

 THE RESEARCH AGENDA

College Enrollment and Digital Maturity: A Quantitative Study of Small New England Colleges

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Smaller colleges and universities feel an increasing urgency to respond to an enrollment cliff, a decline in student matriculation created by demographic changes and the convenience and efficacy of online teaching modalities. This research study investigated the impact of digital maturity on enrollment in small colleges with registration of less than 5,000 in the New England region of the United States. The study focused on understanding the impact of digital maturity through a comprehensive analysis of 77 college websites. It used a Poisson regression model to analyze domain rating, URL rating, backlinks, keywords, traffic, paid marketing, and a proprietary ranking (*Ahrefs*¹) to understand the impact of these components of digital maturity on enrollment. *Ahrefs* was chosen as it is a respected search engine optimization (SEO) online toolset used by marketers from world-leading companies to analyze and improve their websites.

The findings suggest a positive impact of digital maturity on college enrollment. Moreover, the study highlighted that digital maturity is an integral part of the stature and reputation of a college. The research proposes that digital maturity was one of the key pillars of attracting students to new colleges, inseparable from other factors like *athletics*, *housing*, *campus beauty*, *community feel*, and *reputation of faculty*. This research is significant for college administrators who aim to improve their enrollment rates, particularly considering the constrained demographics and continued changes in education delivery. This research also proposes a framework of digital maturity assessment that college administrators can use to assess and create their enrollment strategy.

¹ Ahrefs (ahrefs.com) is the twelfth most active web crawler in the world and provides detailed analytics about website usage.

Enrollment management has continued to mature as a discipline since it was initially developed in the late 1970s and 1980s (Head, *et al.* 2022). The chief enrollment officer role is usually responsible for enrollment management at a college. This role has wide-ranging responsibilities that include influencing the marketing at colleges (Hinojosa, Luf, and Woolston 2023). In recent years, college enrollment trends have been changing. From 2010 to 2021, undergraduate enrollment dropped by 15 percent, or about 2.6 million students (Meyer 2023). In 2022, The World Economic Forum reported a 10 percent decrease in college enrollments across the United States, especially profound in the New England region. In this area of the United States, the number of college-bound seniors between 2012 and 2029 is expected to decrease by more than 15 percent (Grawe 2018). This enrollment decline has resulted in the closure of eighteen colleges across the New England region since 2016 (Higher Ed Dive 2023).

To ensure survival in this increasingly-declining market, college administration, including the chief enrollment officers, must find new strategies to reengage prospective students, reinforce the value of a college degree, and reduce costs while providing quality education (Baum, Kurose, and McPherson 2013).

Digital transformation provides an effective way for colleges to remediate the existing gaps in the current environment (McCusker and Babington 2018). Furthermore, the benefits of direct admissions are creating an easy and simple way for students to finalize their admissions selection (Delaney, Trinh, and Odle 2023). This creates an even higher stake for colleges to create a highly attractive digital presence. By design, the new digital methods of networked web and social media marketing are targeted to enhance engagement.

Engagement has positive returns for college recruitment and retention (Fraysier, Reschly, and Appleton 2020). Engagement in the digital age requires colleges to provide today's students with relevant and interesting experiences (McCusker and Babington 2018). The 2017 International Student Survey reported that 83 percent of prospective students used social media in their

college search, with Facebook, YouTube, and WhatsApp being the most popular platforms (Ortiz-Ospina 2019).

Social media connects prospective students to the college and informs them of recruiting events (Hayes, Ruschman, and Walker 2009). In addition, the college's website provides an informational anchor point from which school news and event marketing emanates. Teamed together, social media and an appealing website enhance the overall public image of a college by promoting up-to-the-minute information, academic work, research, and alumni success (Peruta and Shields 2018). Content is essential in converting social media followers and website visitors to enrolled students (Taylor and Childs 2022).

Higher education administrators also recognize the impact of content-rich social media websites to attract students, and, consequently, most colleges use digital methods in their recruitment efforts (Kelleher and Sweetser 2012). However, many colleges fail to research, plan, and invest in a coordinated, cross-campus communication plan that involves key stakeholders and translates into an effective digital marketing strategy (Constantinides and Stagno 2012).

