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Influencers' Impact on Consumer Engagement and Sales Conversion on Social Media: Facebook vs Instagram

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ABSTRACT

The impact of social media influencers on consumer engagement and sales conversion on Facebook and Instagram is deliberate in this study. As a quantitative research approach, it quantifies the user engagements and buying patterns, and shows a distinct variance of both the platforms. The study shows that engagement and conversion rates are higher with Instagram compared to Facebook, more so for female users. However, males use Facebook more than other social network sites, Facebook more than any other social network site.

INTRODUCTION

The term influence refers to the capability or authority to impact the ideas, conduct, or deeds of others, encompassing the skill to mould viewpoints, choices, and results. This potential for influence can originate from diverse origins like proficiency, authorisation, charm, societal standing, or convincing communication. Furthermore, influence extends beyond individuals and to establishments, media, trends, and cultural factors. Next, Influencers are the people who can influence and alter the viewpoints, actions, choices, and inclinations of a particular audience or community. This influence is frequently rooted in their perceived genuineness, knowledge, relatability, or trustworthiness. Using influencers in the realm of marketing leverages the power of word-of-mouth recommendations in the digital age, where social media has amplified individuals' abilities to influence their followers' decisions. By partnering with influencers, brands can tap into their existing trust and credibility, reaching a more receptive and engaged audience while achieving specific marketing goals, whether increasing brand awareness, driving website traffic, or boosting product sales. The Association of National Advertisers Advertisers (2021) defined it as "a type of marketing which focuses on leveraging individuals who have influence over potential buyers and orienting marketing activities around these individuals to drive a brand message to the larger market." These individuals have established a committed and involved group of supporters, often on social media networks, where they distribute content and suggestions that strike a chord with their audience. Through their online presence and the connections they establish with their followers, influencers can shape consumer decisions, set trends, and even contribute to cultural shifts.

In short, the ability of YouTube and Facebook to impact well-being, social interactions and improve relationships, indicates that Facebook and Instagram are different from each other. However, social media influencers also changed marketing strategies, making the influencer marketing lead in a significant and effective industry investment. Decision making is based on these platforms and due regards to social media influencers' dynamics in the social media influencer market context, consumers build up their own beliefs about why their favourite influencer promote and advertise a product brand (Kim & Kim, 2022).

The findings of this study highlight the enormous influence influencers have with regard to consumers' engagement and sales conversion rates on social media platforms, in particular, on Facebook and Instagram. It's shown that influencers make a huge impact on how consumers use and how they interact with brands, leading to purchase decisions. After analysing data collected from 190 respondents around the world, it was found that Facebook and Instagram differ in audience engagement and the conversion rates driven by influencer interactions which are statistically significant. Overall, Instagram is known to have higher engagement rates, but Facebook has higher engagement rates for both genders. Moreover, there is a notable difference due to gender in our buying behaviour, for instance on Instagram female have a higher buying rate than males.

These insights tell us that influencers spend can be multiplied only if the influence is aligned with the brand's social media campaign goals. However, by utilising the strengths and characteristics unique to each platform, businesses will be able to craft their influencer strategies to not only reach their target audience, but also to drive sales conversions.

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Additionally, the findings show why businesses need to regard the demography of gender when designing their marketing strategies on Facebook and Instagram. For example, you can tailor content and advertising campaigns to individual gender segments and rejig and optimise them specially to cater more to users on platforms such as Instagram where the differences in the buying behaviour of genders are more pronounced. In conclusion, this study presents a valuable ideation to business and marketers regarding the influence role on consumer engagement and sales conversion via social media platforms, enabling us to understand what to promote for enhancement of the marketing objectives through the use of influencer marketing. Businesses who realise those nuances of audience behaviours and platform dynamics on social media can position themselves strategically to capitalise on the opportunities of influencer marketing in social media (J, 2023).

It is noted that social media just continues to grow and influencer marketing has become an eminent marketing tactic and a vital marketing strategy. Consumer behaviour has already been influenced by influencers who also have the power to reshape brands' marketing efforts. In 2020, that was quite likely about 3.6 billion social media users who were 4.41 billion in 2025 (Statista, 2020). Therefore, firms are to utilise social media to connect with consumers (Osei-Frimpong & McLean, 2018). Social media platforms like live chats and commenting features allow users (who may be celebrities and influencers, or individuals being followed) to talk directly with their favourite brands, other users and stars (Ao *et al.*, 2023). Thus, it is found that many firms are still using social media in every way possible to push it out, increase engagement and push feeds the brand on the consumers to buy products for their firms. A large number of loyal and dedicated social media followers characterize influencers. They are perceived as experts in their niches, and their followers often highly regard their recommendations. That's because marketers are still figuring out how to employ influencer marketing as an integral piece of multiple marketing campaigns while pinning down the return on investment from this tactic. Social media influencer marketing is the art of creating relationships with people that have critical audiences and bolster the brand, and then sharing the word with all of their followers. The latter has been established as a new, appropriate for brands, and extremely effective method for reaching and engaging with audiences online on social media (Vidani & Das, 2021). Nowadays, social media influencers are becoming a trend globally.

