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ABSTRACT

The demand for graduates with coursework in business/data analytics continues to grow, and many career rankings list these skills among the top in demand by industry. This study examines trends in how Information Systems (IS) academic departments have adapted to this demand by incorporating business analytics in their departmental naming conventions, majors, minors, concentrations, and course curriculum. Based on sample data of 127 AACSB-accredited schools, only one school (<1%) in 2011 included analytics in its department name. By 2018, this number grew to 8% and then to 13% in 2020. Further, in 2018, 28% of our sample offered majors or concentrations in analytics. Just two years later, this number had risen to 61%. This research provides benchmarking guidance to IS faculty and administrators who are considering a shift to incorporate analytics into their degree offerings.

Keywords: Data analytics, Business analytics, IS programs, IS curriculum, Academic rebranding, Transformation

1. INTRODUCTION

Ten years ago, most working professionals and academic administrators were just beginning to understand the full impact that data/business analytics and data science would have on business (Breslin, 2016; Glassdoor, 2021). Fast-forward a few years, "data science careers are experiencing a gold rush moment" (Oostendorp, 2019). Job ranking sites frequently list data science as the number one career path (Glassdoor, 2021). Demand for college graduates in the areas of business analytics

and data science is soaring, with salaries and signing bonuses skyrocketing (Columbus, 2015). "Data Scientist" is listed as one of the top jobs for management information systems degree majors (Explorer, 2019). Reacting to this explosion of data science across all industries, universities have recently debuted data analytics undergraduate programs (majors, minors, concentrations) and shifted curricula to meet industry needs (Tate, 2017).

In response to the extraordinary growth of analytics, IS faculty and administrators are determining how to incorporate new curriculum in these areas and what, if any, departmental rebranding is needed to better reflect the curriculum that is offered. Model curriculum guidelines have provided recommendations for designing IS-related programs; however, the most recent IS 2010 Model Curriculum was developed years ago and does not address big data, data visualization, and data science (Topi et al., 2010). Moreover, the Association to Advance Collegiate Schools of Business (AACSB) guidelines mention data analytics only briefly as part of the technology agility competency (AACSB International, 2013). This is expected to change when these organizations issue updated recommendations. An exploratory task force recommendation for IS 2020 suggests that "big data and data science provide the foundation for an analytics perspective in IS, consisting of computational methods and technologies to perform quantitative and text-based semantic analyses to support evidence-based decision-making" (de Vreede et al., 2019, p. 8).

In 2011, a panel report at the International Conference on Information Systems (ICIS) recommended that IS departments incorporate business analytics into their programs (Gefen et al., 2011). At that time, names of departments housing computer-related programs in AACSB-accredited institutions were primarily limited to *management information systems*, *information systems*, and *computer information systems*, with less than one percent of AACSB IS programs including analytics in their department name (Bell et al., 2013; Pierson et al., 2008). Although anecdotal evidence suggests universities are increasingly offering programs in business analytics, no studies provide insight into the actual movement toward analytics within IS programs in AACSB business schools between 2011, the date of the ICIS panel report, and 2020 (Labbe, 2018; Mills et al., 2016). Documenting this evolution provides insight into the responsiveness of IS degree programs to the needs of organizations who hire their graduates.

The purpose of this research is to examine IS programs and curriculum changes related to data and data analytics between 2011 and 2020. We aim to explore how IS program curricula have shifted toward analytics, how department naming conventions have changed, and how analytics curriculum offerings relate to various aspects of IS degree programs.

2. BACKGROUND AND RESEARCH QUESTIONS

2.1 Program Rebranding

Academic departments today are based on the late 19th century implementation of a German model developed to establish boundaries, identity, and community related to research and teaching within a cohesive unit (Edwards, 1999). Departments establish both a bureaucratic structure and programmatic (curricular) structure in an effort to create an environment conducive to effective teaching and learning (Winteler, 1981). Academic departments serve as an organizing framework to

both internal and external stakeholders and "signal continuity or change over time in intellectual jurisdictions" (Gumport & Snydman, 2002, p. 377).

The intellectual domain covered by an academic department is conveyed most clearly and immediately by its name. Names are important as they serve as a primary vehicle for communicating an organization's brand, which encompasses "a person's perception of a product, service, experience, or organization" (Lloyd, 2017, p. 1). The far-reaching consequences of naming choices in organizations of all types and sizes is well established by a vast array of marketing research. For example, in the years following the widespread availability of Internet browsers, companies that added ".com" to their names experienced significant increases in stock prices and trading volumes that could not be explained by other factors (Lee, 2001). Mutual funds that changed their names to take advantage of trending investment styles experienced an otherwise unexplained 28% increase in flows to the funds a year after making the change (Cooper et al., 2005). On the other hand, poorly chosen names can lead to product failures, as "Bad names bring the wrong associations to consumers' minds" (Surowiecki, 2016, p. 35). In 1955, after considering over six thousand names, Ford made the decision to name a new car Edsel, which is now a term widely associated with failure given how dramatically Ford misread a new auto for the middle class. "Done incorrectly, rebranding can cost you not only the customers you're hoping to reach, but a segment of established clients as well" (Forbes Communications Council, 2018, p. 1).

