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Comprehensive Report on Social Media Engagement Analysis for Nigeria's Leading Digital Marketing Agencies

Introduction:

This report provides a comprehensive analysis of the social media data of Stanbic IBTC Bank. The main aim is to equip stakeholders with actionable strategies to help them augment digital engagement and foster meaningful interactions with their audience as a company.

Objective:

To equip and help stakeholders with actionable insights and strategies by unearthing actionable insights that could redefine the future of digital engagement. In this report, I present my findings from the analysis, majorly focusing on user engagement across various metrics and times of the day, week, month and year.

Key Aim:

To extract actionable insights that could redefine the future of digital engagement.

Analysis Focus:

The analysis emphasizes user engagement across various metrics:

Descriptive Statistics and Data Cleaning:

- Overview of the data, including the number of posts, unique values, missing values, and outliers.
- Methods and steps taken to clean and preprocess the data for analysis.

Platform Distribution Analysis:

- Analysis of the distribution of posts across different social media platforms.
- Insights into which platforms are most frequently used for posting and their respective engagement metrics.

Content Type Distribution:

- Analysis of the different types of content (e.g., photos, videos, links) shared across platforms.
- Insights into which content types are more prevalent and their engagement patterns.

Engagement Metrics Overview:

- A detailed breakdown of different engagement metrics like likes, shares, comments, and their distribution across platforms and content types.
- Analysis of top-performing posts based on these metrics.

User Behavior Analysis:

- Insights into user engagement patterns, such as when users are most active or which posts get the most comments or shares.
- Analysis of user feedback, comments, and their sentiment (positive, negative, neutral).

Correlation Analysis:

- Examination of the relationship between different metrics, such as likes and shares or comments and reach.
- Insights into which metrics are closely related and can influence each other.

Content Analysis:

- A deeper look into the themes or topics within the content that resonate most with the audience.
- Analysis of content attributes like length, hashtags, mentions, and their impact on engagement.

Sentiment Analysis:

- Definition and importance of sentiment analysis.
- Distribution of sentiments across various social media platforms.
- Insights from sentiment distribution across networks.
- Recommendations based on sentiment analysis.

Engagement Metrics vs. Sentiment:

- Analysis of likes, comments, and shares against sentiments.
- Insights derived from the metrics.
- Recommendations based on engagement metrics and sentiment.

Topic Modeling:

- Explanation of topic modeling and its significance.
- Distribution of topics across sentiments.
- Time series analysis of topic models.
- Post topics over time.

Temporal Analysis:

- Analysis of sentiments over the years.
- Sentiment trends over hours of the day.
- Recommendations based on temporal analysis.
- Recommendations and Actionable Insights:

Based on the analysis, recommendations are provided for content strategy, user engagement, and platform-specific tactics.

- Actionable insights that can be implemented to improve social media performance.

Visualizations:

- Various charts, graphs, and plots showcasing the distribution and trends in the data.
- Visual representation of the analysis to make the insights easily understandable.

Data Cleaning and Pre-processing Method:

- I began with data inspection to understand the structure and quality of the data from various platforms.
- I ensured all datasets had the same columns and then concatenated them into a single dataframe.
- I generated a detailed quality report displaying missing values, data types, and unique values.
- For data cleaning, I removed percentage signs and commas from certain columns and converted them to appropriate data types. I also defined and used functions to visualize the distribution of numeric columns and remove outliers.

Handling Missing Values:

- I visualized missing values using a heatmap.
- For certain columns, I used conditional imputation based on categories, like filling missing Impressions based on the Network category.
- For other columns, I used mean and median imputation.

Convert Data Types:

- I converted columns with percentage signs and commas to float data type.
- I also converted several columns to integer data type using the `pd.to_numeric` method.

Remove Duplicate Entries:

- I checked for duplicates in the concatenated dataframe and confirmed there weren't any.

Exploratory Data Analysis (EDA):

- I grouped the data by certain columns to explore summarized data.
- I visualized the distribution of numeric columns and removed outliers.
- I examined unique values of certain columns and dropped columns that might not have been relevant for analysis.

Interpreting Visualizations:

- I visualized the distribution of numeric columns using the `numeric_distribution_plot` function. While the actual plots aren't displayed here, interpreting them would provide insights into the central tendency, spread, and shape of the data.
- Further steps I did include text cleaning, tokenizing, and removing stopwords. Additionally, I also handled more missing values and dropped columns that may not have been relevant.

Feature Engineering

Date-Time Features:

- I extracted several features from the Date column:
- Year: The year the post was made.
- Month: The month of the post.
- Day: The day of the month when the post was made.
- DayofWeek: The specific day of the week, which can help in analyzing patterns on particular days.
- Hour: The hour when the post was published, which can be crucial in analyzing user engagement based on different times of the day.

These features provide insights into temporal patterns, such as which days or hours lead to higher engagement.

Text-Based Features:

- From the content of the posts, I derived:
- Word_Count: The number of words in the post, which can give insights into the length of the post and its correlation with engagement.
- Char_Count: The number of characters in the post. Longer posts might engage users differently compared to shorter ones.
- Avg_Word_Length: Average length of the words in the post. This might correlate with the complexity or clarity of the content.

These features can help in understanding how the length and depth of the content influence user engagement.

Sentiment Scores:

- Based on the content, I calculated sentiment scores, which provide a measure of the sentiment or tone of the content:
- Polarity: Indicates how positive or negative the content is.
- Subjectivity: Indicates how subjective or objective the content is.

These scores were pivotal in analyzing how the sentiment of a post affects user engagement and overall sentiment distribution.

Conclusion:

This offers invaluable insights into the digital interaction dynamics between the company and its audience. All in all the digital landscape is ever-evolving therefore harnessing the power of data-driven insights, as presented in this report, The company is well-positioned to enhance its digital engagement strategy, fostering stronger connections with its audience and continually elevating its digital presence.

FINDINGS AND INSIGHTS FROM THE ANALYSIS

1. Peak Engagement Time by Actual Day of Week Posted:

a) Likes

Findings:

- Peak engagement times for likes are at 23 PM on Tuesdays, 4 AM on Mondays, and 2 AM on Saturdays.
- Engagement is generally lower on Sundays, especially between 2-3 AM, but higher on Tuesdays, Mondays, and Saturdays.
- Saturday evenings and midnight prove to be more engaging than Sundays.

Recommendations:

- Schedule important posts during peak times to maximize reach.
- Avoid posting during low engagement hours, such as 3 AM on Saturdays.

b) Comments

Findings:

- Peak engagement times for comments are at 4 AM on Mondays and 1 AM on Thursdays.
- Engagement is generally lower on Sundays between 2-5 AM but picks up at 6 AM and peaks at 11 PM.
- Comment engagement is consistently high every day between 9-11 PM.

Recommendations:

- Schedule important posts during peak times to maximize reach and interactions.
- Consider avoiding post schedules during low engagement times, like 2-4 AM on Sundays.

c) Shares

Findings:

- Peak engagement times for shares are at 6 AM on Mondays and between 9 PM and midnight on weekends.
- Shares engagement is consistently high on Sundays between 9 PM and midnight.
- Engagement is generally lower on Sundays between 2-5 AM.

Recommendations:

- Schedule vital content during Sunday evenings to maximize reach and impact.
- Avoid posting during low engagement hours, such as early Sunday mornings.

d) General Engagements

Findings:

- Engagements are notably higher during afternoon hours, especially from 11 AM to 4 PM.
- Tuesday and Wednesday emerge as high-engagement days, with Wednesday afternoon being the peak.

