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EDITORIAL

Data-driven decision making: implementing analytics to transform academic culture

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The role of an academic is to work on four key areas—research, teaching, service, and outreach. As any faculty progresses through the chain of academic life, the emphasis on each of these areas most likely depends on the factors including the institution, department, and college s/he is working within. At the heart of the pursuit of success in academic life is the attainment of excellence in each of these areas—but how do we measure that? Research abounds on ways that universities measure success, particularly in research productivity and pedagogical innovation and excellence. In Krishen et al. (2019), a knowledge creation framework is proposed which can enable intersectionality and inclusion in academia; this concept was discussed in a recent review from *Journal of Marketing Analytics* as well (Baker 2019). As discussed in business research, analytics can be used as an objective and metrics-based tool for data reduction and understanding (Petrescu and Krishen 2017; Verhoef et al. 2016; Wedel and Kannan 2016). Analytics and metrics are an efficient way to obtain insights, to monitor, and optimize performance, as well as to maintain competitiveness (Krush et al. 2016; Wilson 2010).

Figure 1 shows two different ways that resources can be allocated within an organization, specifically considering an academic institution. The top-down approach shows three key drivers; those are seniority and rank (seniority-based allocation), demographics (homophily principle), and status quo bias (static culture). Seniority-based allocation follows the idea that power in academia can be gained from earlier access to a higher rank, or accumulated advantage theory (Abramo et al. 2016). This type of allocation is also more prevalent in organizational cultures that stress power distance, or accepted inequalities based on hierarchy or other structural systems (Daniels and Greguras 2014; Treviño et al. 2015). The demographics box includes the homophily principle or the idea that social networks and ideas tend to follow a similarity effect (McPherson et al. 2001). According to this principle, individuals have a higher likeness to other individuals because of their perceived similarity with them. The status quo bias box represents the idea that units can use past data and ideas to perpetuate decisions into the future as a tried-and-true shortcut. This type of bias can range from perpetuating resource allocations of the past, promoting a scholarship of a specific type or topic as higher quality, or discounting non-traditional or innovative topics which have not been explored previously in specific units (Sharma et al. 2006).

The bottom-up approach provided in Fig. 1 shows three outcomes: those are performance and productivity (merit-based allocation), demographics (intersectionality and inclusion), and creativity and motivation (transformational culture). Performance and productivity, or merit-based allocation, requires key performance indicators, or targeted analytics (Chapman et al. 2018). To be able to measure performance based on merit, organizations must implement on-going analytics-based data collection and data quality systems (Becker et al. 2018; Ryazanova and McNamara 2016). As a result of this type of resource allocation, the demographics can become more intersectional and inclusive because fairness is increased through transparent, clearly stated, and objective measures. The last box, creativity, and motivation encompasses two key ideas: (1) transformational leadership in combination with diversity leads to higher creativity (Wang et al. 2016) and (2) motivation can be contagious (Krishen 2013) and follows from a carefully implemented organizational culture which serves as a crucial driver of decisions (Lee and Raschke 2018; Lee et al. 2016). A qualified department chair has the potential to implement bottom-up analytics-based decisions and institute resource

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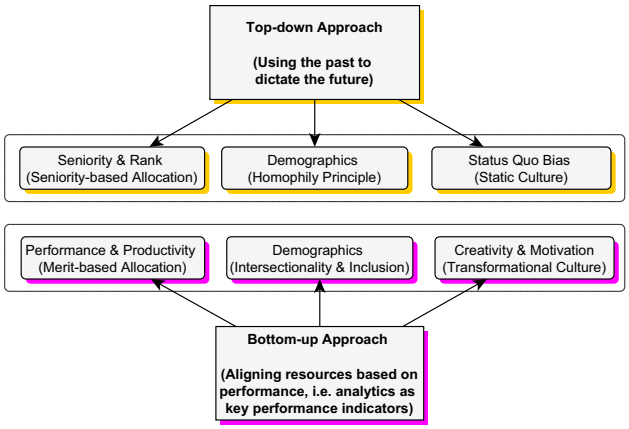

Fig. 1 Combining top-down seniority with bottom-up analytics approaches

allocations which are congruous with performance (Aggarwal et al. 2008; Honeycutt et al. 2010).

The use of analytics in evaluating academic success and effectiveness provides the benefit of a comprehensive performance picture that includes productivity, demographics, as well as creativity and motivation aspects. Analytics can also help with organizing all evaluation elements related to research, teaching, service, and outreach, and with obtaining metrics from objective and subjective sources, as well as qualitative and quantitative data. In combination, universities and departments can use both top-down (the previous decisions and culture) and bottom-up (data-driven analytics) to make more transparent and fair decisions.

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