

# A Time Series Analysis Of My Girlfriend Mood

## A Time-Series Analysis of my Girlfriends Mood Swings

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### Abstract

Despite recent advances in active listening, date night, and extended pillow talk; it is becoming increasingly more difficult to forecast Tiffany's mood. With more and more Playstation 5 exclusive games, it is becoming increasingly important to determine Tiffany's mood before purchasing a new game and playing online Co-op with the boys every evening for a week straight. This paper aims to determine the optimal forecast model of my girlfriend's drastically growing mood swings by comparing simple moving averages, to sextuple exponential smoothing and even an overly complicated Machine Learning model. Despite initial analysis showing non-stationarity and highly seasonal mood swings, the more simple models provided less riskier forecast predictions when planning a three day bender after Matt got divorced.

Keywords: Relationships, Time Series Analysis, Forecast Modeling, Playstation 5 Exclusives

### 1. Introduction

Traditional methods of determining whether Tiffany is in a good mood has produced wildly subjective results causing dangerous outcomes such as her taking three hours to respond to a text, flaking on netflix and chill plans or even most disastrously having to return a speed boat even though it was a great deal and an even better investment.

Just asking her if she's okay is not enough anymore. The only reliable method is to develop, test, verify, and implement an extensive forecasting model by analyzing historical Tiffany mood swing data.

#### 1.1 Background

Tiffany and I met at Cranberry-Lemon University as sophomores in our BS required Theoretical Physical Education class ten years ago. After being the last two in the quantum particle dodgeball match, we began an on again, off again relationship until our Junior fall semester when it became too cold to go outside. She and I are two young professionals living in our own home which we financed using a downpayment from not eating avocado toast for three years while I finished my doctorate program.

Tiffany is now a freemium gaming marketing consultant who hates it when I call it freemium gaming. She loves Disney, prefers beach vacations over mountains, and was obsessed with Game of Thrones until the end of the last season. When she's not binge watching the office, you can

find her endlessly scrolling through reddit for memes, facebook or instagram for jealousy, and twitter to keep up on all the public officials and celebrities she hates the most.

#### 1.2 Purpose

Ever since her best friends started having kids and she got promoted to a stressful corporate position she was not trained for, it has become exponentially difficult to plan around Tiffany's emotional highs and lows. This is becoming not only problematic but is a problem that needs to be solved immediately. To dispel any misconceptions, it's not about avoiding her negative mood swings with asinine boyfriend behavior but also taking advantage of her positive mood swings for the least risky time to hang out with the boys or even more risky, refinance the house so I can get that boat back. Most importantly, there is one known application that has expedited the development of this forecast model. The Final Fantasy 7 remake will be released soon this June in under a month!

The amount of time it is expected to take to 100% complete the game, despite playing the original many times, must be carefully scheduled around a reliable Tiffany Mood Forecast Model (TMFM). Being able to plan around her mood will not only allow enough time to max out Cloud's stats but create more opportunities for other future video game releases while keeping Tiffany happy.

Initial analysis of historical screen time and purchase history data has shown that Tiffany's mood is not only

A time series analysis of my girlfriend's mood is a fascinating endeavor that combines the intricacies of human emotions with the rigorous methodologies of data analysis. Understanding mood fluctuations can provide insights into relationship dynamics, emotional health, and personal well-being. In this article, we will explore how to collect mood data, analyze it, and draw meaningful conclusions from the results. We will also discuss the implications of these findings on personal relationships and provide strategies for fostering emotional well-being.

# Understanding Mood and Its Importance

Mood refers to a temporary emotional state that can significantly influence behavior, decision-making, and interpersonal relationships. It encompasses a range of feelings, from happiness and excitement to sadness and irritability. For individuals in a romantic relationship, understanding each other's moods can enhance communication, empathy, and overall satisfaction.

Furthermore, recognizing patterns in mood can help identify triggers or stressors affecting emotional health. By analyzing mood over time, we can gain insights into both the individual's emotional landscape and the relationship dynamics at play.

## Data Collection Methods

To conduct a time series analysis of mood, we first need reliable data. Here are some methods to collect mood data effectively:

### 1. Daily Mood Journal

Encourage your girlfriend to maintain a daily mood journal. This can be a simple notebook or a digital app where she rates her mood on a scale (e.g., 1 to 10) and notes significant events or feelings associated with her mood that day.

### 2. Mood Tracking Apps

Several mobile applications are designed for mood tracking. These apps often allow users to log their mood, add notes, and even record contextual information, such as sleep quality or stress levels. Popular examples include:

- Daylio
- Moodfit
- Moodtrack

### 3. Weekly Check-ins

Set aside time each week to discuss and reflect on mood changes and significant events that may have impacted her feelings. This not only helps gather qualitative data but also fosters open communication.

# Data Organization and Preparation

Once the data is collected, it needs to be organized and prepared for analysis. Here are the steps to follow:

## 1. Data Structuring

Create a structured dataset, including columns for:

- Date
- Mood Rating
- Contextual Notes (events, stressors, etc.)

## 2. Data Cleaning

Ensure that the data is clean and free from inconsistencies. For instance, if a day is missing a mood rating, you can either omit that data point or fill it in based on surrounding days' ratings.