Recommendations:

- Schedule key content during peak engagement hours for maximum impact.
- Diversify content to drive different types of engagements.

e) Reactions

Findings:

- Peak reactions occur during afternoon to early evening hours, particularly around 12 PM to 6 PM.
- Sundays experience a lower reaction rate early on but pick up during midday and afternoon.

Recommendations:

- Post content during peak hours from 12 PM to 6 PM to optimize reactions.
- On weekends, especially Sundays, target the afternoon hours.

f) Engagement Rate (per Reach)

Findings:

- Darker regions, indicating higher engagement rates per reach, are concentrated around late morning to early afternoon.
- On Saturdays and Sundays, there's a noticeable spike in engagement rate during the midday hours.

Recommendations:

- Target late morning to early afternoon hours for optimal engagement rate relative to reach.
- Emphasize midday hours on weekends, especially Sundays.

g) Engagement Rate (per Impression)

Findings:

- Peak engagement rates are during late morning to early afternoon, especially from 10 AM to 2 PM.
- Sundays have a distinct early afternoon pattern.
- Unique surge observed on Sunday mornings between 6 AM to 8 AM.

Recommendations:

- Prioritize Sunday mornings for posting content.
- Focus on engagement-driven content for midweek, especially Tuesday and Wednesday afternoons.
- Diversify content strategy on weekends, with special attention to early Sunday mornings.

Conclusion:

By aligning post schedules with peak engagement times and understanding unique engagement patterns, stakeholders can maximize reach, interaction, and resonance with their audience.

2. Hourly and Daily Engagement by Network and Content Type:

a) . Hourly Engagement:

- Facebook and Twitter have steady likes throughout the day, with minor peaks in the early afternoon.
- Instagram likes surge from 12 PM to 5 PM.
- LinkedIn sees minor mid-day increases.

Recommendation: Consider the platform's unique engagement patterns when scheduling posts.

b) . Daily Engagement:

- Facebook sees consistent likes with a slight peak on Thursdays.
- Instagram experiences higher likes from Tuesday to Thursday.
- Twitter has a minor peak on Wednesdays.

Recommendation: Emphasize mid-week posts, especially on Instagram and Twitter.

c) . Content Type with the Highest Hourly Peak Engagement:

- Links, photos, and videos all show peaks during afternoon hours.

Recommendation: Prioritize visual content and consider enhancing video content quality and relevance.

d) . Content Type with the Highest Day-of-the-Week Peak Engagement:

- All content types show mid-week peaks, especially photos on Wednesdays.

Recommendation: Diversify content throughout the week, with a focus on visual content during mid-week.

e) . Distribution of Content Types:

- Photos dominate the content strategy, followed by videos and text.

Recommendation: Continue to prioritize visual content but diversify with text, carousel, and link content. Evaluate the potential of rarely used content types.

Conclusion:

Future strategies should prioritize mid-week postings, afternoon hours, and focus on diversifying content types to cater to a broader audience segment

3. Posting Times & Frequencies vs. Engagement

a) . Hourly Posting Frequency

- Inactive Early Morning Hours: A strategic pause in content from 12 AM to 6 AM, possibly to avoid hours when the audience is inactive.
- Morning Uptick: Posting commences around 7 AM, peaking at 10 AM, indicating an alignment with regular working hours.
- Midday Variations: Between 10 AM and 5 PM, posting frequencies fluctuate, with hours like 11 AM and 3 PM observing higher activity.
- Evening Decline: A marked reduction in posts post-5 PM, concluding with almost zero activity by 11 PM.

b) . Day-of-Week Posting Frequency

- Midweek Dominance: Wednesdays have the highest post frequency (~7,000), closely followed by Tuesday and Thursday, showing a midweek content strategy focus.

- Weekend Dip: Posting substantially drops during weekends, indicating less emphasis on these days for content distribution.
 - Week's Start & End: Monday and Friday observe moderate activity (~5,000 posts each), signifying balanced content strategies for both the onset and wrap-up of the workweek.
- c) **. Engagement Patterns & Recommendations**
- Midweek Engagement Peak: Wednesday aligns with the highest engagement, corresponding with its post frequency.
 - Lower Weekend Engagement: Saturdays and Sundays witness reduced engagements, in sync with their lower post frequencies.
 - Consistent Weekday Engagement: Other weekdays maintain uniform engagement levels, reflecting consistent audience interaction.
- d) **. Visual Comparison (Posting vs. Engagement)**
- By juxtaposing bar plots of posting times with engagement times and day-of-week posting with day-of-week engagement, a pronounced correlation between posting frequencies and engagement frequencies emerges. This illustrates that the timing and availability of content significantly influence user engagement patterns.

Recommendations

- Morning Content Strategy: Posts between 7 AM to 10 AM should resonate with early risers, possibly with invigorating content, motivational quotes, or day-starting tips.
- Midday Posting Optimization: Evaluate engagement rates between 10 AM to 5 PM and streamline content strategy to align with the most engaging hours.
- Weekend Engagement Strategy: Given the engagement dip during weekends, curate weekend-specific content themes to captivate users.
- Leverage 'Monday Motivation' & 'Friday Wrap-up': With Mondays and Fridays having moderate activity, thematic content like "Monday Motivation" or "Friday Recap" can enhance engagement.
- Content Flow & Timing: Maintain a consistent content flow from late morning to late afternoon. Early morning and late-night strategies should cater to specific segments like night owls or early birds.

Conclusion

By fine-tuning content strategies aligned with these patterns, it's feasible to optimize digital engagement, making the brand more resonant and impactful in the digital realm.

4. Time Series Analysis

a) **. Monthly Time Series Analysis of Engagement Metrics**

- General Trends: An evident upward trend in 'Engagements' over time, with 'Likes' playing a pivotal role in this positive trajectory.
- Likes vs. Other Engagements: 'Likes' are the dominant form of interaction, whereas 'Comments' and 'Shares' have their unique behaviors. Comments remain relatively stable, while shares are more volatile, suggesting periodic viral content.
- Peak Months: Certain months exhibit simultaneous peaks across engagement metrics. A closer look at content from these months can unearth the cause behind the elevated engagement.

b) **. Monthly Maxima for Each Engagement Metric**

- Notable Peaks: November 2013, April 2017, March 2018, and October 2020 are standout months across the engagement metrics. Deep diving into the content from these months can provide insights into the peaks.
- c) **. Monthly Time Series Analysis with Peak Months Highlighted**
 - Pronounced Peaks: November 2013, April 2017, and 2020, in particular, has substantial peaks. These periods should be analyzed for specific campaigns, events, or content strategies that might have driven the heightened engagement.
- d) **. Yearly Time Series Analysis of Engagement Metrics**
 - Annual Trends: From 2015 onwards, engagements have been on the rise, with 2020 being particularly notable. 'Likes' drive a significant portion of these engagements. 'Reactions' peaked in 2018, while 'Reach' remained stable, suggesting content quality played a crucial role in engagement dynamics.
- e) **. Yearly Time Series Analysis using the metrics (Engagement Rate (per Reach), Engagements)**
 - Engagement Rate Dynamics: A steady rise until 2020, followed by a dip in 2021. However, 2022 shows signs of recovery.
 - Engagements Overview: Engagements were stable until 2018, after which a decline is observed, converging back to previous levels by 2020.