The literature supports that digital transformation in marketing is essential to enrollment efforts. It also provides colleges with well-developed best practices to support their digital transformation efforts. However, there is limited research that has tested the effectiveness of digital maturity of colleges on enrollment. This research addressed this gap in literature by examining if digital maturity impacted college enrollment. This article begins with a review of the literature, followed by development of a method for evaluation, the model, an analysis of the results, gaps in the current research, and potential for future research.

Literature Review

Research on the impact of digital maturity on organizations is copious and comprehensive (Bloching, *et al.* 2007). A study of digital maturity was a natural evolution from research on the maturation process of businesses. For decades the stages of *maturity* helped

TABLE 1 ► Five Stages of Maturity of Business Development

	Stage	Key Issues	Product and Market Research
1	Inception	Obtaining customers, economic production	None
2	Survival	Revenues and expenses	Little to none
3	Growth	Managed growth, ensuring resources	Some new product development
4	Expansion	Financing growth, maintaining control	New product innovation, market research
5	Maturity	Expense control, productivity, niche marketing if industry declining	Production innovation

Source: Scott and Bruce 1987

TABLE 2 ► Five Stages of Digital Maturity

	Stage	Key Characteristics
1	Promote and Support	► Consistent customer experience ► Management support of digital transformation
2	Create and Build	► Digital innovation emphasized ► New technologies and applications are tried and adopted
3	Commit to Transform	► Organizational culture aligns with new capabilities ► Worker expertise aligns with transformation management
4	User-Centered and Elaborated Processes	► Users involved in innovation ► Personalized customer experiences
5	Data-Driven Enterprise	► Data analytics drives decision making ► Customer data collated across multiple channels

Source: Berghaus and Back 2016

structure understandings of organizational effectiveness. Scott and Bruce (1987) posited five stages of maturity to differentiate business development (Table 1).

In the digital era, researchers (Westerman, Bonnet, and McFee 2014) interviewed 150 executives in 50 large companies, across fifteen countries, to understand how digital advances such as analytics, social media, and traditional technologies change customer relationships, internal processes, and value propositions. They found that the best companies combine digital activity with strong leadership to turn technology into transformation. They called this status *digital maturity* and found that companies that are more mature outperform those that are not.

In another digital maturity study, (Berghaus and Back 2016) surveyed 547 individuals from 417 organizations in Switzerland and Germany to derive five maturity stages (Table 2). The highest digital maturity scores were reached in the IT and telecommunication industry (3.22 out of 5), followed by retail/wholesale (2.98) and transportation/logistics (2.94). The lowest mean maturity scores were found in banking (2.42) and the consumer goods industry (2.23). They concluded that digital transformation must be strategically planned, rather than intuitively managed.

As digital maturity research was conducted, the need to effectively measure and identify the digital maturity stages grew in importance. (Teichert 2019) reviewed the

digital maturity literature of 24 relevant studies including 22 different models to extract key characteristics of digital maturity. He found the existing models wanting since they lacked cultural attributes incorporated in the understanding of digital maturity. Teichert concluded that digital maturity needed more study. Indeed, further research followed.

Aslanova and Kulichkina (2020) analyzed existing definitions of digital maturity from scholarly research from 2007 to 2019 and defined digital maturity based on three elements: (1) the current digitization level, (2) the digitalization strategy, and (3) the readiness for digitization. They labeled digital engagers as beginners, catching-ups, off-track, and leaders. Leaders outperformed all other categories regarding their impact on business effectiveness and profits.

Additional research and studies of digital maturity measurements and modeling on digital maturity model 4.0 (Gill and VanBoskirk 2016) include the four dimensions of cultural, organizational, technical, and insights challenges. (Colli, *et al.* 2018) examined seventeen existing digital maturity models regarding their validity of measurement and concluded that most of the identified models did not conform to standardized evaluation criteria.