# Time Series Analysis Techniques

With the organized dataset, we can apply several time series analysis techniques to understand mood patterns.

## 1. Descriptive Statistics

Begin with basic descriptive statistics:

- Mean: Average mood rating over the period.
- Median: Middle value of mood ratings.
- Standard Deviation: Measure of mood variation.

These statistics provide a snapshot of her overall emotional state.

## 2. Visualization

Visual tools can help illustrate mood trends over time. Consider creating:

- Line Graphs: Plot mood ratings against dates to observe trends.
- Bar Charts: Show frequency of different mood ratings.

Visualization can highlight peaks and troughs in mood, allowing for easier identification of patterns.

### **3. Seasonal Decomposition**

If the dataset spans a considerable time (months or years), apply seasonal decomposition to understand:

- Trend: Long-term progression of mood.
- Seasonality: Regular patterns (e.g., better moods in summer).
- Residuals: Random fluctuations.

This technique reveals deeper insights into how external factors might influence mood.

### **4. Autocorrelation Function (ACF)**

Use ACF to examine the correlation of mood ratings with their past values. This helps identify if mood today is related to mood in previous days, which can indicate persistence or cycles in mood changes.

## **Interpreting the Results**

Once the analysis is complete, it's crucial to interpret the results thoughtfully. Here are some considerations:

### **1. Identifying Patterns**

Look for recurring patterns in mood ratings. Are there specific days of the week where mood tends to dip or rise? Are there particular events or stressors that consistently correlate with mood changes?

### **2. Emotional Triggers**

Analyze the contextual notes to identify potential triggers. This can help in understanding what contributes positively or negatively to her mood.

### **3. Relationship Dynamics**

Reflect on how your actions or external factors may influence her mood. Are there instances where your support has led to a noticeable improvement in her mood? This understanding can help strengthen the relationship.

## **Implications and Recommendations**

Understanding mood patterns through time series analysis can have significant implications for both individual and relational well-being. Here are some

recommendations based on the findings:

## **1. Foster Open Communication**

Discuss the findings with your girlfriend. This can open up a dialogue about emotional needs and how both of you can work together to create a supportive environment.

## **2. Plan Activities Around Positive Moods**

If the analysis reveals that her mood tends to improve on weekends, consider planning enjoyable activities during this time. Engaging in shared hobbies can strengthen the bond and enhance emotional well-being.

## **3. Address Negative Triggers**

If specific stressors frequently correlate with negative moods, work together to address these issues. Whether it's stress from work or personal challenges, offering support can mitigate negative impacts on her mood.

## **4. Encourage Self-Care Practices**

Promote activities that enhance emotional health, such as:

- Exercise
- Mindfulness and meditation
- Creative outlets (art, music)

These practices can help improve mood and emotional resilience.

## **Conclusion**

A time series analysis of mood is more than just a mathematical exercise; it's a pathway to understanding the emotional landscape of a relationship. By collecting and analyzing mood data, couples can gain insights into emotional triggers, communication patterns, and overall well-being. This knowledge can foster empathy, improve communication, and ultimately lead to a healthier, more fulfilling relationship. Remember, emotions are complex, and while data can provide insights, it's essential to approach the topic with sensitivity and care.

## **Frequently Asked Questions**

## **What is time series analysis in the context of tracking my girlfriend's mood?**

Time series analysis involves collecting and analyzing data points over time to identify trends, patterns, and changes in mood. This can help understand emotional fluctuations and their potential causes.

## **How can I collect data on my girlfriend's mood for analysis?**

You can collect data through daily mood logs, journaling, mobile apps, or even questionnaires that capture her feelings at different times of the day or week.

## **What tools can I use to analyze mood data?**

You can use software like Excel, R, Python (with libraries such as pandas and matplotlib), or specialized data analysis tools like Tableau to visualize and analyze the mood data.

## **What key metrics should I track in my girlfriend's mood analysis?**

Track metrics such as mood ratings (happy, sad, neutral), frequency of mood changes, patterns related to specific events or times, and any external factors like stress or sleep quality.

## **How can I visualize the mood data effectively?**

You can create line charts to show mood trends over time, bar graphs to compare mood frequencies, or heat maps to visualize mood changes throughout different days or times.

## **What are common patterns I might expect to find in the mood analysis?**

You may find patterns such as mood fluctuations related to specific days of the week, seasonal changes, or correlations with events like work stress, social interactions, or personal achievements.

## **How can I use the insights from this analysis to improve our relationship?**

By understanding her mood patterns, you can better support her during low periods, plan enjoyable activities during high moods, and improve communication regarding emotional needs.

# Can external factors significantly impact my girlfriend's mood trends?

Yes, factors such as stress from work, changes in sleep patterns, health issues, or significant life events can greatly influence mood, and identifying these can help in understanding her emotional state.

# How often should I update the mood data for effective analysis?

It's advisable to update the mood data daily or weekly to capture fluctuations accurately, allowing for a comprehensive understanding of her mood over time.

# What should I do if I notice concerning trends in her mood?

If you observe concerning trends, it's important to approach the topic gently, encourage open communication, and suggest seeking professional help if necessary, ensuring she feels supported and understood.

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