

Effective Marketing Strategies for Growing STEM Racing Programs in Saudi Arabia (Al-Ahasa Hub): A Marketing Study

Ghazal Alreefi^{1*} Jassem Alqattan²

1. STEM Racing Programs (Al-Ahasa hub) Saudi Arabia

2. School of Economics, Peking University, 176 Zhong Guan Cun Street, Beijing 100086, China

* E-mail of the corresponding author: ghazalsaeeds@gmail.com

Abstract

This study examines how contemporary marketing strategies influence the growth and visibility of STEM racing programs in Saudi Arabia, with a particular focus on identifying which strategies are perceived as most effective by individuals familiar with marketing and STEM initiatives. Data were collected through an online questionnaire completed by 70 participants with backgrounds or interests in marketing, STEM racing, or related business fields. Participants evaluated the perceived effectiveness of several established marketing frameworks, including T-Marketing, Google Micro-Moments, the Unique Selling Proposition (USP), the 3Cs, Jobs to Be Done (JTBD), the 4Ps, and the sponsorship funnel. Findings indicate clear differences in perceived effectiveness across strategies, with targeted digital approaches such as T-Marketing receiving stronger evaluations, while more traditional models such as the USP were perceived as less effective due to inconsistent application. The study provides practical insights into how STEM racing teams can enhance communication, strengthen audience engagement, and improve promotional outcomes. Ultimately, this research guides teams toward more strategic, consistent, and impactful marketing practices that support the continued development of STEM racing programs in Saudi Arabia.

Keywords: STEM racing, marketing strategy, T-Marketing, Google Micro-Moments, USP, Saudi Arabia

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1. Introduction

STEM is an acronym for Science, Technology, Engineering, and Mathematics, representing both a set of academic disciplines and an educational approach that aims to develop problem-solving, critical thinking, creativity, and innovation skills. In the context of educational programs, STEM racing provides students with opportunities to apply theoretical knowledge to practical, real-world engineering and business challenges, allowing learning to extend beyond the classroom.

One such initiative is F1 in Schools, which in recent years has evolved into what is now known as STEM Racing. This international STEM education program is inspired by Formula 1 racing, the premier class of global single-seater auto racing. The program allows students to design, manufacture, and race miniature Formula 1 cars, fostering skills in engineering, design, teamwork, project management, and marketing. Teams employ advanced tools such as computer-aided design (CAD), computer-aided manufacturing (CAM), and 3D printing technologies to create their cars, which are then tested on specialized racing tracks.

Beyond technical expertise, STEM Racing places strong emphasis on business and marketing components, including sponsorship acquisition, branding, and strategic promotion. A marketing strategy can be defined as a comprehensive, long-term plan that guides how products, services, or initiatives are promoted in order to reach target audiences, increase engagement, and support growth. By integrating STEM education with real-world business and marketing challenges, the program offers students a multidimensional learning experience that closely mirrors professional engineering and commercial environments.

Despite the importance of marketing for the success and sustainability of STEM racing teams, limited research has examined which modern marketing strategies are most effective within this educational context, particularly in Saudi Arabia. This study therefore aims to identify and evaluate contemporary marketing strategies and examine how they are perceived in terms of effectiveness for growing STEM racing programs in the Saudi Arabian context. By addressing this gap, the research provides practical guidance for STEM racing teams to

improve visibility, attract sponsorship, and engage wider audiences, while also supporting educators and program organizers in strengthening the sustainability of STEM education programs in Saudi Arabia. In addition, the study examines the key factors that explain differences in perceived effectiveness between the highest-rated and lowest-rated marketing strategies within STEM racing programs.

2.Literature Review

Recent research highlights that effective marketing depends on credible communication, strategic alignment, and context-specific execution. In the domain of social media influencer (SMI) marketing, Ooi et al. (2023) demonstrate that influence credibility and mobile platform convenience are central drivers of positive attitudes and subsequent purchase behavior. Interestingly, they find that high interactivity can reduce attitudinal favorability, and that credibility effects differ across genders. These findings indicate that influencer marketing works best when firms prioritize credible messengers and seamless user experiences rather than relying solely on interactive features.

Complementing this, a recent meta-analysis (2025) confirms that SMI marketing generally enhances credibility, attitudes, engagement, and purchase intention, while also emphasizing that its effectiveness varies depending on influencer size, message characteristics, and product type. As a whole, this literature suggests that influencer marketing is effective but highly contingent, requiring careful alignment between influencer choice, message design, and audience characteristics.

