Research Article

Employing social media in building academic brands of the UAE's universities: A comparative analysis

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ARTICLE INFO	ABSTRACT
	This paper studied the United Arab Emirates universities' social media branding strategies based on an investigation of their performances on Twitter. Content analysis was conducted to examine universities' tweet topics, image subjects, languages, and engagement features. The effectiveness of strategies is investigated by analyzing audience engagement metrics. We also compared social media strategies between private and public universities. Results indicated a discrepancy between universities' branding efforts, audience preferences on social media, and different strategies between public and private universities. The study offered insights into how academic institutions can optimize the use of social media platforms in building their reputation amid intense competition locally and globally.

INTRODUCTION

The rapid adoption of social media platforms by universities across the globe has created a paradigm shift in how institutions interact with their audience and stakeholders. In this digital age, universities disseminate information and strategically construct and communicate their brand identity online (Brons et al., 2019; Kelleher & Sweetser, 2012; Kelly, 2013). Studying how the United Arab Emirates (UAE) universities brand themselves on social media, particularly on platforms like Twitter (we used Twitter in this paper as it was called at the time of the study), offers valuable insights into the use of digital media in higher education marketing. Given the competitive environment in higher education, effective branding helps universities differentiate themselves, attract and retain students, and foster relationships with alumni and other stakeholders (Hemsley-Brown & Goonawardana, 2007; Sung & Yang, 2008).

One compelling reason to study UAE universities' branding strategies on social media is the significant potential of these platforms to reach and engage their diverse audiences, local citizens and residents, and global entities. For universities in the UAE, a region characterized by a high internet penetration rate and social media usage (Kemp, 2023), the strategic use of these platforms could significantly impact their brand visibility and reputation. Additionally, such research can shed light on the digital communication practices within the

UAE's unique cultural context, contributing to the broader understanding of global trends in higher education marketing.

Universities employ various strategies to brand themselves on social media. These can include content marketing, where universities share valuable content with their audiences; social listening, where universities monitor social media for public comments about their brand; and engagement strategies, where universities interact with their audiences to build relationships and communities (Alves et al., 2016). Identifying and understanding these strategies and their effectiveness can provide valuable practical insights for universities seeking to optimize their social media branding efforts.

Furthermore, examining the branding strategies of UAE universities on social media allows for an analysis of the dynamics between digital media, higher education, and marketing within the fast-evolving Middle East Region. These studies could inform best practices for other institutions in similar cultural contexts, enhancing the effectiveness of their social media branding strategies. This line of research is a worthwhile endeavor, given the pivotal role of social media in contemporary higher education marketing and the unique dynamics of the regional context.

LITERATURE REVIEW

Social Media Branding by Higher Education Institutions

Social media platforms have emerged as powerful communication and branding tools for higher education institutions globally. A significant body of literature has begun to explore this relatively new terrain, focusing on various aspects of social media usage in higher education branding (Beverly, 2013; Veletsianos & Kimmons, 2016).

Brons et al. (2019) investigated the use of Twitter by higher education institutions, noting its strategic value in managing university brand communication. They highlighted the importance of "network orchestration" strategies in effectively leveraging social media platforms' interactive and networked nature. These strategies involve managing the interactions between various stakeholders (students, faculty, alumni, etc.) in a way that promotes the desired brand image.

In a study examining higher education marketing, Alves et al. (2016) underscored the value of content marketing, social listening, and engagement strategies on social media. Content marketing, where universities share valuable and relevant content, is crucial in attracting and retaining audiences. Social listening allows universities to monitor public comments about their brand, thus providing real-time feedback and opportunities for proactive reputation management. Lastly, engagement strategies, which entail active interaction with audiences, are essential in building relationships and fostering a sense of community around the brand (Waters et al., 2011).

Focusing on the cultural context of the UAE, Wilkins et al. (2012) investigated how higher education institutions use their websites to attract international students. While their study did not specifically address social media, their findings about the importance of cultural values and context in online branding are pertinent. They found that UAE universities tend to emphasize international accreditation and partnerships, reflecting the country's strategy of positioning itself as a global education hub.

Similarly, Ghalib and Alhouti (2020) explored how UAE universities use social media for international student recruitment. They found that universities tend to post content related to campus facilities, academic programs, and cultural events, aiming to create a positive image and attract students from various cultural backgrounds.

Looking at the literature on how universities use social media for communication and publicity, the majority of the studies are focused on higher education institutions in Europe, the United States, and other Western contexts (Belanger et al., 2014; Brons et al., 2019; Capriotti & Zeler, 2023; Sörensen et al., 2023). Although some research has addressed how Arab universities attract international students through their online presence, there is room for a more thorough investigation into social media branding and its impact on the general public (Alim & Abdulrahman, 2022; Alqahtani et al., 2020; Ghalib & Alhouti, 2020;). In particular, the use of some important and nuanced social media features, such as images, languages, and engagement features, is rarely explored. Additionally, there is a gap in utilizing quantitative methods and analytical

techniques in this domain. Considering the increasing significance of social media in higher education marketing and the distinct dynamics of the UAE context, these research avenues warrant further exploration.

This study focuses on Twitter as it has features combining text, multimedia content, URLs, interactions, and engagement functions. Twitter has recently emerged as an influential communication medium for universities to establish their brand and interact with stakeholders, including students, faculty, parents, alumni, and the broader community. Analyzing these accounts allows us to uncover the strategies universities employ to enhance their brand image and values, the effectiveness of their communication, and their responsiveness to stakeholders' needs and concerns. By understanding how these entities navigate the social media landscape, we can attain insights into digital marketing and public relations dynamics in the UAE's public and private educational sectors. This, in turn, can guide future practices and policymaking and provide a benchmark for other institutions aiming to optimize their social media presence and stakeholder engagement.