Recommendations

- Revisit Successful Strategies: Analyze content, campaigns, and strategies from peak engagement periods, particularly 2020, and incorporate similar themes or tactics in future campaigns.
- Address Declines: Understand the factors behind dips in engagement, especially in 2021. This will help in formulating strategies to counter such declines in the future.
- Strengthen Content Strategy: Given the consistency in 'Reach' and the fluctuations in engagements, focus on content quality and relevance. Incorporate content that not only attracts but also resonates with the audience.
- Engage Directly with Audience: Foster a two-way communication channel with the audience. Their feedback can be invaluable in refining content strategies and ensuring alignment with audience preferences.

Conclusion

The insights drawn from peak engagement periods, combined with an understanding of periods of decline, provide a roadmap for future content and engagement strategies. By continuing to monitor these metrics and adapting based on insights, Stanbic IBTC Bank can ensure a robust digital engagement with its audience.

5. Hourly Patterns Across Years

a) . Engagements:

Insights:

- There's a universal trend of lower engagement during the early hours (0:00 to 6:00) across all years.
- Peak engagement occurs during mid-day to early afternoon.
- Years 2017 and 2018 stand out with the highest engagement levels, possibly due to effective strategies or significant events.

- 2019 and 2020 show slightly lower engagement, while 2021 and 2022 suggest a continued upward trend.

Recommendations:

- Optimize Posting Times: Schedule content around mid-day to early afternoon to capitalize on peak user activity.
- Analyze 2017-2018 Peak: Revisit strategies from these years to derive future planning insights.
- Understand 2019-2020 Dip: Investigate the reasons behind the decrease in engagement during these years.
- Leverage Current Momentum: Continue and innovate strategies that contributed to the rise in 2021 and 2022 engagement.
- Continuous Monitoring: Regularly monitor and adjust strategies based on engagement trends.

b) . Likes:

Insights:

- Similar to engagements, the early hours see the lowest likes, with a rise starting from 7:00.
- 2017 and 2018 have the highest likes, suggesting optimal content appreciation during these years.
- 2021 showcases a resurgence in likes, often matching or surpassing 2017 and 2018.

Recommendations:

- Maximize Peak Hours: Schedule prime content during mid-day to early afternoon.
- Analyze Peak Years: Investigate the success factors of 2017 and 2018.
- Harness the Momentum: Continue successful strategies from 2021 while adapting to evolving audience preferences.

c) . Shares:

Insights:

- The early hours (0:00 to 5:00) show minimal sharing activity.
- Shares peak around 5:00 PM, suggesting post-work or school user activity.
- 2017 and 2018 mark a significant uptrend in shares, indicating engaging content or increased brand recognition.

Recommendations:

- Strategic Content Release: Time impactful content for early morning or late afternoon.
- Understand the Audience: Investigate the unusual peak at 1:00 AM to understand its cause.
- Engage During Fluctuations: Adapt content to maintain consistent engagement during fluctuating afternoon hours.

d) . Comments:

Insights:

- Comments peak around 9:00 to 10:00, indicating the highest user receptivity during these hours.
- 2020 stands out with pronounced engagement, suggesting highly effective content strategies or campaigns.

Recommendations:

- Peak Hour Content Release: Time content releases around 9:00 to 10:00.

- Study 2020's Strategy: Understand the factors behind the high engagement in 2020.
- Analyze 2021's Fluctuations: Investigate the reasons behind the irregular pattern in 2021.
- Stay Agile and Adapt: Regularly update strategies based on changing trends and feedback.

e) . Engagement Rate (per Reach):

Insights:

- Morning hours (6:00 - 11:00) see heightened activity, especially in 2017 and 2018.

2018 stands out with the highest engagement rate, suggesting highly resonating content or campaigns.

Recommendations:

- Leverage Morning Momentum: Prioritize content release during the 6:00 - 11:00 window.
- Evening Engagement: Revisit successful content strategies from 2018's noon to early night window.
- Learning from the Past: Analyze the content and campaigns from peak years to extract beneficial strategies.

f) . Engagement Rate (per Impression):

Insights:

- Morning hours (6:00 - 11:00) are vital for user engagement, especially in years like 2016, 2018, and 2022.
- 2016, 2018, and 2020 exhibit heightened engagement rates, indicating effective content and campaigns.

Recommendations:

- Morning Release: Focus on releasing primary content during peak engagement hours.
- Deep Dive into Peak Years: Investigate the strategies behind the high engagement rates in 2016, 2018, and 2020.
- Continuous Monitoring: Regularly monitor metrics to adapt to changing audience behaviors or platform algorithms.

g) . Relationship Between Metrics:

Insights:

- There's a positive feedback loop between engagements, shares, likes, and comments.
- All engagement metrics tend to benefit when content resonates with the audience.
- There's a difference between engagement quality (rate) and quantity (number).

Recommendations:

- Holistic Strategy: Adopt a strategy that ensures content garners likes, shares, and comments.
- Quality over Quantity: Focus on quality engagement over mere numbers.
- Continuous Monitoring: Track all metrics to quickly adapt strategies based on emerging patterns.

Conclusion: These insights and implementing the recommendations, stakeholders can enhance their digital marketing efforts, ensuring optimal audience engagement and brand growth.

6. Quarterly Pattern Across Year

a) . Engagements and Likes Metrics

Insights:

- There's consistent growth in engagement from 2017 to 2019, indicating improved content strategy or reach.
- Most years witnessed higher engagement in the second and third quarters, possibly due to seasonality or specific campaigns.
- 2019's third quarter saw a particularly sharp increase in engagement, hinting at a successful campaign or significant event.
- The second quarter of 2020 experienced a sharp decrease in engagement. Factors like global events (e.g., the COVID-19 pandemic), content strategy shifts, audience behavior, or platform algorithm changes could be the reasons.

b) . Shares Metrics

Insights:

- Shares consistently increased from 2017 to 2019 with a slight dip in Q1 2019, suggesting effective content strategy with minor hiccups.
- The first and second quarters consistently observe higher shares, hinting that content during these periods resonates well with the audience.
- A significant surge in shares was noted in Q2 2019
- Both 2018 and 2020 witnessed drops in shares during Q2 but recovered by Q4.

c) . Comments Metrics

Insights:

- A steady rise in comments was observed in 2017 and 2018, especially from Q2 onwards.
- Both 2020 and 2022 saw significant spikes in comments but with sharp declines in Q2.
- 2021 witnessed consistent growth in comments throughout the year.
- 2023 began with high comments but saw a drop in Q1.

d) . Engagement Rate (per Reach) Metrics

Insights:

- 2017 and 2018 observed a substantial increase in engagement rate per reach.
- From 2019 onwards, there was a noticeable decline in this metric.
- 2022 showed variability with a significant spike in Q2.
- 2023 experienced a sharp decline in Q3.

e) . Engagement Rate (per Impressions) Metrics

Insights:

- The most significant peaks were observed in Q2 2016 and Q1 2018.
- A sharp decline was observed in Q2 2018.
- 2022 and 2023 showed similar trends with notable peaks in Q2.
- Other years displayed fluctuating trends.