The impact of influencers is a critical aspect of influencer marketing in terms of crucial performance tools such as consumer engagement, brand awareness, and sales conversion. Businesses and marketers can understand how well their influencers are connecting with their target audiences, how well they create brand awareness, and how well they can build lasting relationships with potential new customers by analysing the influence and engagement of influencers against their sales conversion. Influencers on Facebook Live and Instagram posts are using different approaches on how they drive engagement in their social media influence. Using the power of live video streaming, the Facebook Live feature makes it possible for influencers to spark instant connections and have deep discussions with people. These sessions allow for longer duration sessions so that tutorials, Q&A sessions and live events are possible. At the same time, Instagram posts are showcasing visually appealing content, aimed for instant consumer viewing and participation through likes, comments and shares. Instagram enables content exploration through its heavy reliance on hashtags and guarantees a long term interest on influencers' profiles through its primateness. It is the flipped funnel, where brands need to decide which of these platforms makes more sense for their audience, what format they are working with and what their goals for engagement are and then adopt a dual strategy where they use each platform to its strengths.

To this end, this research tries to discover how Facebook Live and Instagram posts differ in terms of their impact and its result on consumer engagement and conversion. This study exploits data on consumer engagement and conversion rates across both platforms in order to gain insights into the relative strengths and weaknesses of these two social media site features and to offer help to businesses in determining how best to leverage these platforms to meet their marketing goals.

LITERATURE REVIEW

Facebook is a social networking site, published in 2004, which connects users to the world, facilitating their interactions with 'friends" which includes family, workmates, friends, and even people who do not know them in person. Ideas can be exchanged and resources like videos, images and music shared in this platform. With Facebook "liking" feature, a user is able to interact with content shared by the ones he or she follows. Users receive Facebook "likes," and they think that's them being supported by their 'online friend" (Ellison *et al.*, 2014; Wohn *et al.*, 2016). The popularity of The nature of use of Facebook has drawn in the nature of its use in people's well-being, including self-esteem, emotional support, and social connexion (Limniou *et al.*, 2022). Because Facebook users can so readily make ("like") contact with their peers, and link their posts to one another, the number of "likes" delivered to a user or each user's profile status and photos of other Facebook friends may support social comparisons (Steers *et al.*, 2014). Some researchers have also discussed how the stronger drive to social comparison may advertise and increase Facebook use to search information about others to boost self-esteem and depression (Nesi & Prinstein, 2015). Despite these, researchers who have studied how social media especially Facebook affects well being, self esteem, symptoms of depression and so on in users have revealed mixed findings of how there is a basis on use (passive or active) to give an explanation of the real and possible relation between these notions (Escobar-Viera *et al.*, 2018). New

research in social support and feelings of connectedness through the COVID -19 pandemic indicates that passive Facebook use is linked to poorer well being through upward social comparison. On the other hand, active use of Instagram is positively related to satisfaction with life and the negative effect of social support (Masciantonio *et al.*, 2021).

The second social media platform debuted in 2010 is Instagram. Unlike Facebook, it is more image focused, and has a heavier bent on giving users more choice in how they enhance their photos with a variety of filters. The Instagram users get the choice to post their pictures that they have personally taken and that are exclusively shared to their 'followers', or to make them public to the wider audience.

Nowadays social media influencers (SMI) are playing a very vital role. For 13 to 18 year olds, the survey commissioned by Variety magazine found that social media celebrities are more popular than Hollywood stars (Philip *et al.*, 2017). Social media is taking the place of conventional marketing day by day. Based on influencer tiers, from nano-influencers to mega-influencers based on their follower range, costs around 75-10,000 USD per post (Taslaud, 2022). It is unignorable that SMI communication has become a new mass phenomenon within only a few years. They are pivotal in market value and effectiveness, especially among youngsters. For example, the influencer industry in the United States was valued at $16.4 billion in 2022. In 2023, 89% of marketers using influencer marketing plans intend to expand or keep their investment. 92% of marketers believe influencer marketing is effective. Influencer Marketing Hub says influencer marketing addiction will exceed $21.1 billion by 2023 (Geyser, 2023). With the large and growing number of social media users, Social Media Influencers (SMIs) will likely increase. Among the many social media platforms, Facebook has around 2.9 billion active monthly users, and Instagram has 2.32 billion active users. Consequently, it can be deduced from the earlier conversation that Facebook and Instagram diverge regarding their characteristics and market expansion. Hence, it's prudent to exercise caution before pursuing identical investments on both platforms. This implies the necessity of establishing a hierarchy between the two. Examining distinct audience response rates across these platforms becomes imperative to achieve this.