Theoretical Framework: Agenda Setting and Framing Theories

The agenda setting theory, introduced by McCombs and Shaw (1972), provides a pertinent theoretical approach for studying UAE universities' strategies on Twitter. This theory posits that the media has a significant influence in shaping public perceptions by determining what issues are important. It is based on the principle that the more exposure an issue gets, the more likely it is to become prominent in the public mind. In the context of UAE universities, researchers can apply this theory to examine the extent to which the universities use Twitter to set the agenda for public discussions about their brands, academic offerings, and societal contributions. They could quantify the frequency and prominence of topics in their tweets and subsequently analyze the audience's engagement to infer the effectiveness of the universities' agenda-setting efforts (McCombs, 2005).

The Framing theory, on the other hand, offers a lens through which to understand how these universities present themselves and their offerings on Twitter. Originally proposed by Goffman (1974), this theory suggests that the way an issue is presented (i.e., "framed") can significantly influence audience perceptions and responses (Chong & Druckman, 2007; Entman, 1993; Scheufele & Tewksbury, 2007). In a social media platform like Twitter, the choice of images that accompany a tweet's text is a way of framing. The universities' tweets may frame their brand in particular ways to highlight specific values or attributes.

The theoretical framework of agenda setting and framing theories is relevant to the purpose of the paper, which is to analyze the use of social media by UAE universities to build their academic brands. Agenda setting theory helps to understand how universities use Twitter to set the agenda for public discussions about their brand, academic offerings, and societal contributions. The researchers can analyze the frequency and prominence of topics in tweets to determine the effectiveness of universities' agenda-setting efforts. Framing theory, on the other hand, helps to understand how universities present themselves and their offerings on Twitter. By analyzing the choice of images and videos accompanying the tweets, researchers can identify common frames and study the audience's reactions to these frames.

The theoretical framework provides a lens through which to analyze the strategies used by UAE universities in branding their institutions on social media. It allows for an examination of the topics and image subjects chosen by universities and their effectiveness in engaging the public. The framework also helps to explore the differences between public and private universities in their social media branding strategies and effectiveness.

Overall, the theoretical framework of agenda setting and framing theories provides a solid foundation for understanding the use of social media by UAE universities in building their academic brands (Scheufele & Tewksbury, 2007). By applying these theories, the researchers can gain valuable insights into the strategies employed by universities and their effectiveness in engaging their target audience. Therefore, in this study, we ask:

RQ1: What content strategies did UAE universities implement on social media, particularly on Twitter? Specifically, what are the most prominent topics, image subjects, languages, and engagement features that universities present on Twitter?

RQ2: How effective were these content strategies in terms of user engagement? Did certain topics, image subjects, languages, or engagement features receive more retweets, likes, or replies?

Higher Education in the UAE

In 2017, the UAE initiated the "national strategy for higher education 2030" with a primary focus on research, innovative academic programs, and global competitiveness. The fourth principle of the UAE's "the principles of the 50" underscores the pivotal role of human capital in future growth. This principle emphasizes the development of education and the importance of attracting talent and building skills to position the UAE at the forefront among global counterparts (The United Arab Emirates' Government Portal, 2023).

The UAE's commitment to global leadership through education and research is mirrored in the visions, missions, and strategies of its national universities (CAA, 2023). For instance, the United Arab Emirates University (UAEU) has articulated a vision that centers on advancing innovation in higher education, research, and community service at both national and international levels. Similarly, the University of Sharjah (UoS) aims to align itself with renowned universities worldwide. Additionally, Khalifa University (KU) aspires to be a global leader among research-intensive universities in the 21st century, emphasizing the production of world-class education and research.

Over recent years, UAE universities have witnessed substantial growth and diversification in academic programs. The number of accredited universities expanded from 54 in 2012 to 81 in 2019. In terms of faculty, there were 7,723 professors in 2014/2015, a number that increased to 8,861 by 2021/2022. Moreover, there has been a significant rise in enrollment and graduation rates. According to the latest data from The UAE Ministry of Education (2022), the total number of graduates in 2012-2013 was approximately 22,000, and this figure surged to around 29,000 for 2020/2021.

With the widespread adoption of social media platforms as a preferred source of information (Tahat et al., 2020), numerous UAE universities have launched their social media accounts to connect with their audiences. These platforms serve as valuable tools for understanding how Emirati academic institutions harness them to enhance competitiveness, build academic reputations, foster dialogue and interaction with local communities, and engage with various stakeholders, including decision-makers, partners, students, parents, and other individuals interested in universities and educational institutes.

Social Media Use Between Private and Public Universities

While universities have increasingly embraced social media, researchers have noted distinctions in branding strategies between private and public institutions. Lovari and Giglietto (2012) examined 95 Italian higher education institutions, revealing that private universities displayed greater activity in establishing a social media presence, employed more effective strategies, and attracted students and public engagement more effectively compared to other university types. Alqahtani et al. (2020) analyzed 110,000 tweets from Saudi Arabian private and public universities, finding that public universities were more responsive to public queries and engaged in frequent mentions, while private universities excelled in disseminating information through retweets and diverse hashtags. Alim and Abdulrahman (2022) examined Twitter accounts of 13 private and 20 public universities in Saudi Arabia, identifying university events as the primary content category for private universities and general advertisements for public ones. Additionally, private universities demonstrated more references to employer engagement than public counterparts.

Previous research highlights variations in social media content between public and private universities, but the effectiveness of these branding strategies remains unexplored. Thus, to know more about, we ask:

RQ3: What were the differences between public and private universities in terms of their social media branding strategies and effectiveness in the UAE? What were the variations in the topics, image subjects, languages, or engagement features used by public and private universities on Twitter?

