

Exploring the affiliate marketing model's impact on consumer behaviour using fuzzy logic implications for virtual marketers

Abstract

Fuzzy marketing takes into account the extent to which a client belongs to certain groups, and as a result, it enables customers to be targeted with communications that emotionally engage them. We conducted a thorough literature study using bibliometric analysis to analyse a sample of 96 articles from the SCOPUS database. Our goal was to identify research activity on this subject up to December 2022. The purpose of this endeavour was to get a more in-depth understanding of the significance of fuzzy logic in the context of marketing strategy. For the purpose of providing assistance to marketing experts, it was successful in creating a relationship between fuzzy logic and marketing. As an example, the findings indicate that the use of strategies such as fuzzy marketing or the fuzzy marketing mix model improves the organization's capacity to strengthen client connections, profitability, and marketing performance.

Keywords: fuzzy logic; fuzzy marketing; marketing strategy; consumer behavior

1. Introduction

The contemporary business environment is very competitive due to the commercial landscape's variety and increasing globalisation. Fuzzy logic was thus included into marketing models to provide answers that were precisely tailored to each unique customer. Fuzzy logic, according to Hernández and Hidalgo (Hernández, A.B., 2020), is based on behavioural observations of people. For example, fuzzy logic is a method that imitates how individuals approach issues and develop views by depending more on values that are unclear or hazy than on indisputable truths or lies. According to Scott, fuzzy logic is a computer technique that stems from the mathematical study of multivalued logic (Scott, D 2021). In an attempt to optimise efficiency, this approach processes several truth values using the same variable. Unlike classical logic, which requires claims to be either entirely true or completely false, fuzzy logic utilises true values that vary from 0 to 1 (Liu, J.; Yan, X. 2009). This implies that rather of relying just on a single data point, the algorithm may provide solutions based on data ranges (Khan, N. 2013). For the purpose of interpreting data for information that has relative or subjective meanings, fuzzy logic may be used in this application. In real-world scenarios, statements that are either completely untrue or completely true are uncommon due to the fact that individuals have diverse ways of seeing and interpreting information (Tallón-Ballesteros, A.J. 2020). Take, for instance, the possibility that buyers would understand marketing content in a different way, which will result in different choices and intents.

The notion of "fuzzy marketing" was developed as a result of applying the concepts of fuzzy logic to the process of making marketing choices. People's thoughts and actions are reflected in it, and it provides an estimation of the outcomes that arise from their prior knowledge and experience (Noori, B 2015). Fuzzy logic in marketing indicates that, in this case, the truth coefficients might be anywhere from 0 to 1. This suggests that there are "shades of grey" viewpoints rather than simply true/false binary absolutes when it comes to customer

behaviour and the intake of marketing material (Aly, S2004). Contrary to popular belief, customers are neither predictable or preset; rather, they are inherently confused. Even if a consumer has already bought a certain product this week, it is possible that he may still be required to make a further purchase of the same thing the next week (Stephen, W.Y. 2006). Consequently, fuzzy logic favours recognising customers as unique individuals and real persons as opposed to grouping them together using signal data inside a certain category (Munn, Z 2018). This is because fuzzy logic distinguishes between individuals and groups. In light of this, this strategy makes it possible to develop promotional messages that elicit an emotional response from the target audience and heighten the likelihood of favourable behaviours and results (Donthu, N 2021). As a result, a comprehensive literature evaluation that included bibliometric analysis of 96 sources was carried out in order to provide more evidence of the relationship between fuzzy logic and marketing. This was done with the intention of enhancing the efforts of marketing experts to attain competitiveness in an uncertain business environment.

2. Related work

Akin, M. (2023) states that affiliate marketing is used in some form by over 80% of American merchants and marketers. Rosário (2021) projects that US investment in this field has increased thrice in the previous 10 years and will reach \$8.2 billion by the end of 2022. One aspect of affiliate marketing is the formation of a contract between affiliate partners. According to Hayes (2022), affiliates "earn a commission by promoting a product or service made by another retailer or advertiser." In most cases, the commission is a compensation that is given to the shop or advertiser in exchange for a certain outcome, such as a completed transaction or a click on a link. According to Rosario, A.T. 2021, affiliate programmes, for example, are responsible for thirty percent of the income generated by the merchants who participate in them.