Beyond digital tactics, Thorpe and Morgan (2007) argue that marketing strategy implementation is not universal, but instead must align with a firm's internal structure, resources, culture, and coordination capabilities. Their research suggests that many marketing failures stem from weak execution rather than poor strategy formulation. This reinforces the importance of organizational readiness and internal fit for converting marketing strategies into actual performance outcomes.

Parallel to this, Cui and Choudhury (2002) examine marketing in diverse marketplace environments, highlighting the tension between the benefits of subcultural segmentation and the resource demands it creates. Their nested segmentation approach, which balances broad campaigns with selectively targeted sub-segments, offers a cost-effective way to achieve relevance without excessive complexity.

Together, these studies underscore that marketing effectiveness is shaped by multiple connected factors, including credible communication, context-sensitive segmentation, and strong organizational alignment. However, despite these insights, the literature still lacks an integrated perspective that connects digital influencer dynamics, cost-effective segmentation, and internal readiness for implementation within a single framework.

3.Methodology

3.1 Research design

Towards achieving a higher level of efficiency and competitiveness in manufacturing operations, the This study uses a quantitative descriptive approach which seeks to analyze the effectiveness of marketing strategies for growing STEM racing programs in Saudi Arabia. A descriptive survey design is used to reflect the data of the participants' viewpoints regarding different marketing strategies, with a focus on using numerical data for analysis. The quantitative approach allows for clear, measurable comparisons between strategies and provides insight into how effective each one is perceived within the STEM racing context.

3.2 Sample

The sample consisted of 70 people with knowledge and interest in different marketing strategies, STEM racing, or the business field. Participation was voluntary, and the questionnaire responses were collected anonymously to encourage participants to provide honest and unbiased feedback. Considering the specific context of the questionnaire, the sample size was regarded as sufficient to obtain essential and meaningful responses for this study.

3.3 Procedure

Data were gathered through a survey questionnaire distributed via Google Forms. The survey included closed-ended questions designed to capture participants' views on several well-known digital and strategic marketing approaches. These included T-shaped marketing, Google Micro-Moments, the Unique Selling Proposition (USP), the 3Cs, Jobs to Be Done (JTBD), the 4Ps, and the sponsorship funnel. After data collection,

the responses were automatically compiled and reviewed using the Google Forms “Responses” tab. This feature provides basic quantitative tools such as frequency counts, percentages, and simple visual summaries including charts and graphs. These tools were used to identify patterns and compare the perceived effectiveness of the various marketing strategies.

3.4 Findings

The findings of this research are based on the analysis of poll responses that evaluated the effectiveness of various marketing strategies previously used by the F1 in Schools team. The effectiveness of each individual strategy was determined by the frequency of high-level responses, where higher frequencies indicated a stronger perceived impact.

The results showed that T-Marketing was perceived as the most effective strategy. Approximately 33.3% of respondents selected “Moderate” effectiveness, while a large proportion selected high or very high effectiveness levels, indicating strong recognition of the benefits of focused marketing. These responses suggest that the perceived success of T-Marketing depends largely on the quality of execution and the consistency of content. Only 6.7% of respondents indicated that this strategy had low or no effectiveness, demonstrating minimal disagreement regarding its impact.

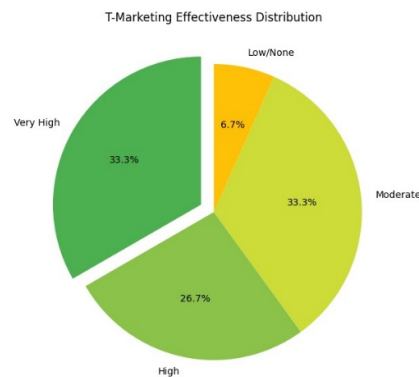


Figure 1. The T-Marketing Effectiveness Distribution

The comparative findings revealed a clear difference in perceived effectiveness between T-Marketing and the Unique Selling Proposition (USP) strategy. T-Marketing demonstrated higher effectiveness, with the majority of respondents selecting high or very high effectiveness levels, showing strong support for concentrating marketing activities on one primary platform. Conversely, the USP strategy exhibited a weak effectiveness distribution, as “Neutral / Occasionally mentioned” was the dominant response. This indicates inconsistency in how the team’s unique attributes were communicated, reflected by the low frequency of “Very Clear” ratings alongside a notable share of unclear or unmentioned responses. These factors message clarity, consistency, and focused platform use help explain the difference in perceived effectiveness between the highest-rated and lowest-rated strategies.