Periodic changes in external market forces, customer perceptions, or internal strategy can prompt organizations to consider name changes. Name changes are not uncommon in academic departments, particularly those in professional fields (Gumport & Snydman, 2002), which may contemplate name changes due to shifting demand from a variety of stakeholders (i.e., students, faculty, alumni) (Frazier & Wikle, 2017). Departments may change their name to "adapt more readily to changes in the external environment, such as advances in information technology and changes in career opportunities" (Gumport & Snydman, 2002, p. 394). Name changes often occur concurrently with a larger effort to strategically position the department along the lines of a new strategy, a new product offering, or an organizational restructuring. For example, in their study of name changes related to health education academic programs over the past 35 years, Alber et al. (2013) found that primary reasons for the changes included departmental mergers, a movement toward broadening the field, an appeal to working professionals, and a strategic move to phase out the term 'education' (i.e., physical education) to avoid negative or narrow connotations. Similarly, Frazier and Wikle (2017) studied over 30 instances of renaming and rebranding of U.S. and Canadian geography departments from 1990-2014. The motivations for renaming the departments are provided in Table 1, with enhancing on-campus standing and undergraduate recruiting accounting for 81% of the total motivation for change. While some of the renaming initiatives were based on alignments with other disciplines, others were driven by emerging research and teaching emphases (Winkler, 2014). Moreover, the rate of name changes doubled from 2010-2014 when compared to 1990-2000 or 2000-2010 (Frazier & Wikle, 2017).

Motivation for Renaming	Percentage
Enhance on-campus standing	43%
Attract more undergraduate majors	38%
Merge with another department or program	30%
Address faculty changing interests	23%
Enhance employment opportunities	15%
Enhance off-campus prestige	12%
Attract more graduate students	8%
Assist in recruiting new faculty	3%

Table 1. Motivations for Renaming Geography Departments (Frazier & Wikle, 2017)

In the IS domain, the burgeoning demand for data analytics skills may prompt IS departments to undertake a rebranding of their departments and programs to more clearly signal these skills to both students and external stakeholders. However, name changes in academic units, majors, minors, and concentrations are not without challenges. The organizational inertia associated with many higher education institutions can make name changes procedurally difficult. Moreover, to be effective, these changes must be accompanied by concomitant changes in associated coursework, which must be considered carefully to avoid "challenges for professionals, employers, and certifications boards to recognize these courses and majors" (Alber et al., 2013, p. 291). Nevertheless, the opportunities afforded by the growing demand for analytics means that IS departments may find strategic value in rebranding themselves to reference data analytics in their name.

2.2 Model Curricula
Model curricula have been published to develop standardization among IS programs and provide guidance on the best set of courses to offer in IS majors/concentrations. Since 1997, the IS discipline has published model curricula to assist IS program design; however, 2010 is the last year a model curriculum (IS 2010) was published for the IS discipline (Topi et al., 2010). A taskforce on the IS Model Curriculum (IS2020) was recently created and emphasized "the IS discipline must express its core in terms of a standard curriculum to provide a foundation upon which to develop and offer undergraduate IS programs that meet stakeholder demand" (Leidig et al., 2020, p. 803).

Since the publication of the 2010 IS Model Curriculum, demand for data and analytics has soared. With *Harvard*

Business Review declaring data scientist as the sexiest job in the 21st century (Davenport & Patil, 2012), it is not surprising that IS departments began adapting their curricula to prepare students for the changing job market. This shift has been marked by a dramatic increase in analytics-focused course offerings from AACSB-accredited schools between 2011 and 2016, including courses in business intelligence (236%), visualization (300%), and big data analytics (583%) (Mills et al., 2016).

Table 2 highlights how specific data-related components included in IS model curricula have changed from 1995 to 2011 (Couger et al., 1995; Davis et al., 1996; Gefen et al., 2011; Gorgone et al., 2003; Gorgone et al., 2006; Hunt, 2004; Kesner, 2008; Topi et al., 2010; de Vreede et al., 2019). To construct this table, we examined nine different curriculum guidelines and searched for the key terms of *analytics*, *big data*, *business intelligence*, *data visualization*, and *data science*. Results show that many of these topics have only recently been incorporated into curriculum models, with *business intelligence* appearing in 2006 (Gorgone et al., 2006), *analytics* in 2010 (Topi et al., 2010), and *big data*, *data visualization*, and *data science* featuring only in the newly created IS 2020 recommendations (de Vreede et al., 2019).