It was predicted that the social media influencer marketing sector reached \$13.8 billion in revenue in the previous year (Rosário, A.T. 2020). This growth has occurred concurrently with the expansion of the affiliate marketing industry. In return for their endorsement of a brand, this strategy pays certain social media influencers—who are often referred to as "affiliates" in some circles—a commission on purchases, lead signups, or clicks (Rosário, A.T 2021). Unlike other digital marketing methods like programmatic advertising, which is concentrated on statistical drivers for advertising and publisher strategies, influencer affiliate marketing is relationship-focused. Participants are provided with real-time performance analytics in addition to insight into the audiences with whom they are attempting to interact. These essential tools are improved by content that is developed by influencers and that provides value to the customer while also complementing the message that the advertiser is trying to convey (Linnenluecke, M.K 2022).

The fact that there have been several demands for further academic research on all types of influencer marketing is indicative of this (Xiao, Y 2019). As a result of this trend, it is essential for marketers to appeal to customers via material that provides some value or advantage, rather than just conveying branded messages.

One indicator that may be used to determine the worth of social media material for users is the quantity of behavioural interaction (likes and comments) that a particular piece of content gets. Because it demonstrates how successfully promotional material provided by influencers on behalf of businesses interacts with targeted social media users, engagement is a highly valued key performance indicator (KPI) for all parties engaged in affiliate marketing agreements (Bu, Q.; Zhang, F 2013). This is because involvement demonstrates how well promotional content is disseminated. Because there is a risk involved in their interactions for both sides, influencers and the marketers that pay them to promote their products are worried about the amount of engagement that promotional postings produce. This is because of the connection that exists between advertising and influencers.

Influencers may see a decline in their following when they post content that is unappealing to their audience. This might thus result in a drop in revenue in the future. As far as we are aware, there is a conspicuous dearth of research investigating the ways in which linguistic components in affiliate marketing postings by social media influencers affect the degree of behavioural engagement that these kinds of posts generate. This is true even though earlier studies have looked at the effects of certain components of postings on social media that businesses have shared via their own channels.

The point of our study is to fill in this gap in the research by presenting influencer affiliate marketing as a new and different type of social media marketing and by finding the factors that make people interact with influencer affiliate content. To fill this gap in the marketing literature, we put together the results of past studies on the effects of messages and the different types of language used to predict how the language used in ad posts from influencers would get people to act. The Elaboration Likelihood Model (ELM) is used to look at how the language used in celebrity ad posts on their Instagram feeds affects interaction. For this reason, earlier research has shown the useful part language plays in how our minds and emotions process information. By building a framework, we suggest that language elements that stimulate central processing lead to lower levels of total involvement, while those that stimulate peripheral processing lead to higher levels of participation. The construction of a big dataset consisting of affiliate marketing posts made by influencers is accomplished via the use of text mining and natural language processing in order to experimentally evaluate our predictions.

The findings of this study offer a number of important advances to marketing theory and practice. To begin, we expand upon the scholarly work that has already been done on the factors that generate participation on social media. via the identification of certain linguistic signals that encourage increased behavioural interaction with material that is provided by influencers for affiliate marketing uses. We build a massive data set consisting of affiliate marketing posts made by genuine influencers and the metrics that correlate to those posts so that we can use it for analysis. As a result, our study responds to the increased need for research on influencer marketing that makes use of large amounts of data. (Lu, H.; Cao 2009) and makes use of approaches that provide a high degree of validity from an external perspective. This is one of the rare studies that explores consumer behaviours by making use of data collected from actual customer contact in the real world.

Furthermore, this study provides helpful direction for marketing practitioners by providing data-driven suggestions for strategies that influencers and businesses may directly follow without incurring any extra costs. These suggestions are ready for immediate implementation. Our research sheds light on the ways in which certain language signals affect influencer affiliate marketing engagement, a crucial indicator that influencers and the brands who hire them to promote their goods both highly regard. Additionally, we provide smart and practical advice to influencers looking to expand their network and brand value as well as to businesses looking to reduce their financial risk by collaborating with influencers via an affiliate pay model. Lastly, we provide practical guidance that, when combined with the guidelines and communication goals, may be used to produce more engaging material for influencer affiliates.

3. Statement of the problem

Affiliate marketing is becoming more common in the digital marketplace as businesses strive to broaden their customer base and increase sales by forming connections with influential individuals and media. The research will give useful insights into the efficacy of affiliate marketing and its possible influence on consumer behaviour.