The research contributed to the development of an ever-expanding digital mindset, a conscious, mental awareness that the power of digital data must be harnessed to increase the value of organizations, people, and processes (Leonardi and Neeley 2022). Further refinement of the digital outlook led to an understanding of *digital personalities*; a term often associated with research focused on websites (Bahr 2018). Starcevic and Konjikusic (2018) examined tourism websites, finding that consumers prefer websites that augment their own disposition.

Research of the impact of digital maturity on student choice was not confined to U.S. scholars. Academics from across the globe were interested in how digital marketing could improve their engagement with potential students. Research on this topic has been conducted in Europe (Rodríguez-Abitia and Bribiesca-Correa 2021), Indonesia (Kusumawati 2019) and India (Bhagowati and Dutta 2018) to name a few places across the world.

The review of literature enforced the belief that digital maturity is an important element impacting upon college enrollment. Furthermore, the literature review highlighted several stages that should be considered in the development of a successful digital strategy.

Method

The research question for this study is—What is the impact of a college's digital maturity on its enrollment?

The sample for this research was generated using the Integrated Post-Secondary Data System (IPEDS). A list of private, four-year, nonprofit colleges in New England with fall 2021 undergraduate enrollment greater than 450 and less than 5,000 students was created. This sample returned a list of 77 colleges that was analyzed.

Based on the research question, enrollment was determined as the dependent variable. Digital maturity was defined by a combination of variables that are standard across various colleges. These are the independent variables and included non-categorical and categorical variables. Following is a description of these variables:

■ Non-Categorical Variables

- *Domain Rating*: Shows the strength of a website's backlink profile compared to others in the *Ahrefs* database on a 100-point scale. *Ahrefs* was a recognized source and had the second most active crawler after Google. Crawlers are applications that pull data from various websites for analysis.
- *URL Rating*: Demonstrates the strength of a webpage's link profile on a 100-point scale.
- *Backlinks*: Total number of links from other websites that point to the target website.
- *Referring Domains*: The total number of unique domains linking to the target website.
- *Keywords*: Total number of keywords that the target website ranks in the top 100 organic search results.
- *Traffic*: Monthly website visits.
- *Ahrefs Rank*: The quality of all websites in the database by the size and quality of their backlink profiles.

TABLE 3 ► Regression Equation, Ads

No	Yes
<i>UG Enrollment = exp(Y')</i>	
$Y' =$ 5.380 + 0.03966 Domain Rating (DR) – 0.000000 <i>Ahrefs</i> Rank (AR) – 0.01172 URL Rating (UR) – 0.000000 Backlinks + 0.000001 Referring Domains – 0.000004 Keywords + 0.000003 Traffic	$Y' =$ 5.334 + 0.03966 Domain Rating (DR) – 0.000000 <i>Ahrefs</i> Rank (AR) – 0.01172 URL Rating (UR) – 0.000000 Backlinks + 0.000001 Referring Domains – 0.000004 Keywords + 0.000003 Traffic

TABLE 4 ► Coefficients

Term	Coefficient		Z-Value	P-Value	VIF
	#	SE			
Constant	5.334300	0.066800	79.88	0	—
Domain Rating (DR)	0.039659	0.000886	44.74	0	7.08
<i>Ahrefs</i> Rank (AR)	0	0	-8.57	0	5.43
URL Rating (UR)	-0.011718	0.000559	-20.97	0	1.39
Backlinks	0	0	-14.50	0	1.54
Referring Domains	0.000001	0	22.54	0	1.05
Keywords	-0.000004	0	-31.22	0	5.62
Traffic	0.000003	0	41.57	0	4.81
Ads: Yes ¹	0.045200	0.005700	7.92	0	1.20

Abbreviations Key

- SE = Standard Deviation
- VIF = Variance Inflation Factor

¹ Indicates that the college/university is buying online advertising

■ Categorical Variable

→ *Paid Ads*: Search results that are purchased by the target website.

Poisson regression was selected for the analysis of the research question. Poisson regression is generally used for its predictive ability. Additionally, Poisson regression was deemed appropriate as it supports the lower sample sizes (Zou 2004). In this research, we have used Poisson regression to understand the predictability of college enrollment based on the various digital maturity factors.