Without specific recommendations for data and analytics, IS departments have been left to forge ahead largely on their own in designing and deploying curriculum to meet the ever-increasing industry demand for these skills. Developing a new major/concentration is a difficult task, and lack of a model curriculum exacerbates this challenge. Although many IS programs now offer a major or concentration in analytics, no studies have yet attempted to measure the extent of these offerings and accompanying program changes.

In this study, we examine the extent to which IS programs in the U.S. have incorporated business analytics between 2011, when the ICIS panel recommendation was issued, and 2020. Using a cross-sectional dataset of 127 AACSB-accredited universities with data collected in 2011, 2018, and 2020, we examine how IS programs have adapted in three specific ways, namely: (a) program/department rebranding, (b) new undergraduate majors or concentrations, and (c) new course offerings. Additionally, we also examine analytics offerings outside of the IS area.

Curriculum Guideline	Analytics	Big Data	Business Intelligence	Data Visualization	Data Science
IS 2020	✓	✓	✓	✓	✓
ICIS Panel Report 2011	✓	✗	✓	✗	✗
IS 2010	✓	✗	✓	✗	✗
IS Competencies 2008	✗	✗	✓	✗	✗
MSIS 2006	✗	✗	✓	✗	✗
OSRA 2004	✗	✗	✗	✗	✗
IS 2002	✗	✗	✗	✗	✗
IS 1997	✗	✗	✗	✗	✗
IS 1995	✗	✗	✗	✗	✗

✓ = Included; ✗ = Not Included

Table 2. Model Curriculum Changes over Time

3. METHOD

3.1 Research Design
This study gathered evidence from IS departments in AACSB-accredited business schools in the United States to examine departmental trends related to business analytics using a descriptive longitudinal, quantitative design. We used 2011 as a starting point for our examination which represented the ICIS Panel report that indicated future needs to address business analytics in future curriculum discussions (Gefen et al., 2011). We also collected data in 2018 and 2020, years when the IS 2020 recommendations were being discussed and formulated (de Vreede et al., 2019). A descriptive longitudinal design was chosen because it enables an accurate and systematic description of educational phenomena using repeated data gathering points (i.e., repeated measures) to document stability, change, or trends over time (Kung et al., 2006; Mills et al., 2016).

3.2 Sampling Procedure
The population for our investigation included approximately 286 undergraduate IS programs at AACSB-accredited institutions across the United States (AACSB, 2011). Our sample was determined using Yamane's formula with an alpha of 0.05, which yielded a minimum representative sample size of 74 academic programs for this population (Yamane, 1967). We exceeded this minimum and randomly selected 127 programs for inclusion. The sample was drawn from the accessible population of colleges/universities that had public websites and departments devoted to the academic discipline of Information Systems (Bell et al., 2013; Mills et al., 2016).

3.3 Data Collection
To measure developmental trends over time, longitudinal data were collected from each of the 127 department websites by a trained research associate during the fall (September through December) of 2011, 2018, and 2020. Data were collected directly from department websites since, in most cases, the public data available to program constituents should closely align with the actual department name and academic program offerings, including majors, minors, concentrations, and specializations. In a few cases, data were also collected from university catalogs, curriculum documents, university press releases, and phone calls. These alternative searches were used to clarify conflicting data from a department website. The original longitudinal study design framework featured a collection period timeline with data collection occurring at seven-year intervals, with data initially collected in 2011 and again in 2018. However, an interstitial data collection was conducted in fall 2020 to capture the recent explosion of data analytics in industry and consequentially higher education programs.

4. RESULTS

4.1 Program Rebranding
We first assessed the extent to which IS programs rebranded their departmental name to include analytics and what names were chosen from 2011 to 2020, using 2018 as a waypoint. We tabulated the number of IS departments that changed their name to incorporate some reference to analytics since 2011. In 2011, only one program (<1%) among our sample (n = 127) included

analytics in its department name (Creighton University). By 2018, nine programs included analytics in their department name (8%). Between 2019 and 2020, an additional eight programs changed their department name, for a total of 17 departments (13%) whose names include a reference to analytics. In addition, we also identified one business school that changed its *college* name to include analytics, changing from the *College of Business* to the *College of Business and Analytics* (Southern Illinois University Carbondale). Tables 3 and 4 indicate the original and new names between 2011 and 2018, and between 2019 and 2020, respectively.

2011 Name	2018 Name
Information Systems	Operations, Business Analytics, and Information Systems
Decision Sciences & Management Information Systems	Information Systems and Analytics
Information Technology	Information Systems and Business Analytics
Information Systems and Technology	IT and Analytics
Computer Information Systems	Business Analytics and Information Systems
Management Information Systems	MIS and Data Analytics
Business Informatics	Business Analytics
Computer Information Systems	IS & Analytics
Business Intelligence and Analytics*	Business Intelligence and Analytics*

*Program included Analytics in both 2011 and 2018.

