Exploring how artificial intelligence can be used effectively in student recruitment marketing

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1. Introduction

In recent years, Higher Education Institutions (HEIs) have been forced into an increasingly competitive environment. This is attributed to a range of factors, such as globalisation, competitiveness, increased focus on rankings and declines in public funding (Hemsley-Brown et al., 2016; Miottoa, Del-Castillo-Feitob, Blanco-González, 2020). LJMU's Undergraduate applications have declined in recent years. For September 2024 entry applications and acceptances fell 10% year on year (LJMU Web Hub, 2024). This decline is higher than the overall sector, which had a 1.1% increase in applications (UCAS, 2024). This growth was fuelled by higher tariff HEIs, which increased student numbers while medium and lower tariff institutions dropped.

The concept of Artificial Intelligence (AI) was first introduced by seminal writers McCarthy et al. (1955). AI refers to "a machine that behaves in a way that could be considered intelligent, if it was a human being" (McCarthy, 2007, cited in Mehta et al., 2022). Thormundsson (2023) estimates that chatbots, image generating AI and mobile applications will be the major trends improving AI in the coming years, however there is a lack of research into the application of AI in HE marketing. This research aims to fill this gap by researching how AI can be used in HE digital marketing to influence the recruitment of students. This is of interest to HE marketing professionals looking for ways to innovate, improve their marketing practices and increase student recruitment figures.

2. Research objectives

The study is entitled 'How can Artificial Intelligence be used in Higher Education digital marketing to influence the recruitment of students?' It aims to: explore different ways that AI is used in HE digital marketing, such as personalisation, segmentation, content generation, machine learning and automation; apply the theory of Connectivism to digital marketing in HE to explore how it can be used to personalise the audiences' experience and improve brand experience and reputation; and apply the theory of Anthropomorphism to determine how the recruitment of students can be influenced through personalising AI technology.

3. Literature Review

According to Wong et al. (2022), the term digital natives was coined by seminal writer Prensky (2001) when referring to a generation whose lives are closely knitted to mobile and function best when connected. Generation Z are known as the 'net generation' or 'digital natives' who have grown up in a technology-rich environment who expect HEIs to have a clear brand presence. This results in a need for HEIs to improve their marketing and branding strategies to enhance their reputation and develop greater understanding of student consumer decision-making (Angulo-Ruiz et al., 2022) and to be innovative, rather than generic (Hung and Yen, 2022).

Thormundsson (2023) estimates that the global AI market will show strong growth in the next decade, with its value expected to increase twenty fold by 2030, to US\$100 billion. According to the literature, AI can be used for a variety of marketing tasks, such as sales forecasting (Sohrabpour et al., 2021), understanding customer preferences (Brito et al., 2015), programmatic advertising targeting (Chen and Feng, 2021) and chatbots (Haristiani, 2019). Anthropomorphism is the tendency to attribute human-like characteristics, such as intentions, emotions or motivations, to non-human agents (Seeger and Heinzl, 2018). Meanwhile, Connectivism explores how internet technologies such as web

browsers, search engines, online forums and social networks contribute to new avenues of learning (Siemens, 2006; Downes, 2006).

This research presents an opportunity for LJMU to improve its share of the UK student market as recruiting new students is key to its aim to: "be a university chosen by highly motivated and talented students" (LJMU Strategic Plan, 2030) and overall target to recruit 25,000 students (LJMU Web Hub, 2024). It is also an opportunity for LJMU to harness the use of AI technology to make its marketing more effective and connect with its main target audience comprising Generation Z and digital natives.

4. Research Design

The study will be completed using multi-phase research with embedded design and the research method is qualitative research conducted using interviews, online observations, focus groups and diary keeping. Saunders, Lewis and Thornhill (2019) define qualitative research as a strategy based on meanings expressed through words and images, rather than numbers.

The research will be sequential in consecutive phases where one stage of the research feeds into the next. Using a sequential design means that the data accrued could affect the future course of the research (Berry, 2015). The research is sequential because the use of AI in marketing is currently new and dynamic and it is necessary to first establish a clear image of the concept. Conducting interviews with marketing professionals first will enable the author to build an understanding of the subject area from the outset. Netnography and ethnography (Kozinets, 2010) will be conducted second to understand the phenomenon further and gain knowledge of more recent developments in AI and to develop a framework to demonstrate how digital marketing and AI can be used to influence the recruitment of students. The final stage will be focus groups to enable the researcher to go more indepth and to test and validate the marketing framework with current LJMU students. The author is also keeping a diary to capture insider research findings throughout the study.

