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LEVERAGING MACHINE LEARNING TO ANALYZE CODING INFLUENCER AUDIENCE AND ENGAGEMENT

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ABSTRACT

This research aims to conceptualize, develop, and validate a specific instrument for measuring the engagement of followers towards influencers on social media, and more specifically, in this first research, on Instagram. We surveyed (in-depth interviews, and questionnaires) 32 marketing experts and 1170 Instagram followers. Based on the applications of factor analysis and structural equation modelling, we determined 21 valid items. The scale assesses the cognitive, affective, and behavioural characteristics of follower's engagement across five dimensions. The results provide insight into the interactive, personal, and social aspects of this type of virtual engagement. It is the first scale to measure this engagement in a multidimensional framework, which advances future research. Additionally, it will help managers identify the strongest dimensions of their influencers' engagement and thus be able to adjust marketing communication strategies to foster multidimensional follower engagement and subsequent partnerships.

INTRODUCTION

In recent decades, researchers and marketers have examined the nature and dynamics of the relationship between brands and consumers, which are construed as acting as partners. Research has found that the interactive capabilities of social media (SM) can provide a conceptual parallel to the conversational nature underlying the concept of engagement. For example, SM users' interactions with specific brands are concrete manifestations

of engagement marked by varying degrees of affective and/or cognitive and/or behavioral investment. By providing access to online content and facilitating communication, SMs greatly bring consumers closer to organizations. As a result, online platforms have led companies to adapt their influence strategies to build strong relationships with users and thus increase their engagement rate. The scientific literature on consumer

engagement affirms that interactivity with the brand is a prerequisite for engagement.

1. LITERATURE SURVEY

The conceptual foundations of consumer engagement build on relationship marketing theory. For a company, a relationship orientation typically creates a competitive advantage, which in turn exerts a positive impact on its performance. However, in addition to myriad types of engagement described in the marketing literature (e.g., brand engagement in self-concept, customer brand engagement or consumer brand engagement), definitions of engagement also abound. Hollebeek (2011) construes engagement as the consumer's level of motivation relative to the brand and their context dependent state of mind, characterized by specific levels of cognitive, emotional, and behavioral activities. Brodie et al. (2011) define engagement as a psychological state induced by consumer's interactivity and co-creative experiences with the object. Although some definitions have aspects in common, scientific support on the nature of the concept of engagement in marketing is scant.

2. SYSTEM ANALYSIS

3.1 Existing System

The existing system contains the following drawbacks:

- All the segmentations are search based
- Difficult to gather the data and segment them accordingly
- The results are not really accurate as the clustering is not close enough to determine accurate centroids

3.2 Proposed System

Our proposed system has the following features:

- Develop the system to get easy visualization techniques
- Increase the data set to accommodate many data points so that results will be more accurate
- Segment the products directly according to the customer group .

4. IMPLEMENTATION

⇒ **Visualization:**

Matplotlib: For creating static, interactive, and animated visualizations.

Plot Types:

- Matplotlib supports a variety of plot types, including line plots, scatter plots, bar plots, histogram plots, pie charts, contour plots, and more.

- These plot types can be created using functions from the matplotlib.pyplot module or through the object-oriented interface provided by Matplotlib.

Customization:

- Matplotlib allows extensive customization of plots, including control over colors, line styles, markers, labels, titles, fonts, grid lines, and axis ticks.
- Plots can be customized using keyword arguments in plot functions or by accessing individual plot elements through methods and attributes.

5. System Design

5.1 Use Case Diagram

Coding Influencers

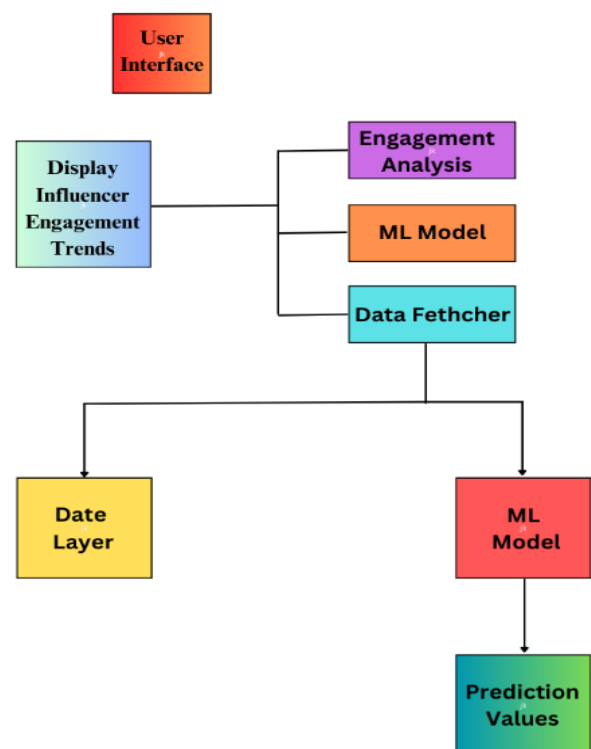
Use Case:

Analysis

```
...
...
... <string>:FutureWarning:
    Passing 'palette' without assigning 'hue' is deprecated and will be removed in v0.14.0. Assign the 'y' variable to 'hue' and set 'legend=False' for the same effect.
...
... <string>:FutureWarning:
    Passing 'palette' without assigning 'hue' is deprecated and will be removed in v0.14.0. Assign the 'y' variable to 'hue' and set 'legend=False' for the same effect.
...
... <string>:FutureWarning:
    Passing 'palette' without assigning 'hue' is deprecated and will be removed in v0.14.0. Assign the 'y' variable to 'hue' and set 'legend=False' for the same effect.
...
... <string>:FutureWarning:
    Passing 'palette' without assigning 'hue' is deprecated and will be removed in v0.14.0. Assign the 'y' variable to 'hue' and set 'legend=False' for the same effect.
```

5.2 Architecture Diagram

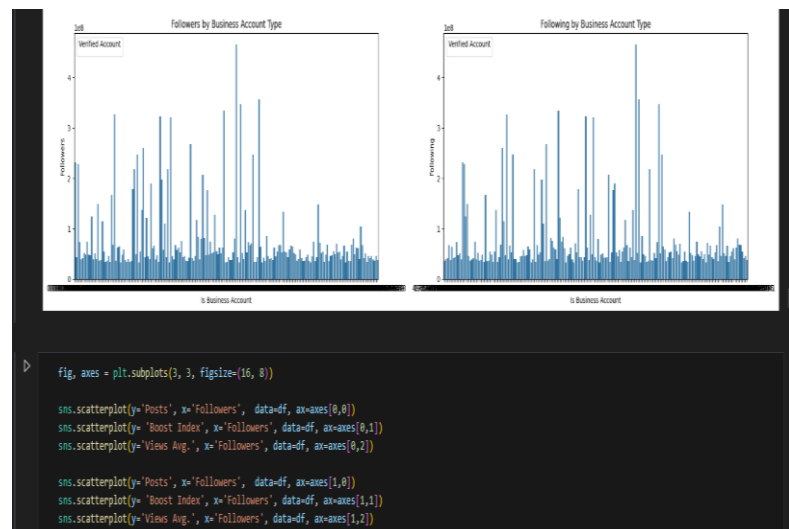
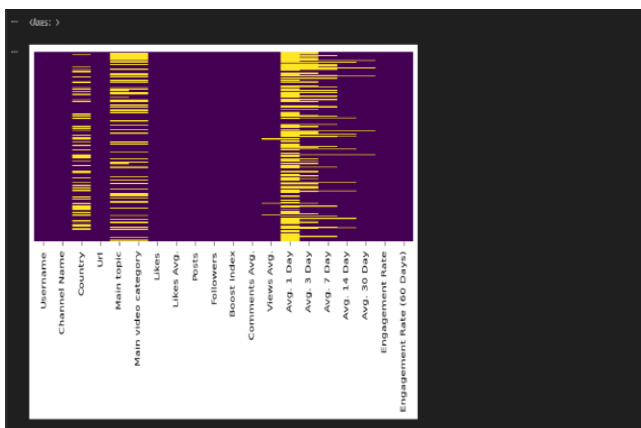
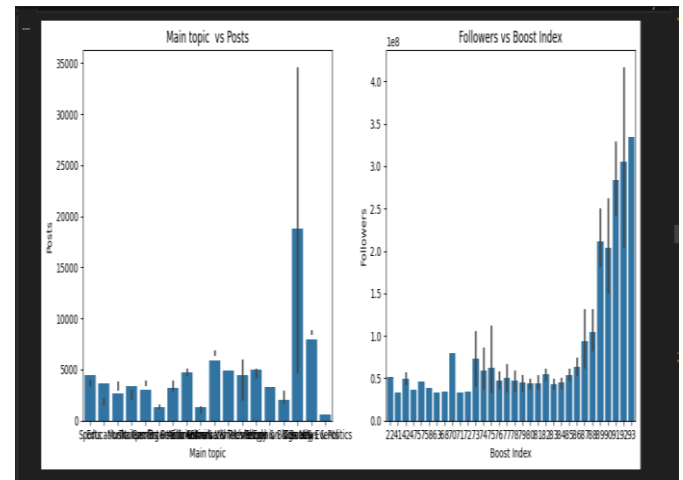
Architecture Diagram



6. CODE AND OUTPUT SCREENS

```
## coding influencers: follower & engagement analysis
## -----
## About the dataset
## This dataset comprises data from over 2000 leading Instagram kishu coding influencers. The data points included in this dataset are as follows:
#Followers count
#Profile type
#Account type
#Engagement score
#Categories
#Location
#external/ bio links
#Hashtags used
#Brand affiliation
#Bio
#Highlights
#Postur

import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import json
```



7. CONCLUSION

In influencer BW and TT Instagram, it clearly explains to us that both of them are actively using code mixing. They have their own reasons about why and when they use code mixing. So, there are some points that can be concluded from the data found: (1) The influencers use code mixing because they want Indonesian people to develop themselves by mastering English language. English has become one of international language that is always used for communication among people from different countries, and so many also use it for business. They want to give example to people, especially their followers that English can be fun and everyone can speak English. This reason is in line with one of Chukwuere's research findings that social media can lead to change in social and personal lifestyle both academically and off-academic (Chukwuere and Chuckwuere (2017); (2) The influencers use code mixing because it has been a habit for them. The habit is because they grow up with family and friends who speaks English or they went to international school and college. The Influencers post in certain time because that is active time for them and their followers online in Instagram. If they post in certain time, the followers will more actively give feedback to their post. It can be concluded that the use of code-mixing by the influencers

arouse the followers' motivation to study English language and through social media, it can be the way to practice English for the followers.

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