Recommendations:

- Content Strategy: Delve into specifics of periods with anomalies (sharp increases or decreases) to understand the content or campaigns that were run. This can help replicate success or avoid past mistakes.
- Engage with Audience: In periods of decline or peak engagement, direct interactions with the audience can provide invaluable feedback. This will help refine future strategies.
- Diversify Content: A diverse mix of content types, themes, and formats will cater to a broader audience segment and cushion against significant engagement drops.

- Monitor and Adapt: Continuous monitoring of user interactions and adapting content strategies based on insights is crucial for sustained engagement.
- A/B Testing: Implement testing to understand which content types or themes resonate most with the audience for optimized engagement.
- Stay Updated: Keep abreast of changes in social media platform algorithms, as these can affect content visibility and engagement.

Conclusion

The analysis of StanbicIBTC Bank's social media data offers a treasure trove of insights, highlighting the effectiveness of certain campaigns, the resonance of specific content types, and the influence of external factors. By leveraging these insights, StanbicIBTC Bank can enhance its digital marketing strategy, ensuring more robust and sustained engagement with its audience.

6. A comparative analysis was performed on various social media metrics for StanbicIBTC Bank over different quarters and years. The primary aim was to determine patterns, trends, and correlations between these metrics to draw actionable insights.

Comparative Insights

- Engagements, Likes, Shares, Comments, and Engagement Rate (per Impression):
- Growth Period (2017-2019): All metrics, including Engagements, Likes, and Shares, experienced a significant growth.
- 2019's Q2 stands out with a sharp spike across these metrics, suggesting a highly effective content strategy or a specific campaign that resonated well with the audience.
- Challenges in 2020's Q2:
- A simultaneous dip was observed across Engagements, Likes, and Shares during this period.

Note: This suggests external challenges (e.g., global events) or content strategies that didn't resonate with the audience.

a) Comment Peaks vs. Engagement Rate Peaks:

- The periods Q2 of 2016 and Q1 of 2018, which had peaks in comments, also observed peaks in engagement rate.
- This correlation suggests that highly engaged users were more inclined to leave comments.
- Stability in 2021:
- Comments exhibited consistent growth throughout 2021, indicating steady audience interaction.
- However, other metrics, such as Engagement Rate (per Impression), showed more variability. This could mean that while users were actively commenting, the overall engagement relative to the number of impressions was fluctuating.

Recommendations:

- Replicate Success Factors from 2019:
- To capitalize on the growth observed in 2019, stakeholders should review and replicate the strategies or campaigns employed, especially in Q2 of 2019.
- Address 2020's Challenges:

- Investigate the shared challenges faced in 2020's Q2 across the metrics. By understanding these challenges, the bank can develop strategies to mitigate such drops in the future.

b) Boost Comment-Driven Engagement:

- As there's a correlation between high engagement rates and comments, encourage user interactions and comments. This can be achieved by posting engaging content, prompting questions, or launching interactive campaigns.
- Monitor and Optimize Content Strategy:
- Continuous monitoring and fine-tuning of the content strategy are essential. This ensures consistent high engagement relative to impressions and can counteract the fluctuations observed in certain metrics.
- Engage with the Audience: Direct and frequent engagement with the audience can provide a deeper understanding of their preferences, leading to better content alignment. This can result in improved metrics across all platforms.

Conclusion

By understanding these patterns and correlations, the bank can craft more effective digital marketing strategies, ensuring robust engagement and fostering a stronger connection with its audience.

7. An in-depth analysis was conducted on various social media metrics for StanbicIBTC Bank over different years and days of the week. The primary goal was to discern patterns and correlations between these metrics to generate actionable insights and recommendations for stakeholders.

Insights

a) YearPosted by Engagements:

- Initial Slow Growth (2013-2015): This period saw modest growth, hinting at the bank's initial phases on social media platforms or the nascent stages of their content strategy.
- Rapid Expansion (2016-2020): A significant uptick in engagements began in 2016, with 2020 registering the peak. This surge can be attributed to effective content strategies or increased audience reach during these years.
- Decline & Recovery (2021-2023): Post the 2020 peak, 2021 witnessed a decline, followed by a recovery in 2022, and again a dip in 2023. Each year's dynamics need to be understood in the context of content shifts, external events, or audience behavior changes.

b) Yearly_ Day Of Month Metrics:

- Engagement Patterns: Wednesday in 2020 had the highest engagement, while Sundays consistently registered the lowest across several years.
- Reactions & Likes Dynamics: These metrics closely followed engagement trends, indicating that a significant part of the engagements is reactions and likes.
- Reach Trends: 2022 was prominent for reach on Fridays and Wednesdays, reinforcing the effectiveness of content dissemination on these days.
- Shares Behavior: 2018's Wednesday was notable, suggesting exceptionally share-worthy content, while weekends consistently registered lower shares.
- Engagement Rate Insights: 2018's Fridays and Wednesdays had high engagement rates per reach, indicating that content resonated well with the audience it reached.

- Post Clicks Analysis: 2020 stood out, particularly on Thursdays and Wednesdays, signifying highly clickable content.

Integrated Insights:

- Weekday Prominence: Both yearly and daily metrics accentuate the importance of Wednesdays and Fridays in terms of engagement, reach, and shares. This observation suggests that these days are optimal for content dissemination.
- Weekend Dynamics: Sundays, and sometimes Saturdays, consistently show reduced activity, implying that users may be less receptive or active during weekends.
- Yearly Variations: Certain years, such as 2020 for post clicks and 2018 for shares, are especially prominent for specific metrics. The uniqueness of content or strategies during these years can provide valuable insights.

Recommendations:

- Leverage Weekdays: Prioritize major content, announcements, or campaigns on Wednesdays and Fridays to achieve maximum traction.
- Weekend Strategy: Since weekends, especially Sundays, show reduced activity, consider posting lighter or varied content types. Major campaigns might gain better traction on weekdays.
- Analyze Yearly Peaks: Investigate the content and strategies of peak years like 2020 (post clicks) and 2018 (shares) to replicate their success in subsequent years.
- Focus on Engagement Rate: Identify and replicate the types of content that drive high engagement rates to ensure future posts resonate well with the audience.
- Feedback Loop: Direct engagement with the audience can offer insights into their preferences, leading to better content alignment and improved metrics.

Conclusion

A detailed understanding of the trends and patterns across years and days provides a strategic advantage in content posting. By leveraging these insights, StanbicIBTC Bank can optimize their social media strategy, ensuring maximum reach, engagement, and impact in their digital marketing efforts.

8. Network and Content Type with Highest and Lowest Values:

- Twitter shows the highest click metrics, especially for Video content, achieving up to 171.51 post link clicks.
- Conversely, Facebook registered the lowest click metrics, particularly for Carousel content, even registering a negative value for 'Other Post Clicks', suggesting potential data discrepancies.

a) . Behavior of the 'Network' Column with Respect to Click Metrics:

- LinkedIn emerges as the platform driving the most link clicks, particularly for Document type content.
- Facebook consistently registers high engagement, especially in the "Other Post Clicks" metric, although it doesn't always lead in driving users to external links. Instagram and Twitter have their niches, with neither significantly outperforming the other across all metrics.

b) . Heatmap Analysis for Different Content Types:

- LinkedIn is the preferred platform for Document type content.