METHODS

To investigate the UAE universities' social media strategies in branding their institutions and their effectiveness, we recruited the top six universities according to the Times Higher Education World University

Rankings 2023[1]. They are the UoS, UAEU, Abu Dhabi University (ADU), KU, Zayed University (ZU), and American University of Sharjah (AUS). As Twitter is one of the most used social media platforms for institutions in the UAE (Emam, 2023), the historical Tweets of all universities were collected through https://www.exportdata.io/ in the year 2022. Given that each university has a different academic calendar, using a one-year time frame will be able to cover all activities and events. Because the UoS' Twitter posts in 2022 were not direct posts but were shared from their Instagram account, it is not comparable to other universities' performances on Twitter. Therefore, it is excluded from this study. We ended up with five universities in the sample, among which UAEU (@UAEU_NEWS), KU (@KhalifaUni), and ZU (@Zayed_U) are public universities; ADU(@abudhabiuni) and AUS (@AUSharjah) are private universities.

The data include Tweet ID, URL, Tweet posted time, type, text, text length, language, number of retweets, likes, quotes, replies, mentions, hashtags, media, emojis, symbols, and polls. All five accounts were established between 2009–2012 and have more than ten years of history. AUS was the first to establish its account in April 2009, and UAEU was the last to start its Twitter account in February 2012. ZU has the highest number of followers (92,224), followed by UAEU (53,268), ADU (26,352), KU (25,783), and AUS (21,799). We collected 2020 tweets from all accounts in the year 2022, which @UAEU_NEWS has 753 tweets, @abudhabiuni 479, @KhalifaUni 327, @AUSharjah 260, and @Zayed_U 201. UAEU had the highest number of posts, interactions, mentions, and media use, as it posted the text of the same tweet in two languages–Arabic and English; ZU had the lowest number of posts and interactions. No symbols and polls were used by all accounts.

In terms of the use of languages, KU used 47% Arabic, 52% English, and 1% mix of Arabic and English; ADU used 46% Arabic, 48% English, and 3% mix; UAEU used 46% Arabic, slightly higher than English (31%), and 19% mix; ZU used 62% Arabic, twice higher than English 27%, and 9% mixed. AUS' tweets are all in English, except two are in Arabic. Most university posts have a higher percentage of photos and videos used. ZU and KU are about 50%, ADU, UAEU, and AUS about 75%.

Content Analysis

We employed content analysis to assess universities' Twitter account performance. The unit of analysis is each tweet. Two variables–topic categories and image/video subjects–were manually coded for tweets. The main topic categories were developed from previous studies (Alim & Abdulrahman, 2022; Capriotti & Zeler, 2023). But since no previous studies were conducted on coding image/video subjects, the researchers did a pilot study in which samples of 50 tweets from each university's account were analyzed to identify image/video subjects, as well as to adjust topic categories. After assessment and rounds of discussions among researchers, 14 topic categories and nine image/video subjects were finalized for coding. The 14 topic categories are

    (1) promoting study programs,

    (2) promoting research,

    (3) university ranking,

    (4) university facilities and services,

    (5) lectures, conferences, workshops, and seminars by faculty/staff,

    (6) academic activities and events by students,

    (7) non-academic activities and events,

    (8) national initiatives,

    (9) community engagement,

    (10) international collaboration,

    (11) local collaboration/networking,

    (12) student advising /career placement/alumni relations,

    (13) awards/achievements for students and faculty, and

    (14) other.

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[1]   https://www.timeshighereducation.com/world-university-rankings/2023/world-ranking#!/page/0/length/25/locations/ARE/sort_by/rank/sort_order/asc/cols/stats

The nine categories of images and videos subjects are

(1) no image/videos,

(2) university premise,

(3) infographic (including posters),

(4) UAE leader/ government/ officials,

(5) university leaders, chancellor, president,

(6) university faculty, staff, and other academics,

(7) students,

(8) students /staff/ faculty, and

(9) others.

To gauge inter-coder reliability, 30 identical tweets were coded by two coders. Analysis. With a 95% confidence interval, Cohen's kappa (κ) coefficient was calculated to assess the reliability of the two categorical variables. In the initial round, κ was 0.85 for topics and 0.77 for images/videos, $p < .001$. Subsequent discussions led to improved inter-coder reliability of κ = 0.90 ($p < .001$.) for both variables, indicating high agreement (Lombard et al., 2002).

RESULTS

Strategies on Choices of Tweets' Topics and Images

To answer **RQ1** and grasp UAE universities' branding strategies, we examined tweet topics and image/video subjects. The top five tweeted topics, in order, are:

(1) faculty/staff academic activities,

(2) non-academic activities,

(3) awards/achievements,

(4) community engagement, and

(5) research promotion.

Of the tweets analyzed (82% featuring images/videos), the top five image subjects, in order, are

(1) infographics/posters,

(2) university faculty/staff/academics,

(3) students/faculty/staff,

(4) students, and

(5) university premises.

Refer to **Figure 1** and **Figure 2** for tweet topic and image subject counts.

Effectiveness of Strategies from Audience Engagement on Tweets' Topics and Images

To address **RQ2** on branding strategy effectiveness, we examined user engagement metrics, including retweets, likes, quotes, and replies, across different tweet topics and image subjects. In **Table 1**, the top three topics with the highest retweets and likes were consistent:

(1) awards/achievements,
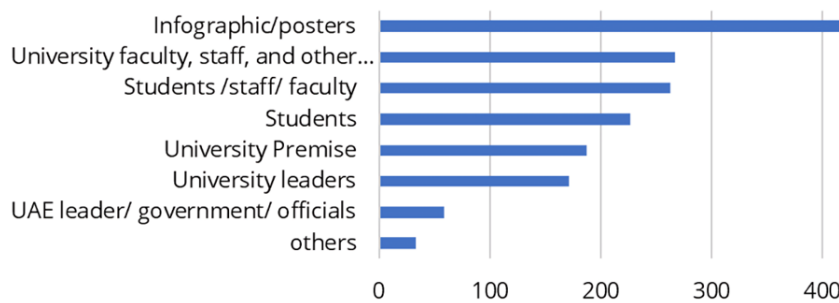
(2) national initiatives, and

(3) university ranking.