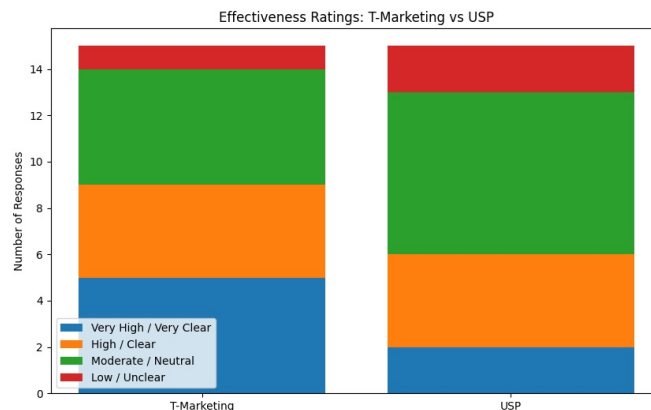


Figure 2. The Effectiveness Ratings: T-Marketing vs USP

4. Discussion

This study aimed to identify the most effective marketing strategies for STEM racing programs, and the findings indicate that T-Marketing, which focuses marketing efforts on a single primary platform, was perceived as the most effective strategy. This section begins by addressing strategies that were perceived as having low to moderate effectiveness. The Unique Selling Proposition (USP), the sponsorship funnel, and the 4Ps of marketing rely on clearly defined and standardized marketing frameworks; however, survey results suggest inconsistencies in their implementation and communication. The findings show that USP was not strongly perceived, as respondents neither agreed nor disagreed that the team's uniqueness was clearly presented. Likewise, the sponsorship funnel and the 4Ps were rated as only moderately structured, reflecting limited effectiveness caused by inconsistent application.

Approaches that emphasized understanding the audience and conducting strategic analysis, including Jobs to Be Done (JTBD) and the 3Cs, outperformed framework-based strategies. These strategies were frequently evaluated as highly effective, reflecting positive attitudes toward data-driven planning and audience-centered communication. Moderate and occasional evaluations indicate that these strategies were applied irregularly, diminishing their competitive effectiveness. Similarly, the Google Micro-Moments strategy demonstrated strong performance, as high effectiveness ratings indicated that participants widely acknowledged the impact of targeting users at critical moments of need. At the same time, variation in participant ratings suggests differences in how effectively the strategy was implemented, indicating that although impactful, greater consistency could further enhance its effectiveness.

T-Marketing emerged as the most effective marketing strategy according to the survey results. A large proportion of respondents rated it as "Very High" or "High" in effectiveness, with minimal neutral or negative responses, reflecting a strong consensus about its impact. This suggests that concentrating marketing efforts on a single primary platform enhanced message clarity, consistency, and audience engagement, allowing teams to communicate more effectively than when using multiple, dispersed channels.

These results align with existing research in digital marketing, which emphasizes that focused platform strategies improve brand recall and engagement. Studies show that when marketing efforts are concentrated on one main channel, audiences experience more coherent messaging, leading to stronger brand recognition and higher perceived effectiveness (Chaffey, 2020). Additionally, focused strategies allow for better optimization of resources, as teams can allocate time and content creation more efficiently, improving both reach and quality of engagement. Research also highlights that scattered multi-platform approaches, while potentially increasing reach, often reduce message consistency and weaken audience connection, which supports why T-Marketing outperformed other strategies in this study (Lamberton & Stephen, 2016).

5. Conclusion

Overall, the survey findings and supporting literature indicate that T-Marketing's focus on a single primary

platform is a key factor in its superior effectiveness, demonstrating that strategic concentration, consistent messaging, and optimized audience engagement are crucial for achieving strong marketing outcomes. This study highlights the strong potential of modern marketing strategies in supporting the growth and visibility of STEM racing programs in Saudi Arabia. Survey responses show that certain strategies particularly T-Marketing demonstrated clear effectiveness by helping teams deliver focused, consistent, and engaging messages to their audiences.

While some approaches, such as the Unique Selling Proposition (USP) and the 4Ps, were perceived as less effective due to inconsistent application, audience-centered strategies like Jobs to Be Done (JTBD), the 3Cs, and Google Micro-Moments showed promise in improving communication and outreach. These findings suggest that when teams adopt marketing methods that align with audience behavior and emphasize clarity, they can significantly enhance engagement and program awareness. With further refinement such as improving consistency in applying structured frameworks STEM racing teams could strengthen their promotional impact even further.

However, this study is based solely on participants' perceptions gathered through a single online questionnaire and does not include real-world performance data or comparisons with marketing outcomes from other regions or programs, which limits the generalizability of the findings.

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