5. References

- Angulo-Ruiz, F., Pergelova, A., Cheben, J. and Agulo-Altamirano, E. (2022) How do marketing activities influence organizational reputation in higher education institutions? An impression management perspective across eight countries. *International Marketing Review* [online], 39(4), pp. 984–1021. DOI: 10.1108/IMR-05-2021-0180 [Accessed: 27th June 2023]
- Berry, S. (2023) *What is Martech? Marketing Technology Definition, Examples and Benefits* [blog], 29th August 2023 Available at: <u>https://www.webfx.com/blog/marketing/what-is-martech</u> [Accessed: 14th September 2023]
- Brito, P., Soares, C., Almeida, S., Monte, A. and Byvoet, M. (2015) Customer segmentation in a large database of an online customized fashion business. *Robotics and Computer-Integrated Manufacturing* [online], 36, 93–100 [Accessed: 28th June 2023]
- Chen, Y. and Feng, S. (2021) Artificial Intelligence: Creating More Possibilities for Programmatic Advertising. In: Ahram, T.Z., Karwowski, W., Kalra, J. (eds). *Advances in Artificial Intelligence, Software and Systems Engineering*, AHFE 2021. Lecture Notes in Networks and Systems, vol 271 [online]. DOI: 10.1007/978-3-030-80624-8_19 [Accessed: 14th September 2023]
- Downes, S. (2006) Learning Networks and Connective Knowledge. *Collective Intelligence and Elearning* [online], 20, 1-26. Available at: <u>http://it.coe.uga.edu/itforum/paper92/paper92.html</u> [Accessed: 1st December 2023]
- Haristiani, N. (2019) Artificial intelligence (AI) chatbot as language learning medium: an inquiry. *Journal of Physics: Conference Series* [online], 1387(1):012020. DOI: 10.1088/1742-6596/1387/1/012020 [Accessed: 28th June 2023]
- Hemsley-Brown, J., Melewar, T.C., Nguyen, B. and Wilson, E.J. (2016) Exploring brand identity, meaning, image, and reputation in higher education: A special section. *Journal of Business Research* [online], 69(8), pp. 3019–3022. DOI: 10.1016/j.jbusres.2016.01.016 [Accessed: 27th June 2023]

 Hung, N. T. and Yen, K. L. (2022) Towards Sustainable Internationalization of Higher Education: Innovative Marketing Strategies for International Student Recruitment. *Sustainability* (*Switzerland*) [online], 14(14). DOI: 10.3390/su14148522 [Accessed: 3rd November 2023]

Kozinets, R. (2010) Netnography: Doing Ethnographic Research Online. London: SAGE

LJMU Strategic Plan (2023) [online] Available at: <u>www.ljmu.ac.uk/about-us/our-vision-and-values/mission-and-strategy</u> [Accessed: 27th June 2023]

LJMU Web Hub (intranet) (2024) [online] Available at: <u>https://aphub.ljmu.ac.uk/Staff/WH2/General/index.asp</u> [Accessed: 29th October 2024]

McCarthy, J., Minsky, M. L., Rochester, N. and Shannon, C. E. (1955) A proposal for the dartmouth summer research project on artificial intelligence. *AI Magazine* [online], 27(4), 12–14. DOI: 10.1609/aimag.v27i4.1904 [Accessed: 27th June 2023]

Mehta, P. et al. (2022) Artificial intelligence in marketing: A meta-analytic review. *Psychology and Marketing* [online], 39(11), pp. 2013–2038. DOI: 10.1002/mar.21716 [Accessed: 28th June 2023]

Miotto, G., Del-Castillo-Feito, C. and Blanco-González, A. (2020) Reputation and legitimacy: Key factors for Higher Education Institutions' sustained competitive advantage. *Journal of Business Research* [online], 112, pp. 342–353. DOI: 10.1016/j.jbusres.2019.11.076 [Accessed: 27th June 2023]

Prensky, M. (2011) Digital natives, digital immigrants part 2: Do they Really think differently? On the Horizon [online], 9(6), 1–6. DOI: 10.1108/10748120110424843 [Accessed: 7th December 2023]

Saunders, M., Lewis, P. and Thornhill, A. (2019) *Research Methods for Business Students*. 8th ed. Harlow: Pearson

Seeger, A. M. and Heinzl, A. (2018) Human vs machine: Contingency factors of anthropomorphism as a trust-inducing design strategy for conversational agents. *Information Systems and Neuroscience* [online], pp. 129–139. DOI: <u>10.1007/978-3-319-67431-5_15</u> [Accessed: 5th December 2023]

Siemens, G. (2006) Connectivism: Learning Theory or Pastime of the Self-Amused? [online] Available at: <u>http://www.elearnspace.org/Articles/connectivism_self-amused.htm</u> [Accessed: 1st December 2023]

Sohrabpour, V., Oghazi, P., Toorajipour, R. and Nazarpour, A. (2021) Export sales forecasting using artificial intelligence. *Technological Forecasting and Social Change* [online], 163, 120480. DOI: 10.1016/j.techfore.2020.120480 [Accessed: 28th June 2023]

Thormundsson, B. (2023) Artificial intelligence (AI) market size worldwide in 2021 with a forecast until 2030 [blog], 6th October 2023 Available at: <u>www.statista.com/statistics/1365145/artificial-intelligence-market-size</u> [Accessed: 27th June 2023]

UCAS (2024) End of Cycle Report 2024 [online] www.ucas.com/undergraduate-statistics-andreports/ucas-undergraduate-releases/ucas-undergraduate-applicant-releases-2024-cycle

[Accessed: 29th October 2024]

Wong, L.W., Tan, G.W., Hew, J.J., Ooi, K.B. and Leong, L.Y. (2022) Mobile social media marketing: a new marketing channel among digital natives in higher education? *Journal of Marketing for Higher Education* [online], 00, pp.1–25. DOI: 10.1080/08841241.2020.1834486 [Accessed: 17th April 2021]