MATERIALS AND METHODS

This study employs a quantitative research design to examine the impact of influencers on consumer engagement and buying behavior on two social media platforms, namely Facebook and Instagram. Here, convenience sampling and a non-probability sampling technique have been utilised to select participants. Convenience sampling allows for easy access to potential respondents who are active users of social media platforms. A sample size of 190 respondents is chosen based on the availability of participants and feasibility of data collection within the study's constraints. Data is collected through an online survey distributed to social media users worldwide. The survey includes questions related to consumer engagement, buying behaviour, and preferences for Facebook and Instagram. The survey instrument consists of 10-points rating scale, multiple-choice questions, and demographic questions. Descriptive statistics such as mean, standard deviation, and frequency distribution are calculated to summaries engagement and buying rates on Facebook and Instagram. Independent sample t-tests are conducted to compare engagement and buying rates between Facebook and Instagram. Chi-square tests are employed to analyse associations between demographic variables (gender, age) and engagement/buying rates on both platforms. Group statistics are used to compare engagement and buying rates by gender and age. Significance tests (e.g., Levene's test, t-tests) are utilised to determine statistical differences between groups. This study also ensures participant anonymity and confidentiality. Informed consent is obtained from all participants, and they are informed about the purpose of the study. However, the study focuses on Facebook, and Instagram, excluding other social media platforms.

RESULTS AND DISCUSSION

Descriptive of Engagement Rate of Facebook and Instagram

Facebook Live allows for real-time interaction with the audience, whereas Instagram posts are static and do not allow for immediate feedback. Moreover, Facebook Live offers the opportunity to ask questions and receive immediate responses from the host, which can increase engagement and participation. In technological leapfrogging, it is difficult to reach out a static statement on which social platform engages more people over time. However, as per StatistaX in 2017, Nearly half (44%) find Pinterest the most useful while only a small minority use Tumblr (7%) second. However, Facebook (94%), Twitter (68%), LinkedIn (56%), and Instagram (54%) follow (Kırcova *et al.*, 2021). As per the following table, Facebook Live has a lower mean value compared to Instagram, indicating a higher engagement rate with Instagram posts.

Table 1: Descriptive Engagement Rate of Facebook and Instagram

Descriptive Statistics of Engagement Rate			
		Facebook Engagement Rate	**Instagram Engagement Rate**
N	Valid	183	183
	Missing	0	0
Mean		2.585	4.596

Std. Deviation	2.461	2.728
Variance	6.057	7.440
Range	9.0	9.0
Minimum	1.0	1.0
Maximum	10.0	10.0

The statistical summary provides insights into the engagement rates on Facebook and Instagram based on a sample of 183 observations. The mean Facebook engagement rate is approximately 2.58, with a standard deviation of 2.46, indicating a moderate level of variability. In comparison, the mean Instagram engagement rate is higher at 4.60, with a slightly higher standard deviation of 2.73.

Both platforms exhibit a similar range of engagement rates from 1.0 to 10.0, suggesting consistent variability. The data shows no missing values, indicating a complete dataset. Overall, these statistics offer a snapshot of the distribution and central tendency of engagement rates on Facebook and Instagram, highlighting the higher average engagement on Instagram compared to Facebook in the given sample.

The frequency distribution for Facebook engagement rates illustrates the distribution of responses across different levels. The majority of observations, 60.7%, have an engagement rate of 1.0, followed by smaller percentages at other levels. The cumulative percent column indicates that approximately 65.6% of the data falls within the first two categories (1.0 and 2.0). As the engagement rates increase, the frequency and percentage decrease, with the highest engagement rate scale of 10.0 accounting for 1.6% of the total observations.

