OPTIMIZING FACEBOOK ENGAGEMENT IN UNIVERSITIES: A CONTENT ANALYSIS OF HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY'S FACEBOOK PAGE

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ABSTRACT

Research purpose:
This study is dedicated to assessing which content themes and post formats drive engagement on the Facebook Page of Vietnamese universities, with a focus on the case study of Hanoi University of Science and Technology (HUST)

Research motivation:
Social media has become a critical communication channel for universities, yet few studies have examined which content strategies effectively drive engagement in the Vietnamese context. This study seeks to fill that gap by providing Vietnam-specific evidence and offering a replicable framework for developing content strategies in higher education marketing

Research design, approach, and method:
Starting from 17 themes adopted in prior research, open coding was used to develop keyword sets, which were later validated by 0.5 Jaccard similarity threshold. Multiple rounds of regular expressions (Regex) and STM were used to classify 200 posts from the ten most-followed Vietnamese university Facebook Page, resulting in seven final themes. Subsequently, 389 posts from HUST official Page were analyzed by the same regex and STM approach. Binary dummy variables were then created, and series of independent sample t-tests were run to evaluate the effects of each theme and format on total engagement.

Main findings:
*Six of the 17 themes were found to be significant in the Vietnamese context, with one new theme—highlighted social events—*emerging. *Themes related to admissions and* overall information *significantly increased engagement, whereas academic program posts reduced it. Text-only posts generated higher engagement, while posts containing external links lowered it.*

Practical/managerial implications:
The seven identified themes can serve as a benchmark for other Vietnamese universities. Besides, technology -oriented universities like HUST are suggested to prioritize admissions and overall information content themes, together with using text- only posts for actionable updates and limiting off- platforms links to optimize engagement.

Keywords: Universities, Facebook, engagement, content themes, post format, HUST, content analysis

1. INTRODUCTION

Social media has transformed both individual lifestyles and the way organizations interact with their customers and stakeholders (Eger et al, 2021). The *Digital 2025 Report* by We Are Social (2025) shows that there are currently 5.24 billion social media users profile worldwide. Moreover, the report further documents that half of adult social media users rely on these platforms to obtain information about brands. Therefore, the central question now is no longer whether organizations should adopt social media, but rather how they can leverage it effectively, considering the specific dynamics of their industry.

In the educational context, social media has become an essential tool for universities to execute their strategies of promotion, positioning, and brand differentiation, while simultaneously nurturing and maintaining relationships with various stakeholders (Capriotti et al., 2024). Different from other industries, universities have a wide range of audiences, including prospective and current students, alumni, parents, public, staff as well as scholars (Saraite-Sariene et al., 2019; Sörensen et al., 2023; Galan et al., 2015). Accordingly, universities must design content that appeals to specific group without excluding others to reach high engagement level (Constantinides & Zinck Stagno, 2011)

This paper investigates fan engagement and Facebook posts message by Hanoi University of Science and Technology (HUST) over the course of 6 months. Social media messaging in higher education has been identified as an underserved research area (Raupp & Osterheider, 2019). By focusing on how universities strategically communicate on their Facebook page, the study seeks to provide new insights into audience engagement in relation with message strategy.

In Vietnam, universities have increasingly utilized social media—particularly Facebook videos—to enhance student enrollment , with both the number and length of videos shown to affect engagement levels (Nguyen et al., 2021). Facebook has also been leveraged as a key branding tool, where institutions seek to maximize interaction to strengthen brand reputation (Wang & Le, 2018). This trend reflects broader digital consumption patterns in Vietnam: as of January 2025, the country had 79.8 million internet users (78.8% penetration), with individuals spending more than two hours daily on social media. Facebook dominates the landscape with 76.2 million active profile (We Are Social, 2025). These trends provide a strong rationale for focusing on Facebook pages in this research.

Research on universities' social media activities remains limited, with only a few studies examining their outcomes of message strategy in terms of audience engagement. Existing evidence provides useful indications, but the overall picture is still fragmented and lacks contextualization, especially in emerging markets. Against this background, the present study focuses on the case of Hanoi University of Science and Technology, aiming to assess the effectiveness of its Facebook communication strategies by analyzing patterns of message affecting fan engagement.