- Facebook is optimal for Photo type content but doesn't consistently drive users to external links.
 - Instagram, given its visual nature, unsurprisingly emerges as the leader for Photo content.
 - Twitter showcases balanced engagement across different content types.
- c) . Engagement Metrics Across Network and Content Type:**
- LinkedIn shines with photos, generating approximately 101,327 post link clicks, significantly outperforming Facebook.
 - Instagram naturally dominates with Photo content, but also shows significant engagement with videos.
 - Twitter displays a balanced engagement pattern across various content types.
- d) . Impressions Analysis for Network and Content Type:**
- Instagram dominates with Photo content, recording over 6 million impressions.
 - LinkedIn showcases diverse user engagement, with substantial impressions across Photo, Video, and Text content types.
 - Twitter emphasizes its strength with Text content, followed by Photo and Video.
 - Facebook primarily resonates with Photo content.

Recommendations:

- Content Optimization: Recognize the strengths of each platform. For instance, prioritize video content on Twitter, and leverage LinkedIn for document sharing.
- Engage the Audience: Given varying engagement metrics, directly interact with users to gauge their preferences, which can guide content strategies.
- Data Integrity: Address potential data discrepancies, as seen with Facebook's negative 'Other Post Clicks'.
- Diversify Content Strategy: While platforms like Instagram excel with visual content, diversify strategies for platforms like LinkedIn, which show diverse engagement.
- Platform-Specific Strategies: Adopt platform-specific content strategies. For instance, focus on photos for Instagram and text-based content for Twitter.
- Feedback Mechanism: Establish a feedback mechanism to continuously adapt and optimize content based on audience preferences and engagement metrics.

Conclusion:

Understanding platform-specific dynamics and audience preferences is pivotal. StanbicIBTC Bank can harness these insights to craft a nuanced, effective social media strategy, ensuring optimal engagement across all platforms.

9. Interactions Between 'Network' and 'Content Type' Regarding Impressions:

- Instagram: The platform's "Carousel" content type has a standout average impression of 756, highlighting the effectiveness of multi-image posts for engagement.
- Twitter: Exhibits a balanced engagement across "Link", "Photo", "Text", and "Video" content types, suggesting versatility in content type engagement.
- LinkedIn: Primarily engages with "Video" content, closely followed by "Document", "Link", and "Photo". This indicates a preference for multimedia content on this platform.
- Facebook: Video content slightly edges out other content types in terms of impressions, suggesting a possible shift in user engagement trends.

a) Reach Analysis by Network and Content Type:

- Instagram: Emphasizes its dominance in visual content with "Photo" content type registering the highest reach.
- LinkedIn: While "Photo" content leads in reach, there's significant engagement with "Video" and "Text". However, "Document" content might need strategical reevaluation.
- Twitter: Demonstrates its core strength with "Text" content type, though "Photo" and "Video" content types are not far behind.
- Facebook: Continues to show a preference for visual content with photos leading in reach.

b) **. Reach Heatmap Analysis:**

- Instagram: Video content leads with an average reach of 249, suggesting Instagram's evolving preference for dynamic content.
- Facebook: Again, video content tops the chart with an average reach of 233.
- LinkedIn and Twitter: Both platforms demonstrate a balanced reach of 156 across different content types.
- Content Absence: Certain content types, like "Carousel" for Facebook and "Document" for Instagram, are notably absent, suggesting platform-specific content strategies or data limitations.

c) **. Distribution of Posting Hours:**

- LinkedIn: "Document" content type postings are notably later, suggesting a possible area for experimentation in posting times.
- Instagram: Displays consistency in posting hours across all content types.
- Facebook: Shows variability in posting times for different content types, reflecting either strategic experimentation or user behavior.
- Twitter: Emphasizes early postings for "Link" content type, possibly targeting early morning users.

Recommendations:

- Content-Type Optimization: Align content types with platform strengths, e.g., Carousel posts on Instagram and Video content on Facebook.
- Diversify Posting Times: Especially on LinkedIn, experiment with varied posting times for "Document" content to gauge engagement differences.
- Strategic Scheduling: Use insights from posting hour distributions to refine content scheduling, ensuring maximum visibility.
- Platform-Specific Content: Reevaluate the use of certain content types on platforms where they're absent or underperforming.
- Engagement Analysis: Regularly assess content engagement metrics to adapt and evolve strategies in real-time.

Conclusion:

The digital landscape is ever-evolving, and staying ahead requires continuous adaptation and learning. This analysis has highlighted the nuances of different platforms and content types, offering StanbicIBTC Bank a roadmap to refine their social media strategies for maximum impact.

Note: I can repeat this process Distribution of Posting for other temporal attributes e.g., (MonthPosted, Day of Week Posted, etc.)

10. Segmentation

a) Network Segmentation by Engagement Metrics:

Insights:

- LinkedIn's Engagement: Users on LinkedIn are more inclined towards link-based content, likely seeking professional or detailed resources.
- Instagram's Engagement: The platform's visually driven nature is evident, with content receiving a higher number of likes, though it lags in comments and link clicks.
- Facebook's Balanced Approach: A good mix of link clicks, likes, and comments suggest a holistic engagement on Facebook.
- Twitter's Steady Engagement: Despite not leading in any particular metric, Twitter maintains a consistent engagement, emphasizing its nature of quick, impactful content.

b) . Content Type Segmentation by Engagement Metrics:

Insights:

- LinkedIn's Click Engagement: LinkedIn's professional nature is evident with a high average in post link clicks. This suggests that users on this platform are keen to delve deeper into content, making it an ideal platform for detailed articles or professional resources, especially for B2B businesses.
- Instagram's Like Dominance: Instagram, primarily a visual platform, tops in terms of likes. This underlines that while users might not frequently click on links, they actively engage by appreciating content through likes.
- Facebook's Balanced Engagement: Facebook displays a rounded engagement across metrics, indicating that users not only appreciate content but are also open to discussions. This balance is crucial for brands aiming for both visibility and active user interaction.
- Twitter's Consistent Engagement: Twitter, known for its concise content, holds a moderate but consistent engagement across metrics. This signifies that even with its brevity, content on Twitter can still be impactful.

c) . Quarterly Segmentation by Engagement Metrics:

Insights:

- Q3's Link Engagement Peak: The third quarter witnesses the zenith in post link clicks. This suggests a heightened user activity or engagement during this period, making it an opportune time for link-oriented content.
- Q1's Content Appreciation: The first quarter emerges supreme in terms of likes, insinuating that content during this phase finds more resonance and appreciation with the audience.
- Commentary Trends: A steady decline in comments from Q1 to Q4 might be indicative of content saturation or a shift in user engagement behavior. This calls for introspection into the content's discussion-worthiness in the latter half of the year.
- Q4's Balanced Engagement: The last quarter, even with dwindling comments, maintains a commendable balance between link clicks and likes. This shows effective content strategies that cater to diverse user preferences.

Recommendations:

- Content Tailoring: Each platform has its unique strengths. Recognize and adapt the content to resonate with the platform's inherent strengths.

- Quarterly Content Revamp: Given the distinct quarterly trends, especially the declining comments, it's crucial to periodically revisit and refresh the content strategies. Consider interactive content, polls, or user-generated content to boost engagement.
- Optimize Link-Oriented Content: Particularly for Q3, focus on link-oriented content to tap into the heightened user engagement during this period.

Conclusion: A nuanced understanding of seasonal and quarterly engagement trends can immensely aid in content calendar planning. By leveraging these insights, stakeholders can craft content strategies that align with quarterly trends, ensuring unwavering and heightened engagement year-round.