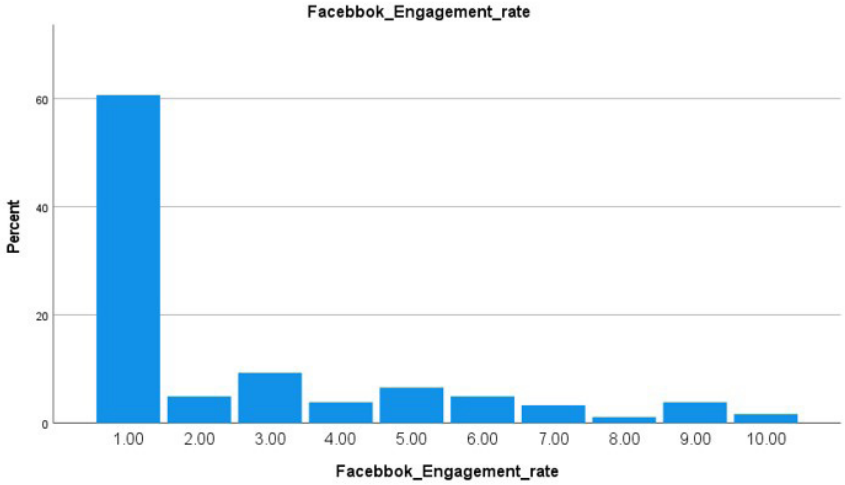

Figure 1: Facebook engagement

This distribution provides a clear overview of how respondents are distributed across various engagement levels on Facebook, emphasizing the prevalence of lower engagement rates in the given dataset. The frequency distribution for Instagram engagement rates provides a comprehensive view of the distribution of responses across different levels. The most common engagement rate is 1.0, accounting for 23.5% of the observations, followed by a gradual decrease in percentage as the engagement rates increase. Notably, the cumulative percent column shows that the majority of responses, 84.2%, fall within the first seven categories (1.0 to 7.0).

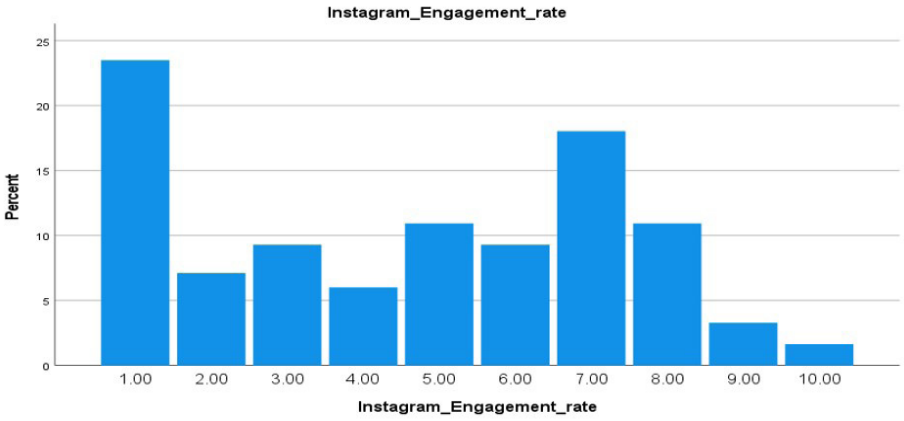

Figure 2: Instagram engagement rate

The highest engagement rate scale of 10.0 represents 1.6% of the total observations. Overall, this distribution reveals a diverse range of engagement rates on Instagram, with a concentration in the mid-range levels, emphasizing the varied nature of user engagement on the platform within the given dataset. If it observes to both Facebook engagement rate and Instagram engagement rate, it seems Instagram engagement is more saturated compared to Facebook engagement rate under 1 to 10 points scale.

Descriptive of Buying Rate of Facebook and Instagram

The statistics provided for Facebook and Instagram buying rates are based on a sample of 183 observations. The mean buying rate for Facebook is 2.1366, with a standard deviation of 2.21581, indicating a moderate level of variability in the data. In comparison, the mean buying rate for Instagram is slightly higher at 3.1749, with a standard deviation of 2.42061. Both platforms exhibit a similar range of buying rates from 1.0 to 10.0, suggesting consistent variability in user behavior. The data shows no missing values, implying a complete dataset. This statistical summary offers insights into the distribution and central tendency of buying rates on Facebook and Instagram, highlighting the relatively higher average buying rate on Instagram compared to Facebook in the given sample.

Table 2: Descriptive Statistics of Buying Rate

Descriptive Statistics of Buying Rate			
		Facebook Buying Rate	**Instagram Buying Rate**
N	Valid	183	183
	Missing	0	0
Mean		2.1366	3.1749
Std. Deviation		2.21581	2.42061
Variance		4.910	5.859
Range		9.0	9.0
Minimum		1.0	1.0
Maximum		10.0	10.0

The following chart shows the cumulative percentage of Facebook buying rate, indicating the running total of the valid percentages as you go down the categories. It starts at 71.6% for category 1.0 and accumulates as it moves down. Facebook buying rate in different category also graphed in following.