Table 3. Changed IS Department Names, 2011-2018

2018 Name	2020 Name
Business Computer Information Systems	Business Analytics & Information Systems
Management Information Systems	Data Analytics & Information Systems
Management Science	Information Systems & Analytics
Supply Chain and Information Systems	Information Systems & Business Analytics Department
Business Information Systems	Business Information Systems & Analytics
Computer Information Systems	Accounting, Business Analytics, CIS & Law
Management Information Systems	Information Systems & Business Analytics
Information Technology	Business Information Systems & Analytics

Table 4. Changed IS Department Names, 2019-2020

4.2 Undergraduate Majors/Concentrations
Our second question concerned the extent to which undergraduate majors or concentrations in data analytics been added to IS programs from 2011-2020. To address this, we tabulated the number and percentage of IS programs in our sample that offer a major or minor/concentration in data/business analytics. To be counted in this category, the program had to include a major, concentration, emphasis, or specialization that included the term "analytics." Out of our sample of 127 IS programs, 36 (28.3%) had moved to offer a major or concentration in data analytics in 2018 compared to only one in 2011 (<1%). At the time of the most recent data collection in 2020, 78 (61.4%) of IS programs were offering majors/concentrations in analytics (see Figure 1). Figure 2 indicates names of majors and minors/concentrations offered with the analytics nomenclature between 2011 and 2020. Among these programs, approximately 55% were new majors and 45% represented new minors, specializations, or certificates.

4.3 Course Offerings
We next examined the most common course offerings among newly created majors and minors/concentrations in analytics. To do this, we focused on the 78 programs that had added a major or minor in analytics by 2020. Specifically, we randomly selected 41 of the 78 business analytics majors and minors/concentrations and tabulated the most common courses offered in each type of program. If one of the 41 programs did not have a specific curriculum identified or determined, it was replaced with another random program until 41 programs with identified curriculum were located. Minor variations in course titles were consolidated where possible (e.g., Database Systems, Principles of Database, Database Design & Administration). Table 5 reports the most common courses offered in analytics majors programs, and Table 6 reports the most common courses in analytics minor/concentration programs. Topping the list for both types of programs are courses in database systems, data mining, business intelligence, and business analytics.
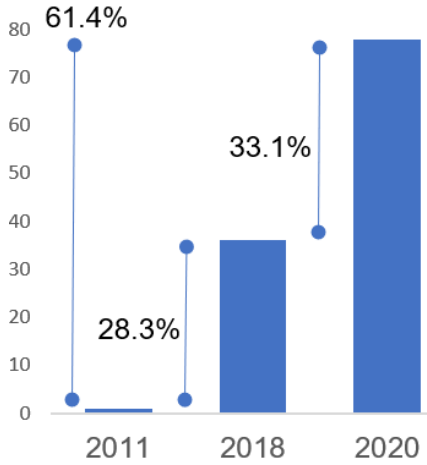

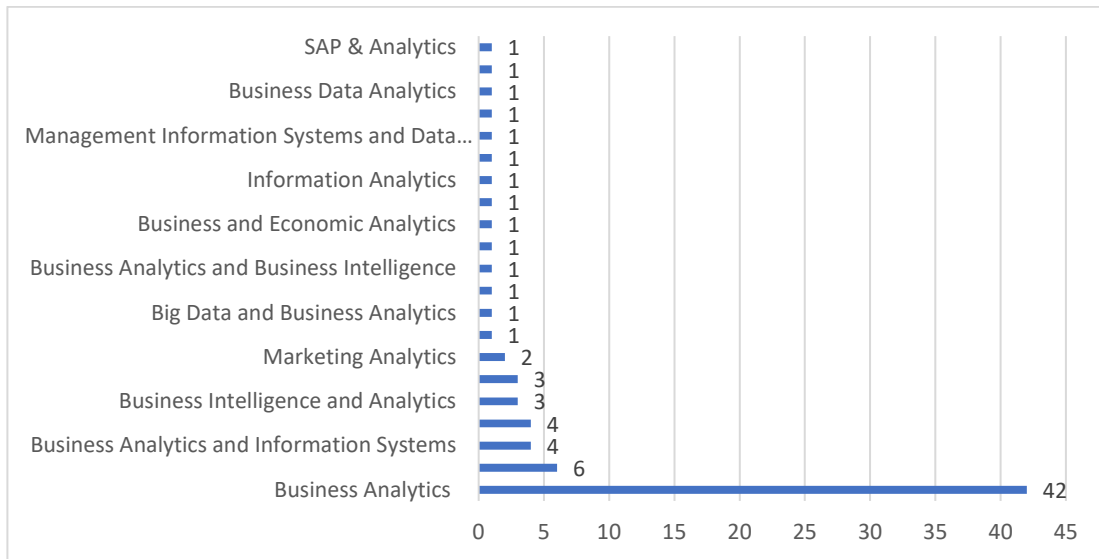**Figure 1. Variance of IS Programs Offering Analytics Major, Minor, or Certificate**