11. Trends Over Time:

a) . Post Link Clicks, Likes, Comments Metrics by Hour of the Day:

Insights:

- Late Night Engagement: A prominent peak in post link clicks nearing midnight suggests a segment of the audience is more inclined to click on links during these hours.
- Dormant Early Mornings: A sharp drop around 3 AM indicates a time of reduced activity, potentially making it less effective for content aiming for link clicks.
- Morning Recovery: A resurgence by 5 AM suggests users starting their day and browsing content.
- Daytime Variability: The inconsistent values from morning to early evening require a diversified content strategy to determine optimal engagement times.

b) . Average Comments by Day of Week Posted:

Insights:

- Sunday Engagement: Sunday emerges with the highest average comments, indicating content posted on this day spurs more engagement.
- Weekday Trends: Monday and Wednesday show a drop in engagement, suggesting either content or user behavior variations.

c) . Average Likes by Day of the Week:

Insights:

- Sunday Appreciation: Sunday leads in average likes, suggesting content posted on this day resonates well with the audience.
- Weekday Patterns: Monday, Wednesday, and Thursday also have high engagement, with Monday closely trailing Sunday.

d) . Temporal Engagement Analysis:

1. Discrepancy in Average and Total Comments by Day of the Week:

Insights:

a) Total Comments by Day of the Week and Year:

- Represents the cumulative comments for each day of the week, further segmented by year.
- The volume of posts significantly influences this metric. For instance, weekdays, known for a higher frequency of posts, might overshadow weekends in terms of total comments, even if individual posts on weekends receive more feedback.

b) Average Comments by Day of the Week:

- Portrays the mean number of comments each day garners.

- Even if Sundays have fewer posts, if they're more engaging or elicit stronger reactions, it would lead to a higher average comment count for Sundays.

Root of the Discrepancy:

- Posting Volume: Fewer but more engaging posts on Sundays result in a higher average number of comments. On the contrary, the sheer volume of weekday posts, even if they attract fewer comments individually, might culminate in a higher total comment count.
- Content Nature: Content posted on Sundays might be more interactive or engaging, inciting more users to leave comments.

Recommendations:

- Evaluate Posting Volume: Assess the number of posts distributed across each day to discern whether posting volume significantly affects these results.
- Optimize Sunday Content: If Sundays indeed have fewer but more engaging posts, it suggests an opportunity. Leveraging this, the bank could amplify its content strategy on Sundays, posting more of such high-engagement content to capitalize on this trend.
- Weekday Content Strategy: Given the volume of weekday posts, consider refining the content strategy to boost individual post engagement. This can be achieved by analyzing the type of content that garners the most engagement on weekends and seeing if elements of that can be incorporated into weekday posts.
- Holistic Metric Analysis: Extend this analysis approach to other metrics such as Likes and Shares. This will provide a comprehensive understanding of user engagement across different metrics and days, ensuring a more rounded content strategy.

e). Shares by Day of the Week Posted:

Insights:

- Monday Shares: Monday tops in average shares, suggesting content at the week's start resonates and prompts redistribution.

f). Shares by Day of the Week and Year:

Insights:

- Low Sunday Engagement: Both average and total shares are lowest on Sundays, pointing to content or user behavior patterns.
- Yearly Consistency: This trend being consistent across years underlines its significance.

Recommendations:

- Content Scheduling: Leverage late-night hours for link-centric content to maximize visibility and engagement.
Refrain from posting critical content during early morning hours (around 3 AM) due to reduced activity.
Diversify content during daytime hours to understand what resonates best with the audience.
- Day of the Week Strategy: Evaluate the nature and type of content being posted on Sundays and consider diversifying it to boost shares.
Leverage insights tools on platforms to further understand and adapt to user behavior patterns on specific days.
- Content Experimentation: Given the consistent low shares on Sundays across years, experiment with different content types or engagement techniques to boost this metric.
Engage users with interactive content, polls, or incentives to share, especially on days like Sunday where sharing behavior is lower.

12. Engagement Trend Analysis:

a) . Interactions of Engagement Metrics by Hour:

Insights: Likes, Shares, and Reactions:

- A strong positive correlation exists among these metrics, signifying that as one increases, the others tend to follow suit.
- Specifically, the correlation between Likes and Shares stands at 0.87, Likes and Reactions at 0.998, and Shares and Reactions at 0.87.

b) Comments Interaction:

- Comments have a moderate positive correlation with likes (0.67), shares (0.74), and reactions (0.68), indicating posts that attract more comments also generally see an uptick in likes, shares, and reactions.

c) Engagement Rate Interactions:

- The Engagement Rate (per Reach) and Engagement Rate (per Impression) showcase a robust positive correlation of 0.95, implying they typically move in tandem.

Recommendations:

- Enhance Content to Drive Likes: Given the strong correlation between likes, shares, and reactions, focusing on content that attracts likes can also amplify shares and reactions.
- Promote Conversations: Content that stimulates discussions can lead to spikes in various engagement metrics. Employ content that kindles conversations or pose questions that require audience input.
- Consistently Monitor Engagement Rates: Regularly keeping tabs on both Engagement Rate (per Reach) and Engagement Rate (per Impression) can offer insights into the effectiveness of content and the depth of audience engagement.

d) . Engagement Dynamics by Day of the Week:

Insights:

- Sunday Engagements: Both Sunday and Thursday exhibit the highest engagement in terms of absolute numbers.
- Monday's Unique Engagement: While Monday and Wednesday see a dip in certain absolute engagement metrics, Monday stands out with the highest sharing activity, indicating profound engagement.
- Growth Trends: From Tuesday through Thursday, there is a consistent surge in engagements, suggesting a gradual amplification of audience engagement throughout the week.
- Engagement Depth vs. Breadth on Sundays: Sunday's patterns indicate deep engagement but not broad engagement, suggesting the content might be deeply resonating with a specific user segment, but not appealing widely enough to incite broader interactions.

Recommendations:

- Maximize High Engagement Days: Strategize content or campaigns for Sundays and Thursdays, leveraging peak audience interaction.
- Customize Monday Content: Given Monday's unique engagement pattern, tailor content to cater to an audience that's deeply engaged or niche.
- Iterative Strategy Refinement: Constantly assess trends and recalibrate the content strategy based on evolving audience behaviors and external influencers.

e) . Yearly Engagement Patterns:

Insights:

- 2020's Engagement Pinnacle: 2020 saw the zenith of engagements in terms of likes, comments, reactions, and others.
- 2018's Sharing and Engagement Rate: Shares and the engagement rate per reach hit their peak in 2018, suggesting the content that year had a unique shareable quality.
- 2016's First Impression Impact: The engagement rate per impression for 2016 indicates that the content was instantly compelling to users.

Recommendations:

- Revisit 2018: Analyze the content strategy of 2018, understanding what made the content exceptionally shareable that year.
- Leverage 2020's Peak: Build on 2020's engagement momentum, focusing on replicating or evolving the successful strategies from that year.
- Analyze 2016's Captivation Factor: Dive deep into what made 2016's content instantly appealing. Recognizing this can provide invaluable pointers for future content creation.

13. Analyzing the Delicate Balance of Engagement Metrics:

a) . Insights from 2020 Engagement Metrics:

Insights:

Low Engagement Rate (per Reach):

- The low engagement rate per reach in 2020, despite high absolute engagements, indicates that while many viewers engaged with the content, a significant portion chose not to interact. This possibly suggests content saturation or content relevance issues.

