

Master Thesis Proposal

Revenue Management in Sports: Strategies, Challenges, and State-of-the-Art Analytics

Revenue management has become an essential practice across various industries, particularly in service sectors where the demand and supply balance is often dynamic. In the sports industry, which encompasses professional leagues, amateur sports, event management, and sports tourism, revenue management can be a critical factor in financial sustainability and growth. This thesis aims to explore revenue management strategies in sports, identifying best practices, challenges, and analytics approaches. The study will investigate how sports organizations can effectively manage ticket pricing, sponsorship deals, merchandise sales, and other revenue streams to maximize profitability while enhancing fan engagement and loyalty.

The objectives of the master thesis are as follows:

- Explore revenue management strategies in different sectors of the sports industry from a practice perspective. Address questions like: What are the current revenue management strategies employed by sports organizations? What role do sponsorships and partnerships play in the revenue management of sports organizations? What are the challenges faced by sports organizations in implementing effective revenue management practices? What is the impact of fan engagement and loyalty programs on revenue generation?
- Review and classify the academic literature on RM analytics in sports, including empirical data analytics, machine learning and other predictive models, as well as prescriptive optimization approaches for dynamic pricing and capacity allocation.
- Discuss any gaps between theory and practice, in particular between state-of-the-art optimization approaches important practice requirements (e.g., based on insights from expert interviews and/or from the practice-oriented literature, case studies, etc.).
- Discuss the model by Arslan et al. (2022) in detail, explore solution methods and make suggestions on how to extend it.
- Implement and solve the proposed model, e.g. in AMPL, and apply it to a hypothetical case study, e.g. based on reasonable choice model assumptions that are in line with published empirical findings, and using synthetic or perturbed data.
- Give recommendations, draw conclusions and show future research opportunities.

Requirements

- OPM 781
- Good knowledge in Operations and Revenue Management

- Analytical skills and an ability to transform real-world business problems into Operations Research models

Administrative information for writing a master thesis at the Chair of Service Operations Management can be found [here](#).

Selected Literature Recommendations

Alley, M., Biggs, M., Hariss, R., Herrmann, C., Li, M. L., & Perakis, G. (2023). Pricing for heterogeneous products: Analytics for ticket reselling. *Manufacturing & Service Operations Management*, 25(2), 409-426.

Arslan, H. A., Easley, R. F., Wang, R., & Yılmaz, Ö. (2022). Data-driven sports ticket pricing for multiple sales channels with heterogeneous customers. *Manufacturing & Service Operations Management*, 24(2), 1241-1260.

Arslan, H. A., Tereyağoğlu, N., & Yılmaz, Ö. (2023). Scoring a touchdown with variable pricing: Evidence from a quasi-experiment in the NFL ticket markets. *Management Science*, 69(8), 4435-4456.

Banciu, M., Hinterhuber, A., & Ødegaard, F. (2023). Revenue management in sports, live entertainment and arts. *Journal of Revenue and Pricing Management*, 22(3), 185-187.

Bouchet, A., Troilo, M., Urban, T. L., Mondello, M., & Sutton, W. A. (2020). Business analytics, revenue management and sport: evidence from the field. *International Journal of Revenue Management*, 11(4), 277-296.

Duran, S., Swann, J. L., & Yakıcı, E. (2012). Dynamic switching times from season to single tickets in sports and entertainment. *Optimization Letters*, 6, 1185-1206.

Kemper, C., & Breuer, C. (2016). How efficient is dynamic pricing for sport events? Designing a dynamic pricing model for Bayern Munich. *International Journal of Sport Finance*, 11(1), 4-25.

Jiaqi Xu, J., Fader, P. S., & Veeraraghavan, S. (2019). Designing and evaluating dynamic pricing policies for major league baseball tickets. *Manufacturing & Service Operations Management*, 21(1), 121-138.

Yılmaz, Ö., Easley, R. F., & Ferguson, M. E. (2023). The future of sports ticketing: Technologies, data, and new strategies. *Journal of Revenue and Pricing Management*, 22(3), 219-230.

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