4. Aim of the study

- for the purpose of conducting research about the respondents' degree of familiarity with affiliate marketing.
- in order to have an understanding of the attitude and perspective that customers have towards the implementation of affiliate marketing.

5. Methodology

5.1 Data Source:

The research was carried out in the district of Coimbatore, Tamil Nadu, India. Forms created in Google have been used to gather primary data, and these forms have been sent to the responders.

5.2 Size of the Sample:

The sample was compiled from responses from 250 different individuals.

5.3 Sampling Technique:

A method known as simple random sampling is used to pick each person in a random fashion, with the purpose of collecting responses from respondents via the use of a structured questionnaire.

5.4 Tools for Analysis:

The appropriate hypothesis was formulated and put to the test at the appropriate location.

5.5 Questionnaire:

Respondents were asked about their level of awareness about affiliate marketing

6. Scope of the study

The investigation of many elements of affiliate marketing from the point of view of customers is the primary objective of this study. In addition to determining the variables that inspire consumers to purchase via affiliate websites, the purpose of this research is to ascertain the amount of knowledge that respondents have about affiliate marketing.

7. Limitation of the Study

The consumer base are restricted to the small sample size of just 200 persons

- The scope of the research was restricted to the city of Coimbatore.

8 Results and Discussion

8.1 Demographic Profile

45 percent of the respondents were in the age range of 21 to 30 years old. 53 percent of the respondents are female, and 46 percent of the respondents are students. This information pertains to gender.

- 55.2 percent of the respondents are from nuclear families. This information pertains to the respondents' family backgrounds.
- There were a total of 200 people participated in the survey, and 62 percent of them live in metropolitan regions.

8.2. Descriptive Statistics

The table that follows 8.2.1 gives an overview of the level of awareness about affiliate marketing.

Descriptive Statistics					
Particulars	N	Minimum	Maximum	Mean	Std. Deviation
I am familiar with the concept of affiliate marketing	200	1	5	4.06	1.117
I often purchase products or services through affiliate marketing links	200	1	5	3.96	.987
I am more likely to click on an affiliate marketing link when browsing for product or services online	200	1	5	4.04	1.058
I am aware that a product or service is being promoted through affiliate marketing.	200	1	5	4.10	.954

Source: Primary data

The overall mean rating is a representation of the opinion of the influence that the marketing campaign had on the intention to make a purchase. It was discovered that the statement "I am more likely to click on an affiliate marketing link when browsing for product or services online" received the highest mean score (4.10), with a standard deviation of 0.954. On the other hand, the statement "I frequently purchase products or services through affiliate marketing links" received the lowest mean score (3.96), with a standard deviation of .987.

An attitude towards affiliate marketing is shown in the following table: 8.2.2

Descriptive Statistics					
Particulars	N	Minimum	Maximum	Mean	Std. Deviation
I find affiliate marketing to be helpful to discover new products/services	200	1	5	4.14	1.003
I will make a purchase through an affiliate link after clicking on it.	200	1	5	4.08	.921
I often click on affiliate links while browsing online.	200	1	5	4.01	1.000
I would recommend products I discover through affiliate marketing to others.	200	1	5	4.04	.961
It is important for marketers to disclose when promoting affiliate products	200	1	5	4.09	.934
I would continue to follow influencers who promote affiliate products, if I feel they are being too promotional.	200	1	5	4.12	.952
I would unsubscribe or unfollow a website or influencer who consistently promotes affiliate products that don't interest me.	200	1	5	4.09	1.003

Source: Primary data

The overall mean rating is a representation of the respondents' attitudes with respect to making purchases via affiliate marketing. It was discovered that the statement "I find affiliate marketing to be a helpful way to discover new products/services" received the highest mean score (4.14), with a standard deviation of 1.003. On the other hand, the statement "I often click on affiliate links when I come across them while browsing online" received the lowest mean score (4.01), with a standard deviation of 1.000.