The most quoted topic was university ranking, while replies were highest for

(1) national initiatives,

(2) university facilities and services, and

(3) local collaboration.

Figure 1. Number of tweets on topics by UAE universities in 2022 (Source: Twitter data collected and coded by authors)

Figure 2. Number of tweets on image subjects by UAE universities in 2022 (Source: Twitter data collected and coded by authors)

Table 1. Mean and standard deviation of number of retweets, likes, quoted, and replies by topics

	N	RM	RSD	LM	LSD	QM	QSD	RM	RSD
Promoting study programs	151	0.54	0.992	2.10	2.377	0.08	0.356	0.67	1.198
Promoting research	190	0.55	0.876	2.43	2.273	0.06	0.256	0.74	0.819
University ranking	95	**0.89**	1.759	**3.98**	3.761	**0.25**	1.021	0.79	1.081
University facilities and services	106	0.41	0.701	2.18	2.092	0.06	0.270	**0.92**	1.367
Academic activities and events by faculty/staff	300	0.60	1.344	2.35	3.161	0.05	0.241	0.66	0.895
Academic activities and events by students	44	0.61	0.868	3.14	4.118	**0.14**	0.409	0.89	1.125
Non-academic activities and events	297	0.59	0.904	2.80	2.692	0.07	0.287	0.81	1.718
National initiatives	82	**0.99**	1.674	**4.13**	4.291	0.10	0.337	**1.20**	1.328
Community engagement	220	0.69	1.962	2.84	4.468	0.04	0.211	0.72	1.095
International collaboration	61	0.36	0.684	2.74	3.027	0.03	0.180	0.62	0.879
Local collaboration/networking	134	0.70	1.124	2.99	3.349	0.08	0.302	**0.90**	1.021
Student advising/career placement/alumni relations	85	0.64	1.654	2.80	4.394	0.12	0.498	0.73	1.401
Awards/achievements	227	0.99	1.968	**4.61**	5.228	**0.12**	0.420	0.82	1.055
Other	28	0.18	0.772	1.36	2.778	0.04	0.189	0.61	0.875
Total	2,020	0.66	1.390	2.93	3.633	0.08	0.376	0.78	1.193

Notes. RM: Retweets mean; RSD: Retweets standard deviation; LM: Likes mean; LSD: Likes standard deviation; QM: Quoted mean; QSD: Quoted standard deviation; RM: Replied mean; RSD: Replied standard deviation.

We conducted one-way ANOVA tests to assess significant differences in engagement variables across topic categories. The results, shown in **Table 2**, indicated significant differences for retweets [$F_{(13, 2006)}$ = 2.597, $p < .01$], likes [$F_{(13, 2006)}$ = 7.663, $p < .001$], and quotes [$F_{(13, 2006)}$ = 2.512, $p < .01$]. Post-hoc Tukey tests revealed that 'awards/achievements by students and faculty' received significantly more retweets compared to 'university facilities and services' ($p < .05$). 'University ranking' garnered more likes compared to 'promoting study programs' and 'promoting research', 'university facilities and services', and 'academic activities by faculty/staff'. 'National initiatives' received more likes than 'promoting study programs' and 'promoting research', 'university facilities and services', and 'academic activities by faculty/staff'. 'Awards and

Table 2. One-way ANOVA of number of retweets, likes, quoted, and replies by topics

		Sum of squares	df	Mean square	F	Sig.
Retweets	Between groups	64.563	13	4.966	2.597	0.001
	Within groups	3,836.375	2,006	1.912		
	Total	3,900.939	2,019			
Likes	Between groups	1,260.758	13	96.981	7.663	< .001
	Within groups	25,388.118	2,006	12.656		
	Total	26,648.877	2,019			
Quoted	Between groups	4.566	13	0.351	2.512	0.002
	Within groups	280.442	2,006	0.140		
	Total	285.008	2,019			
Replies	Between groups	29.099	13	2.238	1.579	0.084
	Within groups	2,843.760	2,006	1.418		
	Total	2,872.859	2,019			

Table 3. Mean and standard deviation of number of retweets, likes, quoted, and replies by image subjects

	N	RM	RSD	LM	LSD	QM	QSD	RM	RSD
No image	363	0.32	0.830	1.69	1.908	0.03	0.187	0.53	0.780
University premise	187	0.51	1.049	2.35	2.584	0.10	0.588	0.94	2.048
Infographic/posters	450	0.53	1.109	2.14	3.085	0.10	0.451	0.69	1.030
UAE leader/government/officials	59	**0.83**	1.886	3.59	4.292	0.07	0.314	**1.02**	1.456
University leaders	171	**1.13**	1.823	**4.06**	4.352	**0.11**	0.367	**1.03**	1.370
Faculty, staff, and other academics	267	0.64	1.062	3.18	2.984	0.06	0.275	0.89	0.969
Students	227	0.73	1.162	**3.74**	3.234	**0.08**	0.335	0.63	1.196
Students/staff/faculty	263	**1.09**	2.277	**4.63**	5.713	**0.11**	0.376	0.94	1.066
Others	32	0.44	0.716	2.31	2.278	0.06	0.354	0.81	0.859
Total	2019	0.66	1.390	2.93	3.634	0.08	0.376	0.78	1.193

Notes. RM: Retweets mean; RSD: Retweets standard deviation; LM: Likes mean; LSD: Likes standard deviation; QM: Quoted mean; QSD: Quoted standard deviation; RM: Replied mean; RSD: Replied standard deviation.

achievements' received the highest likes, significantly higher than all other topics (p < .05) except 'academic activities by students' and 'national initiatives'. 'University ranking' had the highest number of quotes, significantly surpassing all other topics (p < .05) except 'academic activities by students', 'national initiatives', 'students advising/career placement/alumni relations', and 'awards/achievements'.