The main purpose of this research is to find out a more effective content marketing for university Facebook page. To achieve this, the paper first reviews research on social media engagement in general and page content strategy for universities in particular. It then describes methodology how to analyze 389 Facebook posts published between February and August 2025 by Facebook Page of Hanoi University of Science and Technology. After presenting key results, the paper discusses the implications for university social media communication strategies as well as suggestions for future research.

2. LITERATURE REVIEW

Social Media Marketing

Social media marketing (SMM) is generally understood as the use of online platforms to stimulate interaction and engagement with target audiences. It involves activities on institutional websites, mainstream platforms such as Facebook, Instagram, and LinkedIn, as well as specialized channels like blogs and forums (Chaffey, 2022).

Strauss & Forst, 2013 defined social media as "a term used to describe the type of media that is based on conversation and interaction between people online". Moreover, social media is an effective tool for open communication, supporting organizations to get insights into customers' needs and encourage them to proactively respond to those needs (Tajudeen et al., 2018).

Social Media in universities

Social media plays a crucial role in building university brands and reputations. Content strategies that incorporate storytelling and personalization strengthen brand image and influence prospective students' decisions (Nofrizal et al., 2024). In addition, social media activities enhance perceived brand value and educational quality, contributing to the overall positioning of universities in a competitive environment (Mohseni & Titkanloo, 2022; Okten Demircioglu et al., 2021). In the digital era, social media has become essential for two-way communication and relationship management (Rivera-Rogel et al., 2018; Eger & Gangur, 2024). It also functions as a vital tool for crisis communication, where the credibility of information sources significantly affects student responses and institutional trust (Snoeijers et al., 2014).

Platforms are widely employed to build and sustain relationships with diverse stakeholders. Value co-creation between institutions and students has been identified as a mediating factor in brand development, reflecting the interactive and participatory nature of digital engagement (Fiaz et al., 2019). Research shows that content quality, visual appeal, and audience size are more important than posting frequency in driving engagement (Sörensen et al., 2023). Social media use is closely linked to students' engagement, satisfaction, and loyalty (Hamuth & Buics, 2024; Kethüda & Bilgin, 2023). Posts emphasizing brand relevance, entertainment, interactivity, and trend adaptation generate stronger loyalty and word-of-mouth. Beyond branding, social media also supports teaching and learning by encouraging participation and fostering learning communities (P(Papademetriou et al., 2022).

Empirical studies further confirm the contribution of social media to student recruitment and attraction. In the Vietnamese context, social media has been shown to enhance both the learning experience and recruitment strategies, inspiring students and shaping brand perceptions in ways that influence their educational choices (Ngo Van Quang et al., 2024)

Universities Facebook Pages

Among students, Facebook also remains the most used platform for maintaining social capital and staying informed (Santos & Cuta, 2015). Moreover, it enables students to sustain prior relationships, establish new connections, and engage with institutional communication (Manago et al., 2012, reinforcing the platform's role as both a community-building and strategic communication tool. Effective communication on Facebook therefore requires not only dissemination of information but also alignment with user expectations and value creation (Eger & Gangur, 2024).

Although its role in higher education marketing has only recently gained attention (Lund, 2019), universities increasingly employ Facebook pages as a strategic communication channel ((Eger et al., 2021)). These pages function as virtual brand communities, connecting institutions with students, alumni, staff, and other publics (De Vierman et al., 2017). Leading universities employ Facebook page strategically to strengthen fan engagement (Belluci et al., 2019).

Research demonstrates that followers on Facebook pages can indeed increase engagement through various mechanisms. Fan growth is primarily attributed to increased post visibility, which subsequently enhances post engagement (Deo & Prasad, 2020). The research from Fähnrich et al., (2020a) also shows that the number of followers on Facebook Page of Universities has positive impact on engagement level.

For the case of Hanoi university of Science and Technology, Facebook Page also has the highest number of followers set against the other platforms (as shown in Table 2.1 below).

Table 1. Followers by Social Media Platform

Facebook	**TikTok**	**YouTube**	**Instagram**
452K	140.7K	3.82K	13.1K

All those rationales above explained why Facebook Page was selected for and in-depth analysis rather than other platforms.