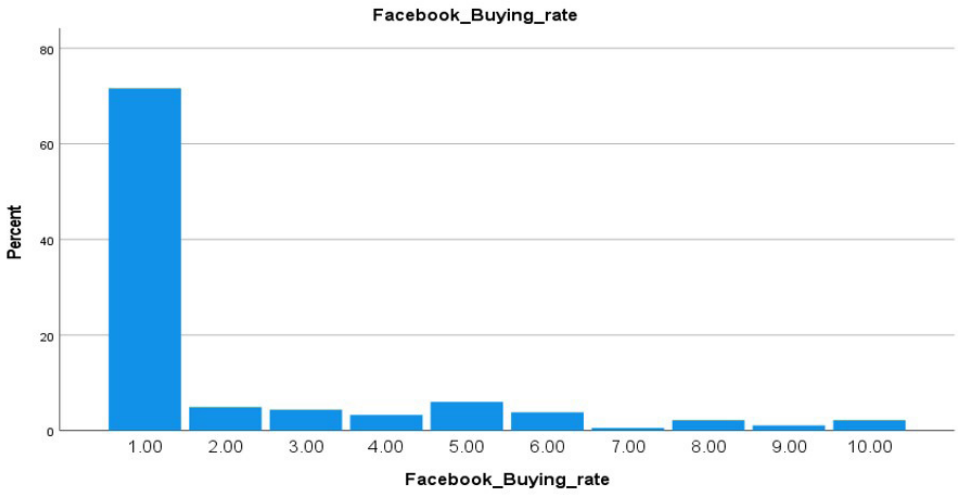

Figure 3: Facebook buying rate

The frequency distribution for Instagram buying rates reveals the distribution of responses across various levels within a sample of 183 observations. The most common buying rate is 1.0, accounting for 40.4% of the total observations, followed by a gradual decline in percentage as the buying rates increase. The cumulative percent indicates that approximately 62.3% of the responses fall within the first three categories (1.0 to 3.0). As the buying rates escalate, the frequency and percentage decrease, with the highest buying rate of 10.0 representing 1.1% of the total observations that has been shown in the following graph.

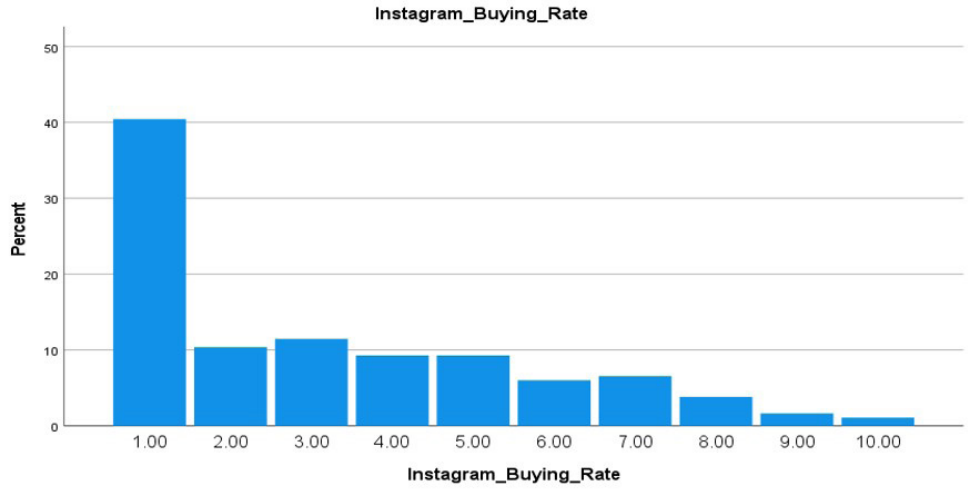

Figure 4: Instagram buying rate

This distribution provides a comprehensive overview of how respondents are distributed across different buying levels on Instagram, emphasizing the prevalence of lower buying rates in the given dataset.

Group Statistics and Significance Test of Facebook and Instagram Engagement Rate

The group statistics presents comparing the preferred platforms for purchasing products and the corresponding engagement rates on Facebook and Instagram, segmented by gender. Among the respondents, females (group 2) outweigh males (group 1), in numbers of preferred platforms, females have a lower mean (2.1188) compared to males (3.2727) when it comes to Facebook, indicating that males are more likely engage through Facebook. Conversely, females have a higher mean (5.2871) compared to males (3.7532) for Instagram, suggesting that females are more engaged through Instagram.