Figure 2. Name Distribution of Analytics Majors and Minors/Concentrations from 2011-2020

Course Name	Frequency
Database Systems	*15*
Data Mining	*10*
Business Analytics	*9*
Data Visualization	*7*
Programming for Analytics (Python)	*7*
Business Intelligence	*7*
Systems Analysis & Design	5
Business Analytics with Excel	4
Predictive Analytics	3
Data Communications	3
Ethics of Analytics	3
Business Stats 2	3

Table 5. Most Common Course Names Among Programs Offering Analytics Majors (Top Six Courses Italicized)

Course Name	Frequency
Database Systems	*16*
Business Intelligence	*11*
Data Mining	*10*
Business Analytics	*8*
Analytics Programming (Python)	*6*
Data Visualization	*6*
Business Analytics with Excel	6
Data Analysis for Business	4
Principles of Stats	4
Principles of Stats 2	3
Machine Learning	3

Table 6. Most Common Course Names Among Programs Offering Analytics Minors/Concentrations (Top Six Courses Italicized)

4.4 Analytics Offerings Outside IS

Our final question concerned what programs outside of IS offered an undergraduate major, minor, or concentration in data analytics or a related field in 2020. To answer this research question, we examined 49 of the 127 universities in our 2020 sample where we were unable to locate analytics programs within IS departments. This purposeful sample was to understand analytics-related coverage offerings better when coverage was not provided in IS departments. Table 7 provides an overview of our findings, including both the program names as well as associated colleges/departments.

Program	College/Department
Data Analytics & Computation	Computer Science
CIS Analytics	Math
Data Science	Liberal Arts & Sciences
Data Science and Big Data Analytics	Statistics
Business Analytics	Arts & Science, Engineering, Medicine, Public Health, Business
Cybersecurity Analytics & Operations	Information Sciences & Technology
Data Science	College of Natural Resources
Applied Statistics & Data Science	Public Health & Information Sciences
Data Science	Statistics
Data Science	Statistics
Data Science	Computer Science
Data Analytics	CS & Math
Data Science	Engineering
Data Science	Statistics & CS
Data Analytics	Engineering
Data Analytics	Continuing Education
Applied Data Analytics	Online Certificate (Adult Learning)
Data Analytics	Accounting
Big Data & Data Analytics	Continuing Ed
Data Science	Computer Science
Data Analytics	Mechanical Engineering
Computational Modeling and Data Analytics	Stats, Math, CS, Physics
Data Analytics	Executive Education
Data Science	Liberal Arts & Science
Data Science	School of Computing
Cybersecurity Analytics & Operations	Business Administration
Business Analytics & Statistics	Statistics
Applied Statistics & Data Analytics	Statistics

Table 7. Other Related Analytics Programs

5. DISCUSSION

This study offers an empirical window into the dramatic transformation of AACSB-accredited IS programs to incorporate analytics into their programs. Three concurrent sets of changes – department naming conventions, new analytics-related majors/concentrations, and analytics curriculum offerings – show that 2011-2020 was transformative in IS programs. Departmental name changes, majors, minors, and concentrations have occurred in about 61% of all IS programs and are indicative of this profound change. Departments do not appear to be coalescing around a common new name, other than to include "analytics" somewhere in the name. The rate of

change is accelerating, with eight departments changing their names to include "analytics" in 2019 and 2020. This shift is especially noteworthy because of the lengthy review and approval process typically required for departments to change their names. We did identify a few departments that have changed their names without having an associated major or minor, but this may be a matter of timing. It may take even longer to add majors to a program, and we anticipate that future research will confirm new degrees to go along with the addition of analytics to department names.

Our findings offer several implications for IS education. IS departments appear to be more responsive to market needs and job opportunities for their students rather than choosing to adhere to former model curriculum guidelines. During periodic AACSB reviews, departments are asked to describe their curriculum and explain the rationale behind their curricular choices. Rather than pointing to model curriculum guidelines, which a majority of departments have traditionally done, it appears that many departments now reference what recruiters and perhaps department advisory board members recommend, which emphasizes job opportunities for students with skills in analytics. Responding in this way is certainly in line with a codicil that is part of the 2010 guidelines, which is that departments should emphasize the specific needs of their student population and important constituents, such as employers, in making final decisions about the content of their curriculum.

As former IS departments make the change to include analytics in their curricula and departmental names, it is also instructive to consider rebranding efforts. There is a constant competition for students in majors and concentrations, and using departmental and concentration names that reflect what students see in the news or hear from recruiters is a way to rebrand and attract students to programs of study. Interestingly, it may be easier for students to believe they have a basic understanding of what analytics is than it is to understand the traditionally challenging-to-answer question, "What is MIS or IS?" Is it easier for departments to marshal resources when the name of the department and/or major is something that can be explained in a more straightforward manner? Future research could also consider whether this evolution is deliberate, planned and intentionally constructed, or emergent. Mintzberg (1978) argued that strategy need not be deliberate but may emerge from discrete choices made by organizational actors over time.