In summary, 'awards and achievements,' 'university ranking,' and 'national initiatives' demonstrated higher user engagement and effectiveness compared to topics like 'promoting study programs', 'promoting research,' 'university facilities and services', and 'academic activities and events by faculty.' Notably, despite being the most tweeted topic, 'academic activities and events by faculty' exhibited low user engagement, signaling potential branding concerns.

Media-rich tweets significantly outperformed those without media. **Table 3** reveals that the most retweeted image subject categories are

(1) university leaders,

(2) UAE leaders/government officials, and

(3) students/faculty/staff.

The most liked image categories are

(1) students/faculty/staff,

(2) university leaders, and

(3) students.

The most quoted categories are 'university leaders' and 'students/faculty/staff,' while the most replied categories are 'UAE leaders/government officials' and 'university leaders.'

Statistical results, detailed in **Table 4**, indicate significant differences in user engagement for image and video subjects based on one-way ANOVA tests [$F_{(8, 2010)}$ = 9.579, p < .001] for retweets, [$F_{(8, 2010)}$ = 21.28, p < .001] for likes, and [$F_{(8, 2010)}$ = 5.344, p < .001] for replies. Specifically, 'university leaders' garnered the highest retweets (mean [M] = 1.13 ± 1.82), followed by 'students/faculty/staff' (M = 1.09 ± 2.28), both

Table 4. One-way ANOVA of number of retweets, likes, quoted, and replies by image subjects

		Sum of squares	df	Mean square	F	Sig.
Retweets	Between groups	143.250	8	17.906	9.579	< .001
	Within groups	3,757.256	2,010	1.869		
	Total	3,900.506	2,018			
Likes	Between groups	2,080.772	8	260.096	21.280	< .001
	Within groups	24,566.958	2,010	12.222		
	Total	26,647.730	2,018			
Quoted	Between groups	1.691	8	0.211	1.500	0.152
	Within groups	283.311	2,010	0.141		
	Total	285.001	2,018			
Replies	Between groups	59.819	8	7.477	5.344	< .001
	Within groups	2,812.438	2,010	1.399		
	Total	2,872.257	2,018			

Table 5. One-way ANOVA of number of retweets, likes, quoted, and replies by languages

		Sum of squares	df	Mean square	F	Sig.
Retweets	Between groups	86.105	2	43.053	22.332	< .001
	Within groups	3,780.450	1,961	1.928		
	Total	3,866.555	1,963			
Likes	Between groups	583.399	2	291.699	22.208	< .001
	Within groups	25,757.035	1,961	13.135		
	Total	26,340.433	1,963			
Quoted	Between groups	0.949	2	0.474	3.280	0.038
	Within groups	283.689	1,961	0.145		
	Total	284.637	1,963			
Replies	Between groups	220.010	2	110.005	82.601	< .001
	Within groups	2,611.589	1,961	1.332		
	Total	2,831.599	1,963			

significantly outperforming 'university premises' (M = .51 ± 1.05) and 'infographics/posters' (M = .53 ± 1.11), p < .05, which received the lowest retweets among all image categories. 'University leaders' also received significantly more retweets than 'faculty/staff/other academics' (M = .64 ± 1.06), p < .05. Images featuring students and faculty/staff together (M = 1.09 ± 2.28) received more retweets than those with faculty/staff alone (M = .64 ± 1.06).

In terms of likes, images depicting students and faculty/staff (M = 4.63 ± 5.71) ranked highest, followed by 'university leaders' (M = 4.064 ± 4.35) and 'students' (M = 3.74 ± 3.23). All three received more likes than 'university premises' (M = 2.35 ± 2.58). 'Infographics/poster (M = 2.14 ± 3.06)' received significantly fewer likes than most images, except for those with no images, images with 'university premises,' UAE leaders, and others.

Regarding replies, 'university leaders' (M = 1.03 ± 1.37) received the most, significantly surpassing 'infographics/posters' (M = .69 ± 1.03) and 'students' (M = .63 ± 1.20), which had the fewest replies among all. These results indicate that images featuring 'university leaders' and 'students/faculty/staff' are more engaging than those with infographics/posters and university premises.

Considering the prior finding that 'infographics/posters' were the most used image subject, these results cast doubt on the effectiveness of universities' branding efforts in this regard.

Audience Engagement on Twitter Languages

The five UAE universities use Arabic, English, and a mix of the two languages on Twitter. Regarding the effectiveness of the different languages, the study finds that there were significant differences in user engagement reflected in the number of retweets, likes, and replies on languages as determined by one-way ANOVA [$F_{(2, 1961)}$ = 22.332, p < .001] for retweets, ANOVA [$F_{(2, 1961)}$ = 22.208, p < .001] for likes, and ANOVA [$F_{(13, 2006)}$ = 82.601, p < .01] for replies, see **Table 5**. A Tukey post-hoc test revealed that tweets using bi-lingual of Arabic and English (M = 1.04 ± 2.05) got significantly more retweets than tweets using Arabic (M = .82 ± 1.60), p < .05, or English (M = .46 ± 0.97) alone p < .05. Arabic tweets got significantly higher retweets than English, p < .05. For likes, bi-lingual tweets (M = 4.37 ± 5.23) also got more likes than Arabic (M = 3.17 ±

Table 6. Mean and standard deviation of number of retweets, likes, and replies by languages

	N	RM	RSD	LM	LSD	RM	RSD
Arabic	847	0.82	1.597	3.17	3.984	1.11	1.149
English	939	0.46	0.966	2.51	2.826	0.43	0.705
Mix of Arabic and English	178	1.04	2.054	4.37	5.229	1.09	2.411
Total	1,964	0.67	1.403	2.96	3.663	0.78	1.201

Notes. RM: Retweets mean; RSD: Retweets standard deviation; LM: Likes mean; LSD: Likes standard deviation; RM: Replied mean; RSD: Replied standard deviation.

