Revised Response to Reviewer's Comments:

We appreciate the thorough review provided by the reviewers and have carefully addressed all the issues raised. Below, we outline our responses to each comment and the corresponding revisions made in the manuscript. Additionally, we have incorporated the recommended changes into the text to enhance clarity and coherence.

Nr.	Reviewers recommendations	Revised manuscript
1.	Any model that helps manufacturing companies improve their production planning has a great impact. However, it is not clear from the article why a new model should be developed and not one of the existing ones used. The theoretical or practical deficiencies that give rise to the generation of the new proposal must be declared in the introduction. The particularity of manufacturing industries in Industry 4.0 in terms of production scheduling is also not explicit.	Despite the promise of technological advancements, many manufacturing enterprises, particularly those in Kosovo, continue to rely on traditional models for production planning and scheduling. Through extensive visits to enterprises in Kosovo over the past few years, it has become evident that a significant number of them still depend on manual paperwork for their scheduling operations. These manual processes, entrenched in traditional models, often prove inadequate in adapting to the complexities of modern manufacturing environments. The observed reliance on manual methods highlights the challenges faced by manufacturing enterprises in integrating advanced technologies into their operations. Traditional models struggle to effectively integrate diverse data sources, respond to dynamic market demands, and optimize resource allocation. As a result, there is a pressing need for a new approach that leverages the power of technology to overcome these shortcomings and drive efficiency gains. Moreover, the adoption of advanced scheduling and sequencing software remains limited among manufacturing firms in Kosovo. Many companies persist in using manual methods or outdated software for critical tasks, thereby missing out on the efficiency gains offered by modern technologies. Our research seeks to bridge this gap by developing a comprehensive mathematical launching model tailored to the specific needs of manufacturing enterprises in Kosovo, particularly in the context of Industry 4.0. By harnessing advanced mathematical algorithms and considering key parameters such as customer significance, resource utilization, and ect. our model aims to provide actionable insights for improving productivity and competitiveness. We are confident that by addressing the limitations of traditional models and embracing the potential of Industry 4.0 technologies, manufacturing companies in Kosovo can unlock new levels of efficiency and performance.

2.	While the study identifies issues related to operational readiness in Industry 4.0 through questionnaires and interviews, it does not take an in-depth look at industry-specific challenges that may impact the effectiveness of the model. The impact of Industry 4.0 on the model assumptions and parameters is also not evident.	In-depth Examination of Industry-specific Challenges: We have expanded our methodology section to provide a detailed overview of the industry-specific challenges encountered by manufacturing enterprises in Kosovo. This includes insights gathered through on-site visits, interviews, and observations, allowing us to gain a deeper understanding of the unique operational dynamics and constraints within the manufacturing landscape of Kosovo. Alignment with Industry 4.0 Principles: We have revised our discussion section to explicitly elucidate how our model integrates key principles of Industry 4.0. Specifically, we have highlighted how our model incorporates data-driven decision-making processes and automation to optimize production sequences and resource allocation. By emphasizing these integrations, we aim to underscore the relevance and applicability of our model within the context of Industry 4.0 transformations in manufacturing. These enhancements address the reviewer's concerns by providing a more comprehensive analysis of industry-specific challenges and explicitly linking our model with the principles of Industry 4.0. We believe that these revisions significantly strengthen the rigor and relevance of our study, contributing to a more nuanced understanding of the implications of Industry 4.0 for manufacturing enterprises in Kosovo.
3.	The model assumptions and parameters section first shows the methodology, when the first is assumed to be the result of the application of the second.	Regarding your concern about subsection 3.1, we have made corrections according to our understanding. The revised text can be found in the manuscript. However, it was not entirely clear to us. Please review the changes and let us know if further adjustments are needed.
4.	The described methodology indicates the determination of the model parameters based on the company survey; however, the formation of the survey based on theory and best practices for this type of model is not described. Additionally, the results of the survey are not shown.	Thank you for your feedback. It is very valuable for improving this section. Therefore, we have added the described methodology to this section as follows: The questionnaire was designed based on a thorough review of existing literature, encompassing theories and practices relevant to production sequencing and Industry 4.0 principles. This literature review guided the identification of key parameters that influence the determination of job significance within manufacturing enterprises. By grounding our questionnaire in established theories and empirical evidence, we aimed to ensure its validity and relevance to the research objectives.

		Moreover, the survey questionnaire underwent a rigorous validation process to ensure its effectiveness in capturing pertinent data. This involved consulting with domain experts and practitioners in the field of manufacturing operations management to review and refine the questionnaire items. Their insights and feedback were instrumental in enhancing the questionnaire's comprehensiveness and clarity. Additionally, the survey methodology incorporated established principles of survey design to optimize data collection and ensure the reliability of responses. This included using clear language, providing exhaustive response options, and pre-testing the questionnaire with a small sample to identify and address any potential ambiguities or issues. Overall, the survey questionnaire was meticulously developed based on theoretical foundations, empirical evidence, and input from industry experts to ensure its alignment with best practices in the field. By adhering to these rigorous methodological standards, we aimed to obtain high-quality data that could inform the development of the launching model and contribute to advancements in production planning and scheduling processes within the Industry 4.0 context. Regarding the results of survey, they are shown in Table 3 to table 18. The questionnaire is also included in the supplementary file. Please let me know if there are any other issues in this section that is needed to be changed.
5.	The paper does not include a comparative analysis of the proposed model with existing models or methodologies, which could have provided a clearer understanding of its novelty and effectiveness in enhancing production efficiency.	We appreciate the reviewer's suggestion regarding the inclusion of a comparative analysis. However, we would like to highlight that due to certain limitations or constraints, conducting a direct comparison with existing models or methodologies was not feasible within the scope of our study. Our focus has been on delineating the unique features, strengths, and practical applications of our model, thereby offering valuable contributions to the field of production planning and scheduling. By elucidating how our model addresses specific challenges and leverages Industry 4.0 principles, we aim to provide readers with a comprehensive understanding of its potential impact on manufacturing enterprises.

		It's worth noting that while we did not include a comparative analysis in this stage of the research, we are currently in the process of exploring comparative evaluations with existing models. Some initial groundwork has been laid in this regard; however, our primary focus remains on elucidating the conceptual framework and practical implications of our proposed model. We remain committed to furthering discussions and collaborations within the academic community to explore potential avenues for comparative evaluations in future research endeavors.