providing better platforms and programs for employees in the WFH industry to develop their personal and professional skills to help advance their careers [41].

These topics showcase the needs and current issues being encountered by WFH employees in a post-pandemic world. The four topics, "salary and compensation", "time management", "company policies and culture", and "job stability" highlight the need for better laws and regulations that govern home based and remote jobs. Due to inconsistencies in the policies and regulations being applied to various WFH jobs, employees must navigate their way through different compensation plans, unclear work-life boundaries, diverse company cultures, and erratic client behavior to find stable income for themselves. Better government policies and regulations implemented by local and national policy makers will ensure WFH employees will be properly protected and benefit from updated labor laws [42], [43]. The three topics, "salary and compensation", "time management", and "skill management" also highlight the need to better programs for personal and professional development for WFH employees. Many employees who take on WFH jobs have encountered roadblocks due to the extensive qualifications required for specialized jobs. Thus, having platforms and avenues for upskilling and certifications will enable WFH employees to improve their overall portfolio for better jobs and career opportunities. As remote jobs do not typically offer the same level of training and learning opportunities that a traditional face-to-face job does, having easy access to training platforms and certifications will allow WFH employees to keep up with the rapidly changing and growing requirements that the industry has [44].

CONCLUSIONS

The study looked at 11,868 posts and comments that were collected from the social media platform Reddit for sentiment analysis and topic modeling. It was found that the overall sentiment of users was positive. This shows that many employees and users found WFH jobs to still be beneficial despite the issues they have encountered on the platform. Users expressed that the higher salaries, work flexibility, and additional available time were important

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factors that make WFH jobs highly desirable despite their drawbacks. While the sentiment is currently positive, if issues within the industry continue to go unchecked, it might start to outweigh the benefits of WFH jobs.

Upon modeling the topics of the collected texts, it was found that the five (5) topics derived from the text include "salary and compensation", "time management", "company policies and culture", "job stability", and "skills management". These were found to be the key issues and concerns encountered by users in their respective WFH careers. These issues showcase the need for better policies and government regulations towards WFH jobs, to ensure employees who do remote jobs will be protected by the same laws and regulations as traditional employees. These concerns also showcase the need of better platforms for WFH employees to engage in personal and professional development, so that they can keep up with the ever-growing needs and requirements of remote jobs and careers.

While the study focused on the social media platform Reddit for sentiment analysis and topic modeling, additional social media sites and platforms can be examined to get a wider view of the perceptions of employees towards the WFH industry. The sentiments of employees from different platforms can be examined and compared to determine if employees have similar issues and concerns with regards to WFH jobs. This will allow the results of the sentiment analysis to be validated.

The number of topics collected can then also be expanded to include other issues that were not covered in this study. This can help better inform policy makers and concerned parties about what problems WFH employees are currently facing. Topics can also be modeled for different platforms and cross referenced to check if certain issues are expressed in other platforms.

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