Table 7. Pearson correlation coefficients for mention, hashtag, URL, media, and emoji of retweets, likes, quoted, and replies

Variables	Mention	Hashtag	URL	Media	Emoji
Retweets	−.04 (2020)	−.04 (2020)	−.15 (2020)	.16 (2020)	.02 (2020)
Likes	−.06 (2020)	−.05 (2020)	−.21 (2020)	.21 (2020)	.08 (2020)
Quoted	−.02 (2020)	−.01 (2020)	−.04 (2020)	.05 (2020)	.00 (2020)
Replies	−.02 (2020)	−.02 (2020)	−.12 (2020)	.12 (2020)	−.03 (2020)

Notes. [***]$p < .001$; [**]$p < .01$; [*]$p < .05$

3.98) and English tweets (M = 2.51 ± 2.83), p < .05. Arabic tweets got more likes than English ones. For replies, bi-lingual tweets (M = 1.09 ± 2.41) and Arab (M = 1.11 ± 1.15) tweets have significantly higher replies than English tweets (M = .43 ± .71), p < .05. In summary, English tweets are less engaged than Arabic and bi-lingual tweets. **Table 6** provides the descriptive results of language and user engagement.

Effectiveness of Using Twitter Engagement Features

Correlations were performed to examine possible relationships between the use of engagement features, i.e., the number of mentions, hashtags, URLs, media, and emojis in the tweets, and user engagement metrics, which are measured by the number of retweets, likes, replies, and quotes. Results showed that the number of mentions is significantly negatively correlated with the number of likes, r (2020) = −.06, p < .01; the number of hashtags is significantly negatively correlated with likes, r (2020) = −.05, p < .05; the number of URLs is negatively correlated with the number of retweets r (2020) = −.15, p < .01, likes r (2020) = −.21, p < .01, and replies r (2020) = −.12, p < .01; the number of media is positively correlated with the number of retweets r (2020) = .16, p < .01, likes r (2020) = .21, p < .01, quoted r (2020) = −.05, p < .05 and replies r (2020) = .12, p < .01; the number of emojis was significantly correlated with likes, r (2020) = .08, p < .01 (see **Table 7**). It indicates that the active use of mentions, hashtags, and URLs discourages user engagement, while the active use of media and emojis encourages user engagement.

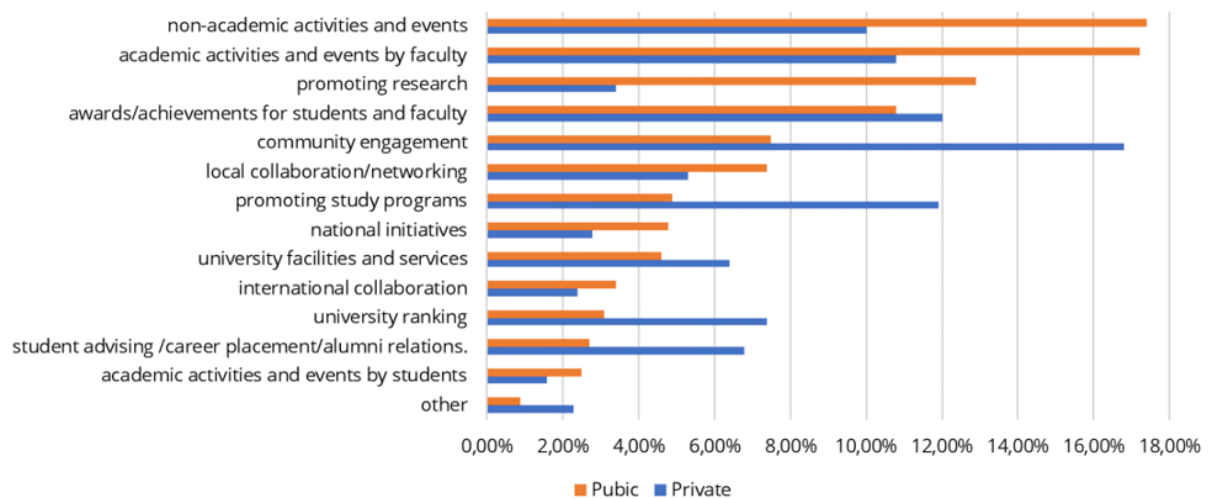### Comparing Private and Public Universities' Strategies on Twitter

Chi-square tests were conducted to answer **RQ3**, which compares the Twitter strategies between private and public universities. The results show a significant difference in strategies between private and public universities in tweets' topics, χ^2 (13) = 200.44, p < .001. Specifically, private universities have a significantly higher percentage (11.9%) of tweets 'promoting study programs' compared to 4.9 of public universities; public universities have significantly more tweets on 'promoting research' (12.9%) compared to 3.4% of private universities; Private universities have more 'university ranking' (7.4%) tweets than public universities (3.1%), while public universities have more tweets on 'academic/nonacademic activities' (37.1%) than private (22.4%); public university also tweeted more on 'national initiatives' (4.8% vs 2.8%), while private universities emphasize more on 'community engagement' (16.8% vs 7.5%) and 'student advising/career placement/alumni relations' (6.8% vs. 2.7%). **Table 8** and **Figure 3** show the differences in tweet topics between private and public universities.