To my knowledge, the study most closely aligned with this work is Peruta & Shields (2018). They analyzed 5,932 posts from 66 university Facebook pages—a sizable corpus overall; however, only 59 posts per page were collected over a two-month window, which may introduce page-level sampling error. To mitigate this limitation, the present study examines 389 posts across a six-month period to capture a broader and more event-diverse sample, and also more relevant to Vietnamese context.

Measuring Engagement

Universities' Facebook engagement, measured through likes, comments, and shares, can predict student enrollment numbers and inform financial planning (Cingilliouglu et al., 2022). Fähnrich et al., (2020) concluded that Facebook accounts with larger fan bases tend to generate higher levels of post engagement.

Engagement on Facebook is commonly measured in two forms: total engagement which captures absolute numbers of likes, shares, and comments, and proportional engagement, which relates interaction to the size of the audience (Peruta & Shields, 2018). For this research, with the data from one university over 6-month period, the author used total engagement.

The impact of content themes and post on university social media engagement has been consistently demonstrated in prior research. According to the Uses and Gratifications Theory (Katz et al., 1973), audiences actively select and engage with content that fulfills their specific needs—such as information seeking, entertainment, or social connection—implying that the relevance and quality of content themes directly shape the level of engagement they generate. In terms of content themes, athletics-related posts were found to significantly boost user interaction, whereas other topics generally had a neutral or negative effect on engagement (Peruta & Shields, 2018). Research-related posts generated more shares but fewer likes and comments, suggesting that while they may encourage information dissemination, they elicit lower emotional response ((Fähnrich et al., 2020a). For alumni engagement, universities can benefit from focusing on pride points, relevance, unifying imagery, and nostalgia to foster a stronger sense of community (Peruta & Shields, 2018).

Regarding post formats, user-generated content was found to drive higher engagement compared to institutional posts (Peruta & Shields, 2018). Although links were the most frequently used format—representing approximately 60% of content ((Maresova et al., 2020))—they were also the least effective in generating engagement (Valerio et al., 2015*)*. Conversely, images and visual content produced the highest levels of interaction but were underutilized relative to links (Valerio et al., 2015). Studies on posting frequency and media types further highlight that engagement patterns differ across institution types, offering guidance for universities to optimize their media mix (Peruta & Shields, 2017).

Based on the literature, this study explores the following questions in the context of Vietnamese higher education and HUST in particular:

1. What themes are most prevalent in the Facebook communication of top ten most-followed Vietnamese university Facebook Page?
2. Which effective content types remain underutilized by HUST?
3. Among these, which significantly affect engagement level on HUST' Facebook page?
4. Which post formats significantly affect engagement level at HUST?

3. METHODOLOGY

Research Procedure

Data were collected using the analytics tool Fanpage Karma which allows for monitoring and analysis of multiple social media platforms, including Facebook. This tool has been applied in prior studies of Sánchez, E.,et al (2015); Rodríguez, M. et.al (2016) and (Teijeiro-Álvarez et al., 2017). The dataset comprised information about 200 top posts from the ten most-followed Vietnamese university Facebook Page to find prevalent themes and 389 posts published by the official Facebook page of HUST for depth analysis during the six-month period from February to August 2025.

The study followed a multi-step procedure. First, the author adopted the 17 content categories proposed by Peruta and Shields (2018) as shown in Table 2 below.

Table 2. List of Seventeen Tentative Content Themes Reported by Peruta and Shields (2018)

Promotion	Overall information	Admin and staff	Athletics	Development	Campus
Student achievements	School spirit	News related	Research/ scholarly/ creative	Entertainment	Alumni
Programming	Admissions	Academic events	Performances and Exhibits	Student organizations	

Using open coding, the author compiled theme descriptions and keyword sets. The study collected the top 200 posts from the ten most followed Vietnamese university Facebook pages (as ranked by UniRank in Table 3) within the study window (6 months). Keywords were validated by distinctiveness: a term was retained only if its cross-theme Jaccard similarity was <0.50 (as used in Volger et.al, 2020). The author then applied regular expressions (Friedl, 2006) to assign themes; remaining NA posts were modeled with Structural Topic Modeling (Roberts et al., 2014) to obtain additional terms and, when warranted, to surface new themes.