The Poisson regression model had a zero P value for all the independent variables and was therefore deemed statistically significant. The R Square was 43 percent.

Hence, the independent variables explained 43 percent of variability in enrollment. Table 3 has the summary of the output of the Poisson regression model.

As listed in Table 4, P Value for independent variables is zero. This indicated that the model results were significant.

In Poisson regression, R square is the measure of how well the model explains the variability of the independent variables. Higher values of R square indicate a better fit of the model, which provides an indication of how well the independent variables explain the variance in the dependent variable. As listed in Table 5 (on page 14), this model has an R Square of 43 percent, which suggested that 43 percent of the variance in enrollment explained by the independent variables. Con-

TABLE 5 ► Model Summary

Deviance (%)	
R ²	Adjusted R ²
43.01	42.99

sidering there are many non-digital factors (*e.g.* faculty, facilities, athletics etc.) that influence enrollment, 43 percent is a relatively high R square for this study.

Case Studies

In addition to the quantitative modelling above, various colleges were studied qualitatively to further inform the research. In alignment with the five stages of business and digital maturity, a profile of five colleges, each in a different stage of digital maturity, was developed and examined. Digital maturity of these colleges was studied in relation to the ranking of *U.S. News & World Report*. The intent of this part of the study was to understand if digital maturity has some directional impact on the rankings of the colleges as well.

Four colleges were selected from the list of colleges that were studied in the quantitative model. One additional top college was added to the qualitative analysis to further understand the impacts of digital maturity. Two colleges were selected from the top and two from the bottom of the *Ahrefs* rankings (backlinks, domain ratings, and traffic ratings). One college was added from the top 1 percent of elite schools as determined by *U.S. News & World Report*.

Table 6 lists the profiles of colleges for the case studies. Below is a brief account of notable characteristics and offerings for each college used in the analysis:

- **College A:** Was founded to help accelerate the industrial revolution. This is a school with a global presence, a “magnet for talent from around the world” (MIT 2023). This institution has played a significant role in the development of modern technology and science. Common careers are in computers and information technology, business development, engineering, education, and operations. Top employers include College A, Google, Amazon, Apple, and Microsoft.
- **College B:** An undergraduate college committed to educating students in the tradition of the liberal arts. A home for immersive language study, the school is renowned for its strong writing and global studies programs (Middlebury College 2023). Common careers are in business development, education, media and communication, community and social services and operations. Of the 77 schools examined, this school ranked #1 backlinks, #3 referring domains, #3 domain rating, and #4 *Ahrefs*.
- **College C:** A community of scholars and students, self-described as a “medium-sized private research university with global reach, dedicated to first-rate undergraduate education” (Brandeis College 2023). Common careers are in business development, education, research, health care and engineering. Of the

TABLE 6 ► Business Maturity of Five Schools in New England

College	U.S. News Ranking (Top x%)	Endowment ¹ (Tier)	Year Founded ²	Student to Faculty Ratio	Acceptance Rate (%)	Graduation Rate (%)	Average Post-Graduation Income (\$)
A	1	1st	1860	5:1	4	95	124,000
B	5	2nd	1800	9:1	13	91	69,000
C	10	2nd	1945	10:1	34	87	74,000
D	65	4th	1815	16:1	85	55	57,000
E	83	5th	1930	14:1	78	42	36,000

¹ Tier endowment ranges:
1st: > \$6B; **2nd:** > \$500M–6B; **3rd:** > \$100–500M; **4th:** \$30–100M; **5th:** < \$30M

² Earliest year founded among schools in the specified ranking

TABLE 7 ► Digital Maturity Applied to Selected Colleges

College	Ranking (%)	Backlinks	Linking Websites	Referring Domains	Domain Rating	Keywords
A	1	201M	562,000	747,600	92	1,200,000
B	5	3.1M	27,000	44,600	79	108,000
C	10	2.8M	36,000	53,300	82	209,000
D	65	25,000	2,400	4,000	57	2,100
E	83	13,000	1,400	2,200	48	2,200

Data Sources: ahrefs.com and moz.com

77 schools examined, this school ranked #2 domain rating, #3 referring domains, and #4 backlinks.