There are several factors which may affect the creation of new analytics programs which we do not consider in this research. In recent years, accounting firms have expressed a heightened need for data analytics skills in their applicants. Business Analytics is changing the way auditors approach their profession. Instead of traditional audit techniques, auditors are using new data analytics tools to produce audit results. According to a study conducted by PricewaterhouseCoopers (PwC, 2015), "Eighty-five percent of CEOs put a high value on data analytics for their company, and 80% place data mining and analysis as the second-most important strategic technology" (PwC, 2015, p. 3). Accordingly, PwC recommends, "universities should infuse analytical exercises into existing curriculum to help students develop data analytics proficiency on top of their core accounting skills" (PwC, 2015, p. 14).

Accreditation agencies have highlighted the importance of the analytics revolution by requiring universities to develop data skills in the undergraduate curriculum. The AACSB requires new skills for the accounting curriculum, "including the application of statistical tools and techniques, data management, data analytics and information technology throughout the curriculum as appropriate" (AACSB International, 2013, p. 35). The American Institute of Certified Public Accountants (AICPA) has changed the Certified Professional Accountant (CPA) exam to include portions on audit analytics, using visualizations, and gathering requisite data effective July 1, 2019 (AICPA, 2019). Several accounting programs have already adopted analytics into their curriculum, and several programs in Accounting Analytics are already being offered. Additional research is needed to determine the growth of these programs and how the Information Systems disciplines are aiding Accounting Programs in offering these new programs.

We speculate that a similar transformation toward analytics is occurring in marketing programs, with new classes that teach students to analyze CRM data or customer-focused insights gleaned from social media data. There may also be overlap with the study of econometrics in finance and economics departments through machine learning-enabled analyses. Future research can examine the possibility that the study of analytics serves as an overarching curricula inclusion across business disciplines. To the extent that IS programs are leading this move toward analytics, the reputation of IS programs may change from "Does IT Matter?" to "IT Is Everywhere."

Future research should investigate what topics from the model curriculum are being omitted to make room for additional courses in analytics and data science. We anticipate this will happen during the next curriculum guideline revision. This is important in order to understand how the field is evolving. As courses are added in analytics, it is likely that other content is removed, or at least offered as electives rather than required courses. For example, are programs still including coursework in software development and programming? One might anticipate that students interested in analytics prefer more technical IS classes. On the other hand, impactful interpretation of output from data analyses requires insight into context – the environment in which the organization functions – and so departments may decide to include required or elective coursework is business strategy for those with a major or concentration in analytics. Are departments forming partnerships with other departments on campus, for example, by requiring additional coursework in statistics? This question also harkens back to the origins of MIS departments, often emerging from departments that focused on operations research or quantitative methods (e.g., business statistics). Is the pendulum, in fact, swinging back to incorporate the focus of departments pre-1980s? IS departments came into being in the 1980s with the advent of personal computing, and so perhaps the changes observed today are part of a 40-year cycle of reinventing the technology curriculum. Thus, future research can use time series analyses to evaluate changes over time, perhaps even beginning with naming conventions used in the 1970s.

Overall, we sense that the pace and scope of the shift toward analytics in IS is unparalleled in the IS discipline. We are not aware, for example, of a similarly broad movement among IS departments to change their names in the 1990's and early aughts to capture the dramatic rise of the Internet and e-commerce, despite the indisputable magnitude of these

technologies. We speculate that the rapid movement to change department names and create new majors to incorporate analytics may be because it harkens back to one of the referent disciplines of MIS/IS – quantitative methods. Whereas incorporating e-commerce into the curriculum meant a shift in emphasis in existing programming and IT strategy classes, and perhaps one or two new courses, the shift to analytics required a more fundamental revision and new focus. Our data suggests that these adaptations are well underway in many IS programs, attesting to the agility of IS/MIS departments in responding to the environment in which their graduates are employed.

6. LIMITATIONS AND CONCLUSION

As with any research, the limitations of this study should be considered. First, we limited our data collection to undergraduate programs. We suggest future research into trends in business analytics offerings at the graduate level. Second, we did not capture if a given school had more than one business analytics program at the undergraduate level. As universities and schools differ in their use of administrative units such as departments, there may be a few historical data points that were counted as a department (i.e., MIS) when they were under a single business school umbrella. In addition, at least one program included more than one analytics program. This potential mislabeling and double count, while noted, did not significantly change the practical outcomes presented in this research.