A perspective on affiliate marketing is shown in the following table: 8.2.3

Descriptive Statistics					
Particulars	N	Minimum	Maximum	Mean	Std. Deviation
The affiliate marketer/content provider is consistent in providing quality information	200	1	5	4.14	1.016
The website is concerned about my security while making payment	200	1	5	3.99	.877
The content provided is Reliable	200	1	5	4.17	1.028
I have confidence in purchasing online redirected through affiliate links	200	1	5	4.12	1.023
The various websites providing information about the product can be trusted to purchase it.	200	1	5	4.19	1.044
I am most likely to continue using affiliate marketing in future.	200	1	5	4.03	.959

Primary data are the source. When it comes to making purchases via affiliate marketing, the overall mean rating is a representation of the respondents' perspectives. "The various websites providing information about the product can be trusted to purchase it" received the highest mean score (4.19), with a standard deviation of 1.044. On the other hand, "The website is concerned about my security while making payment" received the lowest mean score (3.99), with a standard deviation of .877. The mean score for "The website is concerned about my security while making payment" was the lowest.

8.3 ANOVA Analysis

Analysis of variance (ANOVA) was carried out. These findings are summarised in the table below.

The demographic factors and the degree of awareness about affiliate marketing are shown in the table 8.3.1 that can be found below.

There is no statistically significant difference between the demographic variables, according to the null hypothesis (H0). The degree of familiarity with Internet marketing affiliates

A comparison of demographic factors and the degree of familiarity with affiliate marketing is shown in Table No. 8.3.1.

Personal Factors		Sum of Squares	Df	Mean Square	F	Sig.
Age	Between Groups	6.937	3	2.312	3.020	.031
	Within Groups	150.075	196	.766		
	Total	157.012	199			
Educational Qualifications	Between Groups	7.211	3	2.404	3.145	.026
	Within Groups	149.801	196	.764		
	Total	157.012	199			
Monthly Income	Between Groups	17.207	3	5.736	8.041	.000
	Within Groups	139.805	196	.713		
	Total	157.012	199			
Occupation	Between Groups	9.718	3	3.239	4.609	.004
	Within Groups	137.769	196	.703		
	Total	147.488	199			

ANOVA analysis was performed to determine whether or not there is a difference between demographic characteristics and the degree of knowledge about affiliate marketing. This means that there is a significant difference between the demographic variables and the amount of knowledge about affiliate marketing. The null hypothesis is not true because of this.

It has been determined that there is no significant difference between the demographic variables and the attitude towards affiliate marketing. This is the null hypothesis (H₀). A comparison of demographic factors and attitudes towards affiliate marketing is shown in Table No. 8.3.2.

Personal Factors		Sum of Squares	Df	Mean Square	F	Sig.
Age	Between Groups	6.745	3	2.248	3.998	.009
	Within Groups	110.222	196	.562		
	Total	116.967	199			
Educational Qualifications	Between Groups	6.608	3	2.203	3.912	.010
	Within Groups	110.359	196	.563		
	Total	116.967	199			
Monthly Income	Between Groups	11.063	3	3.688	6.825	.000
	Within Groups	105.905	196	.540		
	Total	116.967	199			
Occupation	Between Groups	5.023	3	1.674	2.931	.035
	Within Groups	111.944	196	.571		
	Total	116.967	199			

8.4 ANALYSIS USING t-TEST DIFFERENCE BETWEEN GENDER AND LEVEL OF AWARENESS TOWARDS AFFILIATE MARKETING

An application of the T-test has been made in order to determine the degrees of knowledge about affiliate marketing that are present among the respondents regardless of their gender.

Table 8.4.1: (a) demonstrating that there is a difference according to gender in terms of the level of awareness about affiliate marketing

Gender	Level of awareness towards affiliate marketing		
	Mean	S.D.	NO.
Male	4.2207	.72666	94
Female	3.8774	.98576	106

The main data (106), the source Given that the mean value for male respondents is the highest (4.2207), it is evident that male respondents have a higher degree of knowledge about affiliate marketing in comparison to female respondents. This is shown by the fact that the greatest mean value is discovered among male respondents.

According to Ho, "the average level of awareness regarding affiliate marketing and the gender of the respondents"

Table 8.4.1(b): t-Test for gender and affiliate marketing awareness among responders T-test for mean equality

Particulars	T	Df	F	Sig.
Equal variance Assumed	2.774	198	7.158	.008
Equal variances not Assumed	2.824	191.798		

At a significance level of 5%, the S-value is significant. The result of the t-test is lower than the threshold of significance that is known as 5%.

Hence the hypothesis is rejected.