■ **College D:** A private business college, self-described as a college that “transforms today’s students into tomorrow’s leaders through a dynamic, career-focused business and professional education” (Nichols College 2023). (The school is known for a strong alumni network in the business fields of insurance, accounting, and finance.

■ **College E:** An undergraduate college with strong living and learning support programs. Self-described as *individualized* and *accessible*, the school provides a distinctive education, “teaching the way you learn” (Mitchell College 2023). Common careers are in education, finance, medical, retail, sports, and fitness.

Using the five colleges selected as the case studies for this research, Table 7 shows the elements of their digital maturity.

Analyzing impact of digital maturity beyond enrollment impacts, could be potential for future research. Future research could involve using the current research as basis and studying the digital maturity elements listed in Table 7 and to understand the impact of digital maturity on college rankings. This expanded research would provide administrators further understanding of digital maturity and its impact beyond enrollment.

Discussion

Digital transformation is essential to organizational success across industries (Schwertner 2017). Digital mature organizations have open, agile cultures that use data and technology to achieve greater efficiency and effective-

ness (Catlin, Scanlan, and Willmott 2015). While higher education institutions have been slower to adopt digital transformation, there is an increased awareness of the need for transformation, especially in marketing (Rodríguez-Abitia and Bribiesca-Correa 2021). This study attempts to understand how digital maturity in marketing impacts enrollment. The next section outlines the theoretical and practical implications of this research.

The results of this study demonstrated a relationship between a college’s digital maturity and enrollment. As noted above, the independent variables related to digital maturity explained 43 percent of the variability in enrollment, and greater than 75 percent of the variability in college recognition. This result suggests digital maturity is an important factor in achieving enrollment goals, one that must be integrated with other non-digital elements such as attractive facilities, quality faculty, clubs and social events, and competitive sports programs.

It is evident from the website data that top tier colleges (*e.g.*, College A in the sample above) are significantly differentiated from lower tiers, especially regarding digital maturity. In this study, the digital maturity elements of College A are many multiples greater than the similar elements of College D and E. In reference to *referring domains*, College A has 187 times as many references as College D, and a factor of 8,040x regarding *backlinks*. In short, there is an enormous digital divide between these colleges in respect to their digital presence. These findings enforce the research’s findings, that digital maturity is indeed a significant part of the college profile.

It is important for college leaders and administrators to understand the criticality of digital maturity in

comparison to non-digital elements as well. At many schools, investment to operate and maintain a robust digital infrastructure is underfunded, representing a relatively small portion of the organization's strategic plan in comparison to payments for employee salaries, infrastructure, and facility operations. In fact, there is wide variation in attitudes among stakeholders toward digital investments (Webber, *et al.* 2022). This should not be the case. Investing in digital maturity will contribute to the relevance and financial health of the organization.

Digital maturity is a team effort, and all college stakeholders must be involved in the process. While adequate funding is important (administrators should ensure that budget lines support digital relevancy), improvement is not tied solely to increased spending. In fact, stakeholder engagement is the key force multiplier, producing a compounding effect that accelerates digital maturity. Marketing and admissions teams can upskill to create sophisticated SEO content and paid online marketing promotions. Faculty can use their talents to create online content such as blogs and articles on the college website to improve the search engine ranking. Athletic directors and coaches can brag about their athletes and write about their victories and championships. Students can and should be part of this process too, contributing to the blogs and social media presence of their alma mater.

In extension of the research of Scott and Bruce (1987) and Berghaus and Back (2016), this study identified five stages of digital maturity, specific to the maturation of a college website. This model is called the *five stages of a college's digital growth*. These stages range from *infancy* to *sagehood*, and each level has unique characteristics, advantages, and challenges (*see* Table 8, on page 17). Understanding each phase will help college administrators develop strategies targeted to each level, designed to maximize the advancement of their digital relevancy.