In addition, we obtained a data set from a 2013 publication in the *Communications of the Association for Information Systems* (Bell et al., 2013). This data provided a baseline for both the 2018 and 2020 comparisons. This baseline data also introduced limitations of the research. A major limitation is the 2013 data only included AACSB programs. Future research can include both AACSB and non-AACSB programs and compare the two groups. Such an analysis could be beneficial to a significant number of programs worldwide.

In conclusion, the findings uncovered by this research shed light on the evolution of our discipline in the last decade. The focus on and interest in analytics have shaped and expanded our discipline in significant ways, as reflected in new curricula, department names, and degrees and majors.

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Pam Dupin-Bryant is a professor of data analytics and information systems in the Jon M. Huntsman School of Business at Utah State University. She earned her Ph.D. at the University of Wyoming and her master's and bachelor's degrees at USU. Throughout her career, Dr. Dupin-Bryant has employed a wide variety of delivery methods and educational strategies to facilitate learning. Her primary teaching activities include business applications programming, web design/development, and data/information for business. Her research and scholarly writings focus primarily on information systems pedagogy and online/distance education. Pam Dupin-Bryant has received many awards for her teaching innovations, research, and service.

APPENDIX

List of Universities Included in Study

American University, Kogod School of Business
Appalachian State University, John A. Walker College of Business
Arizona State University, W. P. Carey School of Business
Arkansas at Little Rock, University of, College of Business
Arkansas, University of, Sam M. Walton College of Business
Baltimore, University of, Robert G. Merrick School of Business
Bentley University, McCallum Graduate School of Business
Binghamton, State University of New York, School of Management
Boise State University, College of Business and Economics
Bowling Green State University, College of Business Administration
Brigham Young University, Marriott School of Management
Bryant University, College of Business
Butler University, College of Business Administration
Cal State Polytechnic University, Pomona, College of Business Administration
Cal State University, Long Beach, College of Business Administration
Cal State University, Stanislaus, College of Business Administration
California Polytechnic State University, San Luis Obispo, Orfalea College of Business
Canisius College, Richard J. Wehle School of Business
Central Arkansas, University of, College of Business Administration
Cincinnati, Univ of, Carl H. Lindner College of Business
Colorado at Boulder, University of, Leeds School of Business
Colorado at Colorado Springs, University of, College of Bus and Admin and Grad School of Bus Admin
Colorado State University-Pueblo, Hasan School of Business
Colorado State University, College of Business
Connecticut, University of, School of Business
Creighton University, College of Business Administration
Dalton State College, Division of Business Administration
DePaul University, College of Commerce and Charles H. Kellstadt Graduate School of Business
Drexel University, Bennett S. LeBow College of Business
East Carolina University, College of Business
Eastern Kentucky University, College of Business and Tech
Eastern Michigan University, College of Business
Eastern Washington University, College of Business and Public Administration
Emory University, Goizueta Business School
Fairfield University, Charles F. Dolan School of Business
Florida Gulf Coast University, College of Business
Florida, University of, Warrington College of Business Administration
Fordham University, Gabelli School of Business
Francis Marion University, School of Business
Georgia College & State University, J. Whitney Bunting School of Business
Georgia State University, J. Mack Robinson College of Business
Grand Valley State University, Seidman College of Business
Hawaii at Manoa, University of, Shidler College of Business
Hofstra University, Frank G. Zarb School of Business
Houston-Downtown, University of, College of Business
Houston, University of, C.T. Bauer College of Business
Illinois at Chicago, University of, College of Business Administration
Illinois at Springfield, University of, College of Business and Management
Illinois at Urbana-Champaign, University of, College of Business
Illinois State University, College of Business
Indiana State University, Donald W. Scott College of Business
Iowa State University, College of Business
John Carroll University, John M. and Mary Jo Boler School of Business
Kentucky, University of, Carol Martin Gatton College of Business and Economics
Lamar University, College of Business
Louisiana at Lafayette, University of, B. I. Moody, III College of Business Administration
Louisiana Tech University, College of Business
Louisville, University of, College of Business