Public and private universities also vary significantly in image strategies according to the Chi-square test, χ^2 (8) = 200.18, p < .00. The two have different focuses on image subjects. Public universities use more 'UAE leaders/government officials' (3.8% vs. 1.5%), 'university leaders' (11.1% vs. 3.9%), 'university faculty/staff/other academics' (16.3% vs. 8.0%) than private universities, while private universities have more focus on 'students' (20.8%) than public ones (5.7%). Private universities also use more images with

Table 8. Crosstabulation of topics and public/private UAE universities

Topics	UAE universities		Total %
	Private %	Public %	
Promoting study programs	**11.9**	4.9	7.5
Promoting research	3.4	**12.9**	9.4
University ranking	**7.4**	3.1	4.7
University facilities and services	6.4	4.6	5.2
Academic activities and events by faculty/staff	10.8	**17.2**	14.9
Academic activities and events by students	1.6	**2.5**	2.2
Non-academic activities and events	10.0	**17.4**	14.7
National initiatives	2.8	**4.8**	4.1
Community engagement	**16.8**	7.5	10.9
International collaboration	2.4	3.4	3.0
Local collaboration/networking	5.3	7.4	6.6
Student advising/career placement/alumni relations	**6.8**	2.7	4.2
Awards/achievements	12.0	10.8	11.2
Other	2.3	0.9	1.4
Total (N = 2,020)	739	1,281	
Total (%)	100	100	

Notes. The data collection occurred during the month of April 2023; χ^2 (13) = 200.44, p < .001; Cramer's V = .315, p < .001.

Figure 3. Comparing tweets' topics between private and public universities in the UAE (Source: Twitter data collected and coded by authors)

'infographics and posters' than public ones (29.9% vs. 17.9%). **Table 9** and **Figure 4** show the differences in tweets' image subjects between private and public universities.

For all measures of user engagement, public universities are significantly more active than private universities.

CONCLUSION AND DISCUSSION

According to agenda-setting theory, the prominence of topics on the Twitter platform reveals the agenda universities want to set for the public in constructing their brands. This study showed that the prominent topics for the five UAE universities are 'activities and events,' 'awards and achievements,' 'community engagement,' and 'promoting research.' This agenda reflected the main functions of employing the social media platform, which included information dissemination, enhancing universities' images and reputation, building connections with the community, and emphasizing research. These findings reflect the national strategy for higher education 2030 in the UAE, which focuses on promoting innovation in higher education, research, and community service at national and international levels to enhance the country's global competitiveness (The UAE Ministry of Education, 2017). However, in terms of effectiveness, topics featuring awards/achievements, national initiatives, and university ranking draw more attention than those promoting

Table 9. Crosstabulation of image subjects and public/private Emirati universities

Topics	UAE universities		Total %
	Private %	Public %	
No image	16.9	18.6	18.0
University premise	6.8	10.7	9.3
Infographic/posters	29.9	17.9	22.3
UAE leader/government/officials	1.5	**3.8**	2.9
University leaders	3.9	11.1	8.5
Faculty, staff, and other academics	8.0	16.3	13.2
Students	20.8	5.7	11.2
Students/staff/faculty	10.7	14.4	13.0
Others	1.5	1.6	1.6
Total (N = 2,020)	739	1,281	
Total (%)	100	100	

Notes. The data collection occurred during the month of April 2023; χ^2 (8) = 200.18, p < .001; Cramer's V = .315, p < .001
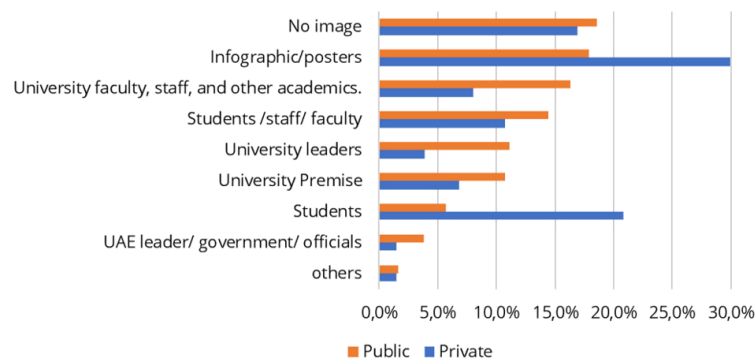
Figure 4. Comparing tweets' image subjects between private and public universities in the UAE (Source: Twitter data collected and coded by authors)

study programs, research, university facilities and services, or academic activities by faculty. Notably, the most tweeted topic, 'academic activities and events by faculty', yielded relatively low user engagement, signaling a potential need for strategic branding reevaluation.

These findings align with existing literature on social media engagement, which suggests that content that resonates with users' interests and aspirations, fosters a sense of identity, pride, and belonging, evokes strong emotional reactions, and tends to get higher engagement (Berger & Milkman, 2012; Vosoughi et al., 2018). The ability of these topics to provide social proof of the university's success or relevance can further augment their impact (Cialdini, 2001). On the other hand, topics such as promoting study programs and research, university facilities and services, and academic activities by faculty, despite being frequently tweeted, are less engaging to users. This could be due to several reasons. For example, audiences might perceive these topics as less novel, irrelevant, or too institutional. The literature on uses and gratification theory (Katz et al., 1973) suggests that audiences might find these topics less satisfying regarding their needs for information, personal identity, integration, social interaction, or entertainment.