As summarized in Table 8, following are the details on each of the stages of Singh and Samborowski's five stages of a college's digital growth model:

- **Stage 1—Infancy:** Defined as the start of a college's digital journey. In this stage, the college develops the website. This includes designing of the various pages, creating relevant content, and identifying the best call to action for the target audience of the website.
- **Stage 2—Childhood:** Creation of a digital presence through social media. In this stage, the college creates profiles on the most relevant social media channels. The college also creates an internal process through which updates are made to the appropriate social media channels. This process is used to create ongoing new content (*e.g.*, blogs, new pages) posted to the website. The key point is content creation that is frequently populated to the website and social media channels.
- **Stage 3—Tweenhood:** After the various digital channels (social media, websites) are developed by the college, the third stage is focused on search engine optimization. In this stage the college pursues both paid advertisements and organic search optimization strategies. These two strategies work in tandem and reinforce each other (*e.g.*, appropriate keywords are reused between paid advertisements and organic search). Additionally, the college creates appropriate roles and skills within its workforce, to actively manage search engine optimization. The college has identified its digital personality is alignment with its offline mission and values.
- **Stage 4—Adulthood:** The college makes concurrent progress at various fronts of digital maturity, especially regarding search engine optimization. In addition to paid ads and organic keywords, the college actively procures backlinks for new content. The college also makes sure all digital assets have a clean user experience, the content is easy to understand, and well-developed processes support any call to action from the digital experiences. The college's digital personality is enhanced by online imagery and stylistic elements that further brand the school, creating a competitive advantage, a unique distinction between the school and all others.
- **Stage 5—Sagehood:** All elements of digital maturity work flawlessly in tandem. College A of this study is an example of a sagehood website. College A creates and updates content frequently. A new image

is provided daily to focus the attention of the website visitor. Additionally, an invitation to explore the people and locations of College A is updated every six seconds (College A, A3). This sagehood site enjoys a constant addition of backlinks; its digital channels leverage contents across social media platforms; and keywords are constantly refreshed and revised. Importantly, all offline processes that support call to action are appropriately staffed and funded for the maintenance and improvement of the college's digital experience. The college's digital personality is respected by other educational institutions and becomes a benchmark for success. The college becomes an aspirational level of achievement for other schools.

Limitations of Current Research and Topics for Future Research

This research has the following limitations that also provide opportunities for future research:

- **Limited Sample Size and Generalizability:** This research used a relatively small data set for colleges in New England with undergraduate enrollment of less than 5000. Further research can be developed to understand digital maturity impact on college enrollment for colleges across United States and beyond of all sizes. Additional research can also be developed to understand the impact of digital maturity after students have enrolled (*e.g.*, delivery of degrees and certifications, online interactions during courses, etc.).

TABLE 8 ► Five Stages of a College's Digital Growth Model

Stage	Key Elements
1 Infancy	► Website creation and launch
2 Childhood	► Social media linked to website and website to social media. ► Website includes blogs and periodic contributions
3 Tweenhood	► Paid advertisements, websites and social media channels include keywords used in paid advertisements. ► Balances paid ads and organic search strategy. ► Digital personality identified.
4 Adulthood	► Search engine optimization achieved and maintained. ► Outreach to other institutions regarding backlinking of content and pages. Concurrent progress made on multiple elements of digital maturity. ► Digital personality further enhancement through digital imagers and stylistic content.
5 Sagehood	► Greater than a decade of social media engagement. ► Website consistently ranked in top 20. ► Input from all stakeholders. ► Ongoing updates of digital channels. ► Ability for all stakeholders to update directly. ► Other institutions add "Sagehood" content to their websites. ► Digital Personality is respected and viewed as a benchmark of success. An aspirational school.

- **Factors Beyond Enrollment:** This research primarily studies the impact of digital maturity on enrollment. Future research could include studying impact of digital maturity on items such as college rankings.

This paper is intended to provide a starting point for colleges to assess their current state of digital maturity using the Singh and Samborowski digital maturity model. Further research can be developed on various strategies that colleges can employ to move from one stage to another, and even jump a stage.

Further research is also needed to understand the impact and opportunity of artificial intelligence on digital maturity. This research could include the self-generation of content and keywords for various digital properties of a college. Further research can highlight college specific strategies on how to deploy artificial intelligence for college marketing.