Manhattan College, School of Business
Massachusetts-Lowell, University of, College of Management
Miami University, Farmer School of Business
Miami, University of, School of Business Administration ohio
Michigan Tech University, School of Business and Economics
Michigan-Dearborn, Univ of, College of Business
Michigan, University of, Stephen M. Ross School of Business
Midwestern State University, Dillard College of Business Administration
Mississippi, University of, School of Business Administration
Morehead State University, College of Business
Nevada, Las Vegas, University of, College of Business
Nevada, Reno, University of, College of Business Administration
New Mexico State University, College of Business
Nicholls State University, College of Business Administration
North Carolina A&T State University, School of Business and Economics
North Carolina at Charlotte, University of, Belk College of Business
North Dakota State University, College of Business Administration
North Texas, University of, College of Business
Northern Michigan University, Walker L. Cisler College of Business
Ohio State University, Max M. Fisher College of Business
Oklahoma State University, William S. Spears School of Business
Oklahoma, University of, Michael F. Price College of Business
Old Dominion University, College of Business and Public Administration
Pace University, Lubin School of Business
Penn State University at Erie, Behrend College, Sam and Irene Black School of Business
Penn State University at Harrisburg, School of Business Administration
Pennsylvania State University, Mary Jean and Frank P. Smeal College of Business Administration
Pittsburg State University, Gladys A. Kelce College of Business
Pittsburgh, University of, Joseph M. Katz Graduate School of Business
Prairie View A & M University, College of Business
Rider University, College of Business Administration
Seattle Pacific University, School of Business and Economics
Seton Hall University, Stillman School of Business
South Florida St. Petersburg, University of, College of Business
South Florida, University of, College of Business Administration
Southern Illinois University Carbondale, College of Business and Administration
Southern Illinois University Edwardsville, School of Business
Southern Indiana, University of, College of Business
St. Cloud State University, G. R. Herberger College of Business
St. John's University, Peter J. Tobin College of Business
St. Joseph's University, Erivan K. Haub School of Business
St. Mary's University, School of Business and Administration
Suffolk University, Sawyer School of Management
Tampa, University of, John H. Sykes College of Business
Temple University, Fox School of Business and Management
Tennessee at Martin, University of, College of Business and Public Affairs
Tennessee State University, College of Business
Tennessee Tech University, College of Business
Texas A&M Int'l University, College of Business Administration
Texas A&M University, Mays Business School
Texas at Arlington, University of, College of Business Administration
Texas-Pan American, University of, College of Business Administration - merged with Texas Rio Grand Valley
Utah State University, Jon M. Huntsman School of Business
Utah, University of, David Eccles School of Business
Virginia Commonwealth University, School of Business
Virginia Polytechnic Inst and State University, Pamplin College of Business
Washington, University of, Michael G. Foster School of Business
West Georgia, University of, Richards College of Business
Western Illinois University, College of Business and Tech
Western New England University, School of Business
Wichita State University, W. Frank Barton School of Business
Widener University, School of Business Administration

Winona State University, College of Business
Winston-Salem State University, School of Business and Economics
Wisconsin Oshkosh, University of, College of Business Administration
Wisconsin-Madison, University of, School of Business
Worcester Polytech Inst, School of Business
Wright State University, Raj Soin College of Business
Youngstown State University, Warren P. Williamson, Jr. College of Business Administration
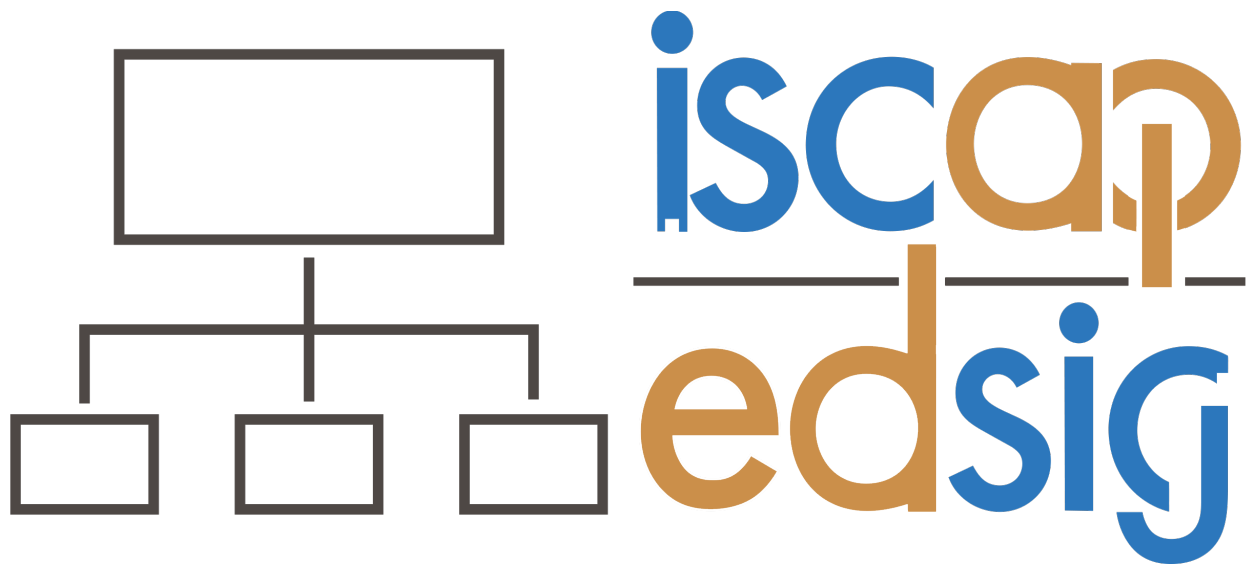
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