As Krippendorff (2013) generally recommends excluding "rare" categories—those accounting for < 5% of the total units of analysis—because they are difficult to analyze statistically. For this research, the author chose 3 % as the cut-off point.

For 389 posts from HUST , iterations of regex–STM continued until NA ≤3%. The residual NA set (~<3%) was not promoted to a new theme to avoid rare categories. Finally, we tested engagement differences using independent-samples t-tests for themes and format.

Table 3: Top 10 Vietnamese Universities Ranked by Followers on Official Facebook Pages.

Rank	**University**	**Followers**
1	HUTECH University	733,527
2	National Economics University	511,027
3	Hanoi University of Science and Technology	427,357
4	University of Economics Ho Chi Minh City	393,932
5	Van Lang University	386,754
6	Vietnam National University, Hanoi	380,395
7	Duy Tan University	356,047
8	Van Hien University	326,235
9	FPT University	323,192
10	Vietnam National University, Ho Chi Minh City	315,873

Variables and Coding Scheme

At the individual post level, two dimensions were coded: content category and post format. For content themes, keyword sets were developed through open coding and iteratively refined. To ensure objectivity and minimize coder bias, a combination of regular expressions (regex) and Structural Topic Modeling (STM) was applied to classify posts. A single post could be assigned to multiple content categories, reflecting the multifaceted nature of social media content. For post format, three primary types were identified based on Fanpage Karma statistics—pictures, videos, and links—with a fourth category, text-only posts, added to reflect the communication practices of Vietnamese universities. Each post was assigned to exactly one format category.

4. RESULTS AND DISCUSSION

What themes are most prevalent in the Facebook communication of ten most-followed Vietnamese university Facebook Page?

Using a dataset of 200 posts—the top 20 by engagement from each of the 10 most -followed Vietnamese university Facebook pages—and an initial set of 17 themes, the author iteratively applied multiple round of regex-based labeling and STM. The process condensed the set to six themes and added one Vietnam-specific theme: highlighted social events. Final seven themes include: **Overall information; student achievements; development; school spirit; admission; program and highlighted social events**. The keyword set used for regex labeling was validated with a Jaccard similarity threshold < 0.5 to ensure distinctiveness and minimize overlap. This broadly aligns with (Fähnrich et al., 2020a); as in that study, themes are non-mutually exclusive, can co-occur, and show only weak correlations. The main contextual distinction is the emergence of new theme.

Which effective content types remain underutilized by HUST?

For HUST, of the 389 posts, 383 were assigned to the seven established themes; the remaining six posts were unclassified (NA)—<3%—and thus insufficient to warrant creating a new theme. This indicates that Hanoi University of Science and Technology's page employs all seven prevalent themes. The themes are not mutually exclusive; a single post may contain keywords from multiple themes.

The distribution of themes is presented as follows:

Table 4. Frequency of seven themes

Theme	Frequency (n)
Overall Information	123
Student Achievements	125
School Spirit	70
Academic Program	199
Admission	115
Development	206
Highlighted Social Events	342

Among these, which significantly affect engagement level on HUST' Facebook page?

To test whether engagement differed by content theme, the author ran a series of independent-samples t-tests with binary coding (post contains the theme = 1; otherwise = 0). Admissions posts yielded higher engagement than non-admissions posts (M = 1496.28, SD = 2204.54) versus (M = 695.83, SD = 993.82); $t(387) = -4.94$, $p < .001$. By contrast, academic programs posts showed lower engagement than posts without that theme (M = 639.50, SD = 977.26) versus (M = 1239.31, SD = 1856.65); $t(387) = 4.01$, $p < .001$. General information showed a modest but statistically significant difference (M = 1146.04, SD = 1641.36) versus (M = 833.71, SD = 1425.76); $t(387) = -1.99$, $p < .05$. Across all seven themes, three showed significant effects—admissions, academic programs , and general information. These findings align with Peruta & Shields (2018): admissions-related content tends to increase engagement, whereas program/programming content tends to decrease engagement. Admissions content often attracts a wider range of audiences—including prospective students, parents, and even members of the general public who are interested in observing the university's competitiveness and reputation. Such posts frequently contain time-sensitive information, such as application deadlines, TSA grading announcements, which naturally create a sense of urgency and relevance. This pattern is consistent with the Uses and Gratifications Theory (Katz et al., 1973), which concluded that audiences are motivated by goal-oriented, information-seeking behavior. Posts that help students make critical decisions—such as where and when to apply—satisfy these informational needs and therefore tend to generate higher levels of engagement.