References

- Aslanova, I. V., and A. I. Kulichkina. 2020. Digital maturity: Definition and model. *Advances in Economics, Business and Management Research*. 138: 443–449. Retrieved from: <doi.org/10.2991/aebmr.k.200502.073>.
- Bahr, N. 2018. *#Effyourbeautystandards: Message Construction in the Body Positivity Movement on Instagram* (thesis). University of Alaska Fairbanks, Fairbanks, Alaska.
- Baum, S., C. Kurose, and M. McPherson. 2013. An overview of American higher education. *The Future of Children*. 23(1): 17–39. Available at: <[jstor.org/stable/23409487](https://www.jstor.org/stable/23409487)>.
- Berghaus, S., and A. Back. 2016. *Stages in Digital Business Transformation: Results of an Empirical Maturity Study*. Tenth Mediterranean Conference on Information Systems, Paphos, Cyprus.
- Bhagwati, D., and D. M. Dutta. 2018. A study on literature review for identifying the factors impacting digital marketing. *International Journal of Sales & Marketing Management Research and Development*. 8(3): 1–8.
- Bloching, B., G. Remane, P. Leutiger, P. Quick, T. Oltmanss, C. Rosback, T. Schlick, and O. Shafranyuk. 2007. The digital transformation of industry. *Roland Berger Strategy Consultants GMBH*. 2(5): 4.
- Brandeis College. 2023. *About*. Waltham, MA: Author. Available at: <brandeis.edu/about/>.
- Catlin, T., J. Scanlan, and P. Willmott. 2015. Raising your digital quotient. *McKinsey Quarterly*. 3: 30–43.
- Colli, M., O. Madsen, U. Berger, C. Møller, B. Vejrum Wæhrens, and M. Bockholt. 2018. Contextualizing the outcome of a maturity assessment for industry 4.0. *IFAC-PapersOnLine*. 51(11): 1347–1352. Available at: <doi.org/10.1016/j.ifacol.2018.08.343>.
- Constantinides, E., and M. C. Zinck Stagno. 2012. Higher education marketing. *International Journal of Technology and Educational Marketing*. 2(1): 41–58. Available at: <doi.org/10.4018/ijtem.2012010104>.
- Delaney, J. A., T. M. Trinh, and T. K Odle. 2023. Direct admissions: Policies and principles. *College and University*. 98(3): 75–81.
- Higher Ed Dive. 2023. A look at trends in college consolidation since 2016. Retrieved from: <[higherdiver.com/news/how-many-colleges-and-universities-have-closed-since-2016/539379/](https://highereddiver.com/news/how-many-colleges-and-universities-have-closed-since-2016/539379/)>.
- Frasier, K., A. Reschly, and J. Appleton. 2020. Predicting postsecondary enrollment with secondary student engagement data. *Journal of Psychoeducational Assessment*. 38(7): 882–899. Retrieved from: <doi.org/10.1177/0734282920903168>.
- Gill, M., and S. VanBoskirk. 2016. *The Digital Maturity Model 4.0*. Cambridge, MA: Forrester.
- Grawe, N. 2018. *Demographics and the Demand for Higher Education*. Baltimore, MD: Johns Hopkins University Press.
- Hayes, T. J., D. Ruschman, and M. M. Walker. 2009. Social networking as an admission tool: A case study in success. *Journal of Marketing for Higher Education*. 19(2): 109–124. Available at: <doi.org/10.1080/08841240903423042>.
- Head, J., C. Tremblay, K. Buster-Williams, and P. Tanner. 2022. SEM endorsement program: Ten years of growing enrollment management competency. *College and University*. 97(1): 35–42.
- Hinojosa, M., P. Luf, and P. J. Woolston. 2023. Managing enrollment strategically both formally and informally. *Strategic Enrollment Management Quarterly*. 11(1): 19–28.
- Kelleher, T., and K. Sweetser. 2012. Social media adoption among university communicators. *Journal of Public Relations Research*. 24(2): 105–122. Retrieved from: <doi.org/10.1080/1062726X.2012.626130>.
- Kusumawati, A. 2019. Student choice process of higher education institutions through university digital marketing resources. In *Proceedings of the 6th International Conference on Marketing*, Vol. 5. Retrieved from: <doi.org/10.17501/23572655.2018.5101>.
- Leonardi, P., and T. Neeley. 2022. *Developing a digital mindset*. Cambridge, MA: Harvard Business Review. June: 50–56. Available at: <web.p.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=0&sid=4a4a292f-05df-4260-ab7d-8ad7ce8c34f0%40redis>.
- Massachusetts Institute of Technology. 2023. *About MIT*. Cambridge, MA: Author. Available at: <mit.edu/about/>.
- McCusker, C., and D. Babington. 2018. *The 2018 Digital University Staying Relevant in the Digital Age*. London, U.K.: PricewaterhouseCoopers LLP. Available at: <[pwc.co.uk/publicsector](https://www.pwc.co.uk/publicsector)>.
- Meyer, K. 2023. *The Case for College: Promising Solutions to Reverse College Enrollment Declines*. Washington, D.C.: Brookings.
- Middlebury College. 2023. *About Middlebury*. Middlebury, VT: Author. Available at: <middlebury.edu/about>.
- MIT. See Massachusetts Institute of Technology.
- Mitchell College. 2023. *About Mitchell College*. New London, CT: Author. 2023. Available at: <mitchell.edu/a-distinctive-education/>.
- Nichols College. 2023. *Nichols College at a Glance*. Dudley, MA: Author. Available at: <nichols.edu/about/nichols-at-a-glance/>.
- Ortiz-Ospina, E. 2019. *The Rise of Social Media. Our World in Data*. September 18. Retrieved from: <ourworldindata.org/rise-of-social-media>.
- Peruta, A., and A. B. Shields. 2018. Marketing your university on social media: A content analysis of Facebook post types and formats. *Journal of Marketing for Higher Education*. 28(2): 175–191. Available at: <doi.org/10.1080/08841241.2018.1442896>.
- Rodríguez-Abitia, G., and G. Bribiesca-Correa. 2021. Assessing digital transformation in universities. *Future Internet*. 13(2): 1–17. Available at: <doi.org/10.3390/fi13020052>.
- Schwertner, K. 2017. Digital transformation of business. *Trakia Journal of Science*. 15(Suppl.1): 388–393. Available at: <doi.org/10.15547/tjs.2017.s.01.065>.