Low Engagement Rate (per Impression):

- This metric, which gauges user engagement out of the total number of times content appears on users' feeds, points to the need for multiple content displays before eliciting a response. The content might lack an immediate hook or call-to-action, despite its broad appeal.

Moderate Shares:

- The sharing activity being moderate implies that while users were interacting with the content, they weren't sufficiently moved to share it within their networks. It infers the content might have been informative or entertaining but lacked a share-worthy aspect.

High Absolute Engagements:

- The substantial number of interactions, such as likes, comments, and reactions, in 2020 underscores the content's vast reach. However, the volume could be merely compensating for the lower engagement rates.

Content Nature:

- The content's nature in 2020 likely catered to a general audience, resulting in broad-based interactions but lacking the personalized touch to spur shares or deeper engagements.

Platform Dynamics:

- The platform's algorithmic behavior might have amplified content with initial engagements, leading to more visibility, and in turn, further interactions.

Recommendations:

- Sharper Content Targeting:
Prioritize refining the audience targeting to ensure content is not just disseminated widely but strategically to those who find it most pertinent. This can enhance the engagement rate.

- **Boost Content Shareability:**
Investigate the characteristics of previously high-shared content. Incorporate those elements to make upcoming content more relatable and share-worthy.
- **Iterative Content Strategy:**
Continuously experiment with diverse content formats, messaging angles, and promotional tactics. This iterative approach can unveil what truly resonates with the audience, providing a roadmap for refining the overall content strategy.

14. Decoding the Most Engaging Content:

a) . Content Type Insights:

Observations:

- **Photo Dominance:** "Photo" content type outperforms others with the highest engagement.

Recommendations:

- **Boost Photo Content:** Enhance the production of photo content to capitalize on its high engagement.
- **Reassess Underperforming Content:** Review performance of "Status" and "Offer" content, and adjust strategy as required.
- **Expand Content Diversity:** Despite the success of photo content, diversifying content type is essential to cater to varying audience preferences.

b) . Post Type Insights:

Observations:

- **Post vs. Tweet:** Posts show superior engagement compared to tweets.

c) . Network Engagement Analysis:

Observations:

- **Instagram's Prowess:** Instagram emerges as the leader in engagement, followed by Facebook, Twitter, and LinkedIn.

Recommendations:

- **Harness Instagram's Potential:** Prioritize Instagram-tailored content leveraging its unique features for maximum engagement.
- **Fine-tune Facebook Content:** Given Facebook's significant engagement, ensure content is customized for its diverse user base.
- **Re-strategize for LinkedIn:** Craft content resonating with a professional audience given LinkedIn's professional nature.

15. Diving Deep into Content Performance:

a) . Engagement Rate by Content Type:

Observations:

- **Document's Surprise Rise:** Despite being a less common content type, documents have a stellar engagement rate.

Recommendations:

- **Increase Document Content:** Given its unexpected success, produce more document-based content to engage the audience deeply.

b) . Engagement Rate Trends:

Observations:

- **Saturday's Surge:** Saturday shows the highest engagement, making it the best day for crucial content.

- Peak Periods: The 1st and 3rd weeks of the month, February, September, Q4, and Q1 emerge as peak engagement periods.
- Yearly Trend: A decline from 2016 to 2021 indicates shifts in content strategies or audience preferences.

Recommendations:

- Maximize Peak Times: Schedule key content or campaigns during peak engagement times.
- Innovate for Low Engagement Periods: Use innovative strategies for periods like Sundays and Mondays to enhance engagement.
- Address Yearly Decline: Delve deeper into the consistent decline from 2016 to 2021 to identify and rectify underlying issues.

16. Sentiment Analysis

a) Engagement Rate (per Impression) by Sentiment

Insights:

- Neutral Content's Appeal: Neutral content dominates in engagement, indicating a preference for straightforward, factual, or informative content.
- Embrace of Positive Content: Positive sentiment content, which might be uplifting or motivational, follows closely in engagement.
- Caution on Negative Content: Negative sentiment content lags, suggesting a focus on feel-good or informative content might be more beneficial.

17. Optimal Length Analysis

Insights:

- Engagement with Content Length: Longer posts correlate with longer engagement durations, suggesting that users are likely spending more time reading and interacting with extended content.

18. Content Type Analysis

Insights:

- Carousel's Reign: Among content types, carousel posts have the longest average length, followed by video and photo posts.

19. Platform-Specific Length Analysis

Insights:

- Instagram's Lengthy Posts: Instagram leads with the longest average post length, ideal for detailed captions and stories.
- Twitter's Brevity: The platform's character limit ensures shorter posts.
- LinkedIn's Conciseness: The professional platform prefers succinct and direct content.

20. Segmented Engagement Metrics

Insights:

- Low Reach, Low Clicks: Despite the limited reach and clicks, these posts resonate with the audience, achieving an average of 40 Likes.
- High Reach, Low Clicks: A broader audience but only 10 average Likes suggests the content might not resonate widely.
- Low Reach, High Clicks: Limited reach but a high average of 79 Likes signifies compelling content that engages those who view it.
- High Reach, High Clicks: Balanced engagement with an average of 49 Likes.

Recommendations

- **Tailored Sentiments:** Prioritize neutral and positive sentiments in content creation for higher engagement.
- **Content-Length Strategies:** While longer posts capture more user attention, ensure content remains engaging and relevant. Adjust content length based on the platform's norms.
- **Diversify Content Types:** Although carousels have the highest average length, diversify with video, photo, and other content types for a holistic approach.
- **Platform-Specific Content:** Customize content length for each platform. For example, while Instagram can have longer posts, maintain brevity on Twitter and directness on LinkedIn.
- **Engagement Optimization:** Focus on creating compelling content that not only reaches a broader audience but also encourages interaction. Use the insights from segmented engagement metrics to fine-tune targeting strategies.

21. Sentiment Distribution Analysis

a) . Distribution Across Networks

Insights:

- **Instagram:** The platform with the highest number of posts, mostly positive, followed by neutral and negative sentiments.
- **Facebook:** While having fewer posts than Instagram, it mirrors its sentiment distribution, with positive posts leading.
- **Twitter:** Fewer posts with a positive sentiment skew.
- **LinkedIn:** The platform with the least number of posts, yet maintaining a predominant positive sentiment.

Recommendations:

- **Platform-Specific Approach:** Align content strategy with platform-specific nuances to achieve higher engagement.
- **Feedback Loop:** Continuously monitor sentiments to address spikes in negative sentiments promptly.
- **Engage with Neutral Posts:** Enhance community relations by actively engaging with users leaving neutral feedback.
- **Address Negative Feedback:** Engaging and addressing concerns can transform critics into brand advocates.

b) . Distribution Across Content Types

Insights:

- **Photo Content:** Dominates across all sentiments, proving the power of visual content.
- **Positive Dominance:** Regardless of the content type, there's a prevalence of positive sentiment content.
- **Videos:** Have a relatively higher proportion of negative sentiments, possibly addressing more complex topics.
- **Links:** Lean towards neutral, suggesting they might be more informational.

Recommendations:

- **Leverage Visual Content:** Invest in quality photos and visual campaigns for higher engagement.

c) . Engagement Metrics vs. Sentiment

Insights:

- Positive Content's Strength: Consistently performs the best across all engagement metrics.
- Neutral Content's Role: While being informative, it maintains decent engagement rates, vital for transparency.
- Negative Content's Place: Lags in engagement but is essential for addressing concerns transparently.