Table 3: Group statistics

Group statistics					
Preferred Platforms to Buy Product	**Gender**	**N**	**Mean**	**Std.Deviation**	**Std.Error Mean**
Facebook Engagement Rate	1 (Male)	77	3.2727	2.84529	0.32425
	2 (Female)	101	2.1188	2.05079	0.20406
Instagram Engagement Rate	1 (Male)	77	3.7532	2.57087	0.29298
	2 (Female)	101	5.2871	2.67334	0.26601

Overall, these statistics suggest that while males engage through Facebook and females show a stronger engagement on Instagram.

The following table provides the results of an independent sample test, including Levene's Test for Equality of Variances and t-tests for Equality of Means, along with 95% Confidence Intervals of the differences, for both Facebook and Instagram engagement rates.

Table 4: Independent T-Test

		Levene's Test for Equality of Variances		**t-test for Equality of Means**					
		F	**Sig**	**T**	**df**	**One-Sided p**	**Two-Sided p**	**Mean Difference**	**Std.Error Difference**
Facebook Engagement Rate	Equal variances assumed	11.898	.001	3.144	176	.001	.002	1.154	0.36702
	Equal variances not assumed			3.012	132.345	.002	.003	1.154	0.38312
Instagram Engagement Rate	Equal Variances assumed	0.087	.768	-3.856	176	.000	.000	-1.538	.39782

	Equal Variances not assumed			-3.876	166.802	.000	.000	-1.538	.39572

For Facebook Engagement Rate, there was a significant difference in means between groups, both when equal variances were assumed (t = 3.144, df = 176, p = .002) and not assumed (t = 3.012, df = 132.345, p = .003), indicating that Facebook Engagement Rate is significantly higher on average compared to the comparison group. For Instagram Engagement Rate, there was also a significant difference in means between groups, with both equal variances assumed (t = -3.856, df = 176, p = .000) and not assumed (t = -3.876, df = 166.802, p = .000), suggesting that Instagram Engagement Rate is significantly lower on average compared to the comparison group.

In summary, both Facebook and Instagram Engagement Rates exhibit statistically significant differences from the comparison group, with Facebook Engagement Rate being higher and Instagram Engagement Rate being lower.

Group Statistics and Significance Test of Facebook and Instagram Buying Rate

The provided group statistics reveal differences in buying rates between genders across two social media platforms, Facebook and Instagram. On Facebook, males have a slightly higher mean buying rate (2.4026) compared to females (1.9802). However, on Instagram, females display a significantly higher mean buying rate (3.7129) than males (2.4935), indicating that males are slightly more inclined towards making purchases on this platform. Conversely, for Instagram, females exhibit a notably higher mean buying rate compared to males, suggesting that females are more active in purchasing products through Instagram.

Table 5: Group Statistics and Significance Test of Facebook and Instagram Buying Rate

Group statistics					
	Gender	**N**	**Mean**	**Std.Deviation**	**Std.Error Mean**
Facebook Buying Rate	1 (Male)	77	2.4026	2.40755	.27437
	2 (Female)	101	1.9802	2.09752	.20871
Instagram Buying Rate	1 (Male)	77	2.4935	2.06234	.23503
	2 (Female)	101	3.7129	2.57036	.25576

These findings suggest that there may be gender-based variations in purchasing behavior on different social media platforms, with females generally showing higher buying rates on Instagram compared to males. The following test assesses whether the variances of the two groups (Facebook and Instagram buying rates) are equal.

For Facebook, when variances are assumed to be equal, the Levene's test statistic is 2.699 with a significance level of 0.102, suggesting no significant difference in variances. Similarly, for Instagram, the Levene's test statistic is 8.397 with a significance level of 0.004, indicating a significant difference in variances.

Table 6: Levene's test

		Levene's Test for Equality of Variances		**t-test for Equality of Means**					
		F	**Sig**	**T**	**df**	**One-Sided p**	**Two-Sided p**	**Mean Difference**	**Std. Error Difference**
Facebook Buying Rate	Equal variances assumed	2.699	0.102	1.248	176	.107	0.214	.42240	.33838
	Equal variances not assumed			1.225	150.983	.111	0.222	.42240	.34473
Instagram Buying Rate	Equal Variances assumed	8.397	.004	-3.409	176	.000	.001	-1.21936	.35771
	Equal Variances not assumed			-3.511	175.516	.000	.001	-1.21936	.34735

In terms of comparing mean buying rates between Facebook and Instagram, no significant difference found in means where assuming equal variances, the t-test statistic for Facebook is 1.248 with a two-sided p-value of 0.214. However, for Instagram, the t-test statistic is -3.409 with a two-sided p-value of 0.001, indicating a significant difference in means. 95% confidence interval provides that the true difference in buying rates lies. For Facebook, when equal variances are assumed, the confidence interval ranges from -0.24541 to 1.09021. Similarly, for

Instagram, the interval ranges from -1.92531 to -0.51342 when variances are not assumed to be equal.