The study also found that the top image subjects are infographics/posters, university faculty/staff and students, and university premises. Linking the results of images with the topics, we can attribute the frequent use of infographics/posters to the high coverage of announcing activities and events, awards/achievements, and promoting research. While these topics can be tweeted using images of people, universities choose to use infographics/posters for several reasons: first, infographics/posters consume fewer resources, e.g., availability of photographers, devices, time, transportation, etc.; second, getting permission to take and use photos of people takes time and may delay publishing, which explains the frequent use of university premises in the images for the sake of convenience and time constraints. Further, there are also cultural and religious considerations behind this practice. In Emirati and broader Gulf Arab culture, obtaining consent is essential before displaying anyone's image publicly, especially for women. Islam, which is the dominant religion in the UAE and heavily influences its cultural norms, places a high value on modesty (Belk & Sobh, 2011; Metcalfe, 2008). For women, this includes not only dress but also limiting exposure to public scrutiny. Showing women

in images, especially in ways deemed as potentially revealing, can be seen as compromising this modesty. In many Gulf cultures, family honor and reputation are important. For some families, keeping women out of public photos is a way to protect both personal and family privacy, especially since public images may be circulated online, potentially reaching wide audiences (Al Jenaibi, 2011; Alteneiji, 2023). To respect women's autonomy and the family's preference, media outlets in the region, including social media, choose to use male-only or no-person images to avoid cumbersome procedures.

Regarding the effectiveness of images, tweets with images/videos secured significantly higher user engagement than those without. Further, image subjects with photos of 'university leaders' and 'students/faculty/staff' outperform those featuring 'infographics/posters' or 'university premises.' This finding aligns with the literature, indicating that personalized and relatable content performs better in audience engagement (Saxton & Waters, 2014). Images that humanize the institution or show the people behind it can help build a more personal connection with the audience. In contrast, the most used image type, 'infographics/posters', receives relatively low engagement, indicating a misalignment between what the university provides and what the audience is interested in. Unsurprisingly, such images are often seen as impersonal, less engaging, or hard to comprehend (Smiciklas, 2012). The findings highlight the need for institutions to consider their audience's preferences and motivations when planning their social media strategies.

This study indicates that the choice of languages in UAE universities' tweets affects audience engagement. Bi-lingual tweets, with both Arabic and English, generated the highest levels of engagement across all three metrics: retweets, likes, and replies. These findings correspond with existing research demonstrating the impact of language choice on social media engagement in multilingual contexts (Androutsopoulos, 2014). Previous findings on code-switching in digital communication suggested that multilingual users often exhibit higher engagement when multiple languages are used within the same context (Boroditsky, 2001; Reyes, 2004). Meanwhile, tweets solely in Arabic attracted more engagement than those in English across all measures. This suggests that Arabic, perhaps due to its cultural relevance in the context of the UAE, may foster a stronger connection with the audience, leading to higher user engagement (De Fina & Georgakopoulou, 2011). This evidence implies that a bi-lingual approach, incorporating both Arabic and English, achieves the highest engagement among UAE universities on social media and can serve their local and international profile.

The study also found that using more mentions, hashtags, and URLs discourages user engagement, while using more media and emojis boosts engagement. Even though big data analytics proved URLs and hashtags have strong relationships with re-tweetability (Suh et al., 2010), scholars also found that the effectiveness of using hashtags, videos/pictures, and URLs depends on the nature of the industry (Han & Peng, 2019). In the case of academic institutions like universities, the audience can become less engaging due to information and navigation overload.

The analysis of UAE universities' Twitter data suggests that public and private universities communicate differently to their target audience. The variation between the public and private universities in adopting different strategies for communicating with their audiences can be noted from the type of topics that each focused on. While 'community engagement', 'promoting study programs', 'university ranking', and 'student advising/career placement/alumni relations' were the main topics of the private universities' Twitter accounts, public universities focused more on presenting topics on 'activities and events', 'promoting research', and 'national initiatives.' The difference was also evident in the strategies of how private and public universities employ image subjects. The images of the 'UAE leaders/governmental officials', 'university leaders', and 'university faculty/staff/other academics' are on the top agenda of public universities' strategy; conversely, private universities preferred to use more images of 'students', and 'infographics and posters' on their Twitter accounts. These findings match existing research indicating that private universities pay more attention to their social media strategies for attracting new students, engaging the public and community, and supporting student employment (Alim & Abdulrahman, 2022; Lovari & Giglietto, 2012). On the other hand, public universities focus more on activities and events, research, and national initiatives, which align with national strategies and reflect the vision and mission of public universities. Our study also showed that public universities got more audience engagement than private universities in the UAE as the government strongly supports public universities with more available resources and a more extensive scale.

The study provided a good understanding of how UAE universities utilize social media platforms to build academic reputations and effectively engage the public amid intense competition locally and globally. It has practical and theoretical implications, as it can direct university administrations and their public relations departments to optimize resources for promoting and improving images and reputations. Theoretically, it advanced the connection between agenda-setting theory and framing theory in the social media context.

Limitations

The research is limited by focusing only on UAE universities. A comparison with other world's top-ranking universities will help benchmark and learn from best practices. It is also suggested that more investigations be conducted on the interplay between topics and images to explore the effects of collaboration on audience engagement. The current study is based only on Twitter data. Given the distinct nature of platforms like Twitter, Facebook, Instagram, and LinkedIn (Zhan et al., 2018), comparing performances and effects on different social media platforms could provide valuable ideas on leveraging various social media functions to enhance universities' branding strategies. Further, the study didn't tap into the sentiment analysis of social media content (Brunner et al., 2017). Future studies in opinion mining are suggested to identify the emotional tone behind the text, which can help universities gather insights into stakeholders' experience and academic brand reputation.

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