ANALYSIS USING t-TEST

DIFFERENCE BETWEEN GENDER AND ATTITUDE TOWARDS AFFILIATE MARKETING

An application of the t-test was used in order to determine the gender differences in the respondents' attitudes towards affiliate marketing.

Gender	Attitude towards Affiliate Marketing		
	No.	Mean	S.D.
Male	94	4.2508	.49827
Female	106	3.9272	.91892

Source: primary data

According to the data shown in the table above, the mean value that is discovered to be the highest among male respondents is 4.2508.

Specifically, the respondents' perspectives on affiliate marketing and their gender are being discussed.

Table 8.4.2, section b: Analysis on the Relationship Between Gender and Attitudes Towards Affiliate Marketing t-test to determine whether or not the means are equal

Particulars	t	df	f	Sig.
Equal variance assumed	3.040	198	20.400	.000
Equal variances not assumed	3.141	165.614		

S- Significant at 5% level of significant

At the 5% level of significance, the S-Significant score

The result of the t-test is lower than the threshold of significance that is known as 5%. Accordingly, it can be deduced that male and female respondents do, in fact, have considerably different perspectives about affiliate marketing.

As a result, the hypothesis is not supported.

8.5 Suggestions

□ Affiliate marketing has been more popular and is proving to be an efficient method of reaching clients, particularly among younger and female audiences. These clients should thus be the primary focus of affiliate marketers, and their requirements should be met.

□ It is essential to make certain that they provide clients product suggestions that are pertinent to their needs and make use of social evidence, such as ratings and reviews from customers, which may contribute to an improvement in the level of trust and convenience that customers experience.

□ It is important for affiliate marketers to refrain from making promises that are not attainable or exaggerating the advantages of making purchases via affiliate marketing.

The majority of people who purchase online via affiliate marketing are often unaware that they are engaging in this activity. Affiliate marketers are obligated to disclose their usage of affiliate marketing on their websites or during the checkout process in order to solve this issue. This more openness is necessary in order to address the problem. This has the potential to assist customers in making selections based on accurate information and to foster trust between the marketer and the consumers.

5. Conclusions

In response to the increasing competition in both domestic and foreign markets brought about by globalisation and diversification, businesses have begun to use consumer-centric marketing strategies via the utilisation of data analytics. On the other hand, the human marketing optimisation of these organisations has been hindered by the excessive amount of data and the reduction of clients to simple data sets. As an example, according to a marketing plan, clients that belong to a certain market segment are addressed collectively, regardless of the disparities that exist between them. Businesses who use this tactic miss out on opportunities to develop emotionally invested, mutually beneficial, and long-lasting connections with their customers that bolster their competitive advantage. Marketing strategies may address this issue by using fuzzy logic and techniques, which encourage marketers to see their customers as erratic and imprecise individuals. The majority of the information that is utilised in real life is subjective or relative, which is something that fuzzy logic acknowledges, in contrast to classical logic, which resolves contents as true or untrue. Neither its definition nor its truth value can be discerned. As a result, truth values may be anything between 0 and 1, for instance, according to fuzzy logic. Within the context of this case, fuzzy reasoning recognises that yes/no responses do not always reflect on the actions or intentions of the customer. It stimulates the investigation of the issues that occur when clients do not have answers that are definite, such as "maybe" and "if." Performing an analysis of how a consumer fits into a certain market group is an essential part of fuzzy marketing. In this scenario, businesses place a higher priority on personalised marketing activities that make the client feel understood and appreciated as opposed to sending out bulk customised promotional communications.

References

Hernández, A.B.; Hidalgo, D.B. Fuzzy Logic in Business, Management, and Accounting. *Open J. Bus. Manag.* 2020, 8, 2524–2544. [Google Scholar] [CrossRef]

Scott, D. Fuzzy Logic. Investopedia 2021. Available online: <https://www.investopedia.com/terms/f/fuzzy-logic.asp> (accessed on 31 December 2022).