Recommendations:

- Boost Positive Content: Collaborate with creators and run campaigns to highlight positive stories.
- Active Comment Engagement: Actively shape the narrative by engaging in the comments, especially for neutral and negative content.

d) . Correlation with Other Metrics

Insights:

- Across the correlation metrics, positive content, though slightly edging out in some areas, doesn't drastically outperform neutral or negative content. This suggests that while sentiment plays a role, other factors also significantly impact these metrics.

Recommendations:

- Holistic Strategy: While focusing on creating more positive content, also pay attention to other metrics and factors that influence engagement.

22. Sentiment Analyses with Metrics

a) . Likes vs. Sentiment

Insights:

- Both Negative, Neutral, and Positive sentiment posts have a similar number of likes, suggesting that the sentiment does not significantly impact the number of likes a post receives.

b) . Comments vs. Sentiment

Insights:

- Neutral posts lead in comments, followed by negative, and then positive. This might indicate that neutral posts (often informational or factual) spark more discussions or queries.

c) . Shares vs. Sentiment

Insights:

- Negative sentiment posts are shared the most, suggesting content highlighting issues or concerns resonates more with users.
- Neutral content, being factual, is the next most shared, indicating consistent interest in sharing unbiased information.
- Positive content, though appreciated, is less frequently shared.

Recommendations:

- Dive deeper into negative content to understand its nature and address it effectively.
- Focus on enhancing the shareability of positive content by making it more relatable or tying it to trending topics.

d) . Combined Metrics

Insights:

- When considering likes, comments, and shares together, negative and neutral posts tend to drive more interactions than positive ones. This could be due to users wanting to discuss and share more pressing or informative content.

23. Temporal Analysis of Sentiment

a) . Sentiment Trend over Time (Year Posted)

Insights:

- There's a consistent increase in positive sentiment posts, suggesting a strategic shift towards positive messaging.
- Peaks in negative sentiment, especially in 2022, may be tied to specific events or challenges that year.
- A steady stream of neutral posts indicates consistent dissemination of informational content.

Recommendations:

- Investigate the context behind the surge in negative sentiments in specific years like 2022.
- Focus on creating more positive content that resonates with the audience.
- Enhance engagement on neutral posts by introducing interactive elements or discussions.

b) . Sentiment Trend over Time (Hour Posted)

Insights:

- Negative sentiment remains consistent throughout the day, indicating that posting hour doesn't significantly influence the sentiment. This suggests that the sentiment of content is pre-determined and not influenced by real-time events or reactions.

Conclusion

StanbicIBTC Bank's social media strategy has evolved over time, focusing more on positive messaging while addressing concerns transparently. The insights and recommendations provided can further tailor their approach for enhanced engagement. By understanding the nuances of sentiment distribution, the bank can better align its content with audience preferences and drive more meaningful interactions.

24. Topic Modelling Insights

a) . Distribution of Topics Across Sentiments

Insights:

- Topics 1, 5, and 7 seem to align with Stanbic IBTC's core services, potentially promoting the bank's online app, services, or investment avenues.
- Topics 4, 6, and 10 lean towards brand-building content, likely providing life advice or motivational narratives under themes like "reward saving," "power Monday," and "moving forward."
- Topic 3 possibly addresses customer queries or provides information related to pension or account specifics.

Recommendations:

- Engage More on Popular Themes: Recognize sentiments tied to each topic and adapt your content strategy. If topics like 4, 6, and 10 show positive sentiments, then such themes might warrant further attention.

- Proactively Address Concerns: If topics, such as Topic 3, frequently present neutral or negative sentiments, address these issues directly. This can be done through FAQ sessions, explanatory content, or more direct engagement.

b) . Time Series Analysis of Topic Models

Insights:

- The prominence of individual topics varies over time.
- Topics 1 and 4 remain relatively consistent, while Topics 2 and 3 have shown notable changes.

Recommendations:

- Adapt to Evolving Trends: Understand which topics are becoming more relevant over time and adjust content strategies accordingly.
- Deep Dive into Specific Themes: Explore the specifics of each topic to determine why certain themes become more prominent or fade over time.

c) . Time Series Analysis of Top 5 Topics

Insights:

- Popularity Trends: Topics 2 and 4 have gained traction, especially in 2022, suggesting increasing relevance.
- Volatile Topics: Topics 0 and 1 show fluctuations, hinting at event-driven or seasonal relevance.
- Declining Topics: For instance, if Topic 0 declined after 2019, it requires an exploration of the reasons behind the reduced interest.
- Steady Interest: Topics with consistent engagement, like possibly Topic 5, indicate a stable audience base.

Recommendations:

- Capitalize on Emerging Trends: With Topics 2 and 4 rising, consider producing content that aligns with these themes.
- Reassess Fading Topics: For declining topics, such as Topic 0, reevaluate the strategy. It's vital to find new perspectives or stories to reignite audience interest.
- Maintain Consistent Topics: For topics showing steady engagement, continue to nourish and develop that content, making occasional tweaks based on feedback.

d) . Post Topics Over Time

Insights:

- Topics 1 and 4 have shown consistency, while Topics 2 and 3 have evolved over the analyzed period.
- Knowing the detailed content of each topic can provide more profound insights into when specific themes resonate the most.

Recommendations:

- Tailor Content Strategies: By understanding when certain topics resonate, you can adapt your content strategy for maximum effectiveness.
- Audience Feedback Loop: Continuously monitor audience feedback on posts of different topics to refine content direction.

Conclusion

Topic modeling provides a powerful way to understand the nuances of content themes and how they evolve over time. By aligning content strategies with the topics that resonate the

most and addressing those that show declining interest, StanbicIBTC Bank can ensure that their social media engagement remains robust and continues to grow. The insights and recommendations presented here offer a roadmap for optimizing content strategy based on audience preferences.

Key Takeaway: Understanding temporal user engagement patterns is crucial for effective digital marketing and communication strategies

Conclusion: This comprehensive analysis of StanbicIBTC's social media engagement has provided invaluable insights into the bank's digital footprint and audience engagement. From the data, it's evident that the bank enjoys a significant presence on major platforms, with Instagram and Facebook leading in terms of post count and audience engagement.

The sentiment analysis reveals a predominantly positive response from the audience across platforms, emphasizing the bank's successful content strategy. The temporal analysis further underscores this by showing a significant increase in positive sentiments over time, suggesting effective brand communication.

Feature engineering and content analysis have pinpointed key areas of interest for the audience. It's clear that visual content, especially photos, resonates most with the audience, while topics related to services, online functionalities, and investment opportunities are among the most discussed.

However, certain topics, particularly those revolving around customer concerns or specific bank services, show room for improvement in terms of clarity and engagement. The topic modeling has highlighted potential areas of focus, such as investment opportunities and online services, which can be leveraged to further enhance user engagement.

In summary, StanbicIBTC's digital engagement strategy has proven effective in building a positive brand image and fostering audience interaction. By continuing to focus on visual content, addressing areas of concern, and leveraging insights from topic modeling, the bank can further solidify its position as a leading financial institution in the digital space. Armed with these insights, the bank is poised to make informed decisions, drive engagement, and shape the future of its digital narrative.

This overarching conclusion provides a holistic view of the findings and recommendations from this analysis. It encapsulates the strengths, areas of improvement, and potential strategies for the bank's digital engagement.