Which post formats significantly affect engagement level at HUST?

To assess whether post format affects engagement, the author ran independent-samples t-tests with binary dummies for each format. The results show that text-only posts generated higher engagement than non-text posts (M = 2004.51, SD = 2406.74)

versus (M = 764.66, SD = 1227.99); $t(386) = -5.81$, $p < .001$. By contrast, posts containing an external link underperformed relative to posts without links (M = 522.64, SD = 851.53) versus (M = 1107.32, SD = 1676.93); $t(386) = 3.55$, $p < .001$. This partly diverges from a broad body of work showing a visual advantage: Dhanesh et al. (2022) report that organization-generated visuals with narrativity/interactive cues boost likes and comments; Lazard & Atkinson (2015) find infographics (visuals + text) elicit greater issue-relevant processing and engagement than text-only; Lu & Peng (2024) show images/videos attract more engagement than text across 10M tweets; and Kim & Lee (2025) observe that visually prominent content garners more attention on sports teams' pages. A plausible reconciliation is metric granularity and context: prior studies often decompose outcomes (likes, shares, comments) and isolate richer visual storytelling, whereas the present analysis uses an aggregate engagement measure and a university-communications context in which text-only posts (e.g., admissions/urgent notices) may mobilize audiences especially well; meanwhile, links likely divert users off-platform, reducing on-page interaction. In the context of HUST's page, many text-only posts deliver crucial, actionable information (e.g., registration deadlines, urgent notices) that users prefer to consume quickly without distraction. This suggests that simplicity and clarity may sometimes be more persuasive than rich media, particularly in institutional contexts where efficiency is valued. Besides, the negative association between external links and engagement is consistent with prior research on "off-platform friction." Redirecting users away from Facebook disrupts their browsing flow and may reduce their likelihood of liking, sharing, or commenting.

Table 5. Frequency of post format

Post Format	Frequency (n)
Picture	215
Link	115
Video	6
Text-only	53

5. CONCLUSION

This study revealed seven outperforming themes in Vietnamese university Facebook communication and demonstrated that admissions and general information are positively associated with engagement, whereas academic programs are negatively associated. With respect to format, text-only status updates outperform other formats on total engagement, while external links demotivate on-page interaction. Notably, highlighted social events emerged as a distinct, context-specific theme within the Vietnamese setting.

For practice—particularly among engineering universities in Vietnam—these findings suggest a clear content strategy. Institutions should prioritize themes that consistently mobilize audiences, especially admissions (e.g., deadlines, scholarship calls, step-by-step guidance) and general information (e.g., service alerts, policy updates). Communication should adopt a text-only message for time-sensitive or action-oriented posts, using visuals only when they materially clarify procedures (e.g., schedules, maps) rather than for decoration, and avoiding or carefully summarizing off-platform links that divert attention away from the page. In technical contexts, where cognitive load can be high, messages benefit from plain-language framing of "what/why/how," while highlighted social events can be used to concentrate attention at key moments (competitions,Vietnamese pride). Together, these choices align content with audience needs and platform dynamics to enhance measurable engagement.

Future research should refine these insights along three lines. First, audience segmentation is essential: engagement by prospective students, current students, alumni, and parents will clarify which themes and formats are most effective for each segment. Second, cross-platform replication (e.g., TikTok, Instagram, YouTube) is warranted, as algorithmic affordances and interaction norms differ and may privilege distinct content features; analyses should compare aggregate engagement with disaggregated metrics (likes, shares, comments, dwell time, click-through). Third, theme-level deep dives—for example,

focusing on admissions or highlighted social events—can iterate the keyword lexicon via regex and STM, preserving construct distinctiveness with a Jaccard similarity threshold < 0.5 and identifying "anchor" terms that robustly predict engagement. These extensions would strengthen external validity, illuminate heterogeneity across audiences and platforms, and sharpen practical guidance for technology- oriented universities seeking to communicate more effectively.

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