Liu, J.; Yan, X. A commercial real estate investment analysis from CBR approach. In *Proceedings of the 2009 International Conference on Management Science and Engineering ICMSE, Moscow, Russia, 14–16 September 2009*; pp. 1921–1927. [Google Scholar] [CrossRef]

Khan, N.; Khan, F. Fuzzy-based decision-making for promotional marketing campaigns. *Int. J. Fuzzy Log. Syst.* 2013, 3, 64–77. [Google Scholar] [CrossRef] [Green Version]

Tallón-Ballesteros, A.J. Fuzzy Expert Pricing Systems and Optimization Techniques in Marketing Science. *Fuzzy Syst. Data Min. VI Proc. FSDM 2020*, 331, 255. [Google Scholar]

Noori, B. Developing a CBR system for marketing mix planning and weighting method selection using fuzzy AHP. *Appl. Artif. Intell.* 2015, 29, 1–32. [Google Scholar] [CrossRef]

Aly, S.; Vrana, I. Fuzzy expert marketing-mix model. *Agric. Econ.* 2005, 51, 69–79. [Google Scholar] [CrossRef] [Green Version]

Stephen, W.Y.; Cheng, K.L.; Choy, H.Y. An intelligent cloud-based customer relationship management system to determine flexible pricing for customer retention. In *Proceedings of the 2016 Portland International Conference on Management of Engineering and Technology (PICMET), Honolulu, HI, USA, 4–8 September 2016*; pp. 633–641. [Google Scholar] [CrossRef]

Munn, Z.; Peters, M.D.J.; Stern, C.; Tufanaru, C.; McArthur, A.; Aromataris, E. Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. *BMC Med. Res. Methodol.* 2018, 18, 143. [Google Scholar] [CrossRef] [PubMed]

Donthu, N.; Kumar, S.; Mukherjee, D.; Pandey, N.; Lim, W.M. How to conduct a bibliometric analysis: An overview and guidelines. *J. Bus. Res.* 2021, 133, 285–296. [Google Scholar] [CrossRef]

Akin, M.; Eyduran, S.P.; Krauter, V. Food Packaging Related Research Trends in the Academic Discipline of Food Science and Technology: A Bibliometric Analysis. *Clean. Circ. Bioecon.* 2023, 5, 100046. [Google Scholar] [CrossRef]

Rosário, A.; Moniz, L.; Cruz, R. Data Science Applied to Marketing: A Literature Review. *J. Inf. Sci. Eng.* 2021, 37, 1067–1081. [Google Scholar] [CrossRef]

Rosário, A.T.; Raimundo, R. Consumer Marketing Strategy on E-commerce in the Last Decade. *J. Theor. Appl. Electron. Commer. Res.* 2021, 16, 164. [Google Scholar] [CrossRef]

Rosário, A.T.; Dias, J.C. Sustainability and the Digital Transition: A Literature Review. *Sustainability* 2022, 14, 4072. [Google Scholar] [CrossRef]

Rosário, A.T.; Raimundo, R.J.; Cruz, S.P. Sustainable Entrepreneurship: A Literature Review. *Sustainability* 2022, 14, 5556. [Google Scholar] [CrossRef]

Linnenluecke, M.K.; Marrone, M.; Singh, A.K. Conducting systematic literature reviews and bibliometric analyses. *Aust. J. Manag.* 2020, 45, 175–194. [Google Scholar] [CrossRef]

Xiao, Y.; Watson, M. Guidance on conducting a systematic literature review. *J. Plan. Educ. Res.* 2019, 39, 93–112. [Google Scholar] [CrossRef]

Abbasi, Z.; Anboohi, Z.K. Formulating an optimal strategic marketing model by integrating SWOT and fuzzy. *Res. J. Appl. Sci. Eng. Technol.* 2013, 5, 3423–3434. [Google Scholar] [CrossRef]

Lu, H.; Cao, J. Personal credit scoring model based on integration of rough set and GA-neural network. *Nanjing Li Gong DaxueXuebao/J. Nanjing Univ. Sci. Technol.* 2009, 33, 194–198. [Google Scholar]

Bu, Q.; Zhang, F. The risk assessment of marketing management system on the basis of multi-level fuzzy comprehensive evaluation. In *Proceedings of the 6th International Conference on Management Science and Engineering Management: Focused on Electrical and Information Technology*, Islamabad, Pakistan, 11–14 November 2012; Springer: London, UK, 2013. [Google Scholar] [CrossRef]

De Maio, C.; Gallo, M.; Hao, F.; Loia, V.; Yang, E. Fine-grained context-aware ad targeting on social media platforms. In *Proceedings of the 2020 IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, Toronto, ON, Canada, 11–14 October 2020; pp. 3059–3065. [Google Scholar] [CrossRef]