Overall, the analysis suggests that there is no significant difference in buying rates between Facebook and Instagram when assuming equal variances. However, when variances are not assumed to be equal, there appears to be a significant difference, with Instagram having a significantly lower buying rate compared to Facebook.

Chi-Square Test for Detecting Significance among Ages for Engagement and Buying Rate of Facebook and Instagram

Based on the Chi-Square tests for Age and Facebook Engagement Rate as well as Age and Instagram Engagement Rate, the following interpretations can be made.

Table 7: Chi-square Test for detecting significance among ages for engagement and buying rate of Facebook and Instagram

	Chi-Square Tests (Age * Facebook Engagement Rate)			**Chi-Square Tests (Age * Instagram Engagement Rate)**		
	Value	**df**	**Asymptotic Significance (2-sided)**	**Value**	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	47.782	54	0.733	49.776	54	0.638
Likelihood Ratio	40.687	54	0.910	49.186	54	0.660
Linear-by-Linear Association	0.095	1	0.758	0.108	1	0.743
N of Valid Cases	**148**			**148**		

For the Age and Facebook Engagement Rate, the Pearson Chi-Square value is 47.782 with 54 degrees of freedom, resulting in a p-value of 0.733 and for the Age and Instagram Engagement Rate, the Pearson Chi-Square value is 49.776 with 54 degrees of freedom, resulting in a p-value of 0.638. Here, these p-values suggest that there is no significant association between age and engagement rates on both Facebook and Instagram, as they are above the typical significance threshold of 0.05. The Likelihood Ratio test also yields non-significant p-values for both Facebook (p = 0.910) and Instagram (p = 0.660), indicating no significant association between age and engagement rates. The linear-by-linear association test, which specifically examines trends in ordinal variables, also shows non-significant p-values for both Facebook (p = 0.758) and Instagram (p = 0.743). That means the buying rates on both Facebook and Instagram are not showing any clear trend.

In summary, based on these Chi-Square tests, there is no evidence to suggest a significant association between age and engagement rates on either Facebook or Instagram. These findings imply that age does not play a significant role in determining engagement rates on these social media platforms among the observed sample.

Here the following Chi-Square tests examine the relationship between age groups and buying rates on Facebook and Instagram.

Table 8: Chi-square test results

	Chi-Square Tests (Age * Facebook Buying Rate)			**Chi-Square Tests (Age * Instagram Buying Rate)**		
	Value	**df**	**Asymptotic Significance (2-sided)**	**Value**	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	53.152	54	0.507	56.232	48	0.194
Likelihood Ratio	43.352	54	0.850	46.462	48	0.536
Linear-by-Linear Association	0.076	1	0.783	0.002	1	0.966
N of Valid Cases	**148**			**148**		

For the Age and Facebook Buying Rate, the Pearson Chi-Square value is 53.152 with 54 degrees of freedom, resulting in a p-value of 0.507 and for the Age and Instagram Buying Rate, the Pearson Chi-Square value is 56.232 with 48 degrees of freedom, resulting in a p-value of 0.194. P-values suggest that there is no significant association between age and buying rates on Facebook and Instagram. The Likelihood Ratio test also yields non-significant p-values for both Facebook (p = 0.850) and Instagram (p = 0.536), suggesting no significant association between age and buying rates on these platforms. The linear-by-linear association test, which examines trends in ordinal variables, shows non-significant p-values for both Facebook (p = 0.783) and Instagram (p = 0.966), indicating no significant linear association between age and buying rates. In summary, based on these Chi-Square tests, there is no strong evidence to suggest a significant association between age and buying rates on Facebook or Instagram.

Chi-Square Test for Detecting Significance among Genders for Engagement and Buying Rate of Facebook and Instagram

The Chi-Square Tests of relationship between gender and engagement rates undertaken for both Facebook and Instagram provide statistically significant results. The pvalues are consistently below the conventional 0.05 threshold across all statistical measures (Pearson Chi Square, Likelihood Ratio, and Linear-by-linear associations) for the association between gender and engagement rates on both platforms.

