

PREDICTIVE ANALYTICS USABILITY TO FORECAST FUTURE PERFORMANCE IN COMPLEX PROJECTS

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Predictive analytics is a broad concept that includes a variety of quantitative techniques. Fundamentally, it is a technique that uses historical data to predict future outcomes and events. The historical data is plugged into a mathematical algorithm or model which highlights trends, creating a predictive model that examines current data to predict outcomes and suggest potential actions and steps that can be taken to achieve desired outcomes. Within a project space, predictive analytics allows users to determine improvements or steps which can be undertaken to support successful project outcomes. For example, it allows project managers and sponsors to identify areas of overinvestment (e.g., resourcing, funding, scheduling) and make changes to project management to ensure efficient and effective outcomes (Deloitte, 2012). A study in project management trends conducted by the Project Management Institute (PMI, 2020) shows that currently 23% of projects are being managed incorporating data analysis, predictive analytics and artificial intelligence, and this is set to increase to 37% by 2023 (PMI,

2020). Clearly, it is becoming increasingly important to understand historical data and previous project learnings as it can be vital for supporting project decision-making and ensuring successful outcomes. Unfortunately, a survey conducted by Project.co (2020), shows that 60% of project managers do not currently use retrospective and historic data to track their projects and identify efficiencies or changes that could be made to improve the likelihood of success. It's a pivotal moment for a shift in thinking – project managers need to start considering using predictive analytics as a critical approach to forecast future performance in complex projects.

The role of data and analytics in business-as-usual practices and projects has changed over the last decade. The literature has shown that organisations obtain considerable benefits from implementing predictive analytics to support their decision-making (Attaran & Attaran 2019). This includes understanding potential opportunities and challenges that can be identified through predictive analytic application across business and complex