- Scott, M., and R. Bruce. 1987. Five stages of growth in small business. *Long Range Planning*. 20(3): 45–52. Available at: <[doi.org/10.1016/0024-6301\(87\)90071-9](https://doi.org/10.1016/0024-6301(87)90071-9)>.
- Starcevic, S., and S. Konjikusic. 2018. Why millennials as digital travelers transformed marketing strategy. In *International Thematic Monograph Tourism in Function of Development of the Republic of Serbia—Tourism in the Era of Digital Transformation*. Available at: <researchgate.net/publication/328791775_why_millennials_as_digital_travelers_transformed_marketing_strategy_in_tourism_industry>.
- Taylor, Z., and J. Childs. 2022. Create engaging 'digital swag' to connect with and yield prospective students. *Enrollment Management Report*. 26(1): 4–9. Available at: <doi.org/10.1002/emt.30906>.
- Teichert, R. 2019. Digital transformation maturity: A systematic review of literature. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*. 67(6): 1673–1687. Available at: <doi.org/10.1118/actaun201967061673>.
- Webber, D. J., E. Hughes, G. Pacheco, and G. Parry. 2022. Investment in digital infrastructure: Why and for whom? *Region*. 9(1): 147–163. Available at: <doi.org/10.18335/region.v9i1.415>.
- Westerman, G., D. Bonnet, and A. McFee. 2014. *Leading Digital: Turning Technology into Business Transformation*. Cambridge, MA: Harvard Business Review Press.
- Zou, G. 2004. A modified Poisson regression approach to prospective studies with binary data. *American Journal of Epidemiology*. 159(7): 702–706. Available at: <doi.org/10.1093/aje/kwh090>.

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