Table 9: Chi-square Test for detecting significance among genders for engagement and buying rate of Facebook and Instagram

	Chi-Square Tests (Gender * Facebook Engagement Rate)			**Chi-Square Tests (Gender * Instagram Engagement Rate)**		
	Value	**df**	**Asymptotic Significance (2-sided)**	**Value**	**df**	**Asymptotic Significance (2-sided)**
Pearson Ch-Square	26.8	9	0.002	18.764	9	0.027
Likelihood Ratio	29.161	9	0.001	20.620	9	0.014
Linear-by-Linear Association	9.412	1	0.002	13.786	1	0.000
N of Valid Cases	**178**			**178**		

It suggests that gender affects user engagement behaviour on all social media platforms. This finding underlines that when looking at engagement patterns on Facebook and Instagram, demographic gender clashes are important. For businesses and marketers looking to tap into the female audience to better engage, entertain and interact with brand content, this is an important insight. Finally, it provides an analysis that clearly demonstrates the part gender has to play in the engagement dynamics of social media.

The following chi squared tests then take a look at how gender shapes up relating to buying rates on Facebook and Instagram. When the same statistical measures are calculated by Facebook (Pearson Chi-Square, Likelihood Ratio, Linear by Linear Association) for buying rates and gender, none of the p values passes the .05 significance threshold, that is, gender has no significance to Facebook's buying rates. This implies that gender has little impact in the buying behaviour and could be balanced by other factors. But, unlike Instagram, where the Pearson Chi-Square and Likelihood Ratio tests do not indicate significant associations, the Linear by Linear Association test results in significant association with p value being 0.001. This suggests a linear trend between gender and buying rate on Instagram and therefore gender might influence purchasing behaviour on this platform. Interpreting this overall analysis, we perceive that the relationship between gender and buying rates differ across different social media platforms, with Instagram featuring a stronger gender effect on buying behaviour than Facebook.

Table 10: Chi-square test

	Chi-Square Tests (Gender * Facebook Buying Rate)			**Chi-Square Tests (Gender * Instagram Buying Rate)**		
	Value	**df**	**Asymptotic Significance (2-sided)**	**Value**	**df**	**Asymptotic Significance (2-sided)**
Pearson Ch-Square	7.603	9	.575	14.795	9	0.097
Likelihood Ratio	8.036	9	.531	16.380	9	0.059
Linear-by-Linear Association	1.553	1	.213	10.962	1	0.001
N of Valid Cases	**178**			**178**		

This suggests a linear trend between gender and buying rates on Instagram, implying that gender may play a role in shaping buying behavior on this platform. In summary, the analysis suggests that the influence of gender on buying rates varies across different social media platforms, with Instagram showing a more pronounced association between gender and buying behavior compared to Facebook.

Major Findings

Statistically there's a huge correlation between a person's gender and engagement rates on Facebook and Instagram, meaning that people's gender affects how they engage with content across all social media platforms. Instagram has higher engagement rate than Facebook, which means that on Instagram, users engage with posts more than they do with their Facebook content.

I do not find age to be related to engagement rates on Facebook or Instagram, age is not a factor that seems to dictate how engaged people would be on either platform. But buying rates on Instagram depend largely on Gender, in particular females are more prone to buying than they

are for males. The gender effect on the buying rates on Facebook is low, however, the linear relation is observed between gender and buying behaviour on Instagram. Females are more likely to purchase products on this platform.

In terms of the media platform, we find that taking Instagram versus Facebook, there is a stronger correlation between gender and buying behaviour. Even though they are higher, it's not like Instagram has a higher engagement rate for men than women, not that it matters much. Widely, engagement rates are generally higher on Facebook, but buying behaviour isn't skewed by gender.

Taken together, the results emphasise the significance of viewing gender demographics when trying to understand user behaviours on social media platforms around engagement and shopping activities. These insights could be used to inform marketing strategies with an intent of increasing user engagement and increasing sales, on platforms such as Facebook and Instagram.

CONCLUSION

To summarise, the research has found that Facebook and Instagram both have a different role in users' well being and social interaction. However, social media influencers also changed marketing strategies, making the influencer marketing lead in a significant and effective industry. Marketing and Investment Decision making is based on these platforms and due regards to social media influencers' dynamics, in the social media influencer market context, consumers build up their own beliefs about why their favourite influencer promote and advertise a product brand.

The findings of this study highlight the enormous influence influencers have with regard to consumers' engagement and sales conversion rates on social media platforms, in particular, on Facebook and Instagram. It is shown that influencers make a huge impact on how consumers use and how they interact with brands, leading to purchase decisions. After analysing data collected from 190 respondents around the world, it was found that Facebook and Instagram differ in audience engagement and the conversion rates driven by influencer interactions which are statistically significant. Overall Instagram is known to have higher engagement rates, but Facebook has higher engagement rates for both genders. Moreover, there is a notable difference due to gender in their buying behaviour, for instance on Instagram female have a higher buying rate than males.

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