Research Square

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Performance Measurement for New Mobile Data Services During Generation Upgrading Period: A Case of China's Telecom Industry

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Abstract

For the global telecom operators, mobile data services have gradually taken the part of traditional voice services to become the main revenue growth point. However, during the upgrading period of new generation networks (Such as 5G), new mobile data services are still at the stage of exploration, the network capabilities and the application scenarios are unmatured. In this phase, it is incomplete and misleading to simply measure the performance of new services from one dimension, such as data traffic or revenue, and the measurement should be dynamically changed according to the development of the new services. Therefore, telecom operators want to improve the existing performance measurement from the aspect of integrity and dynamics. In this paper, we propose Mobile-data-service Development Index (MDDI), and build a quantitative model to dynamic measure the overall performance of mobile data services. To approach a fuller understanding, we creatively bring investment indicators and networks reliability indicators into performance indicators system, and discuss the relationships among subindices and the selection of outcome criteria in MDDI. In the part of empirical research, we use the model to analyze the dynamic characteristics of a new mobile data service in China, and summarize the development strategies of every stage. The findings can also give guidelines for new services of 5G and other new generation networks in the future.

Full Text

This preprint is available for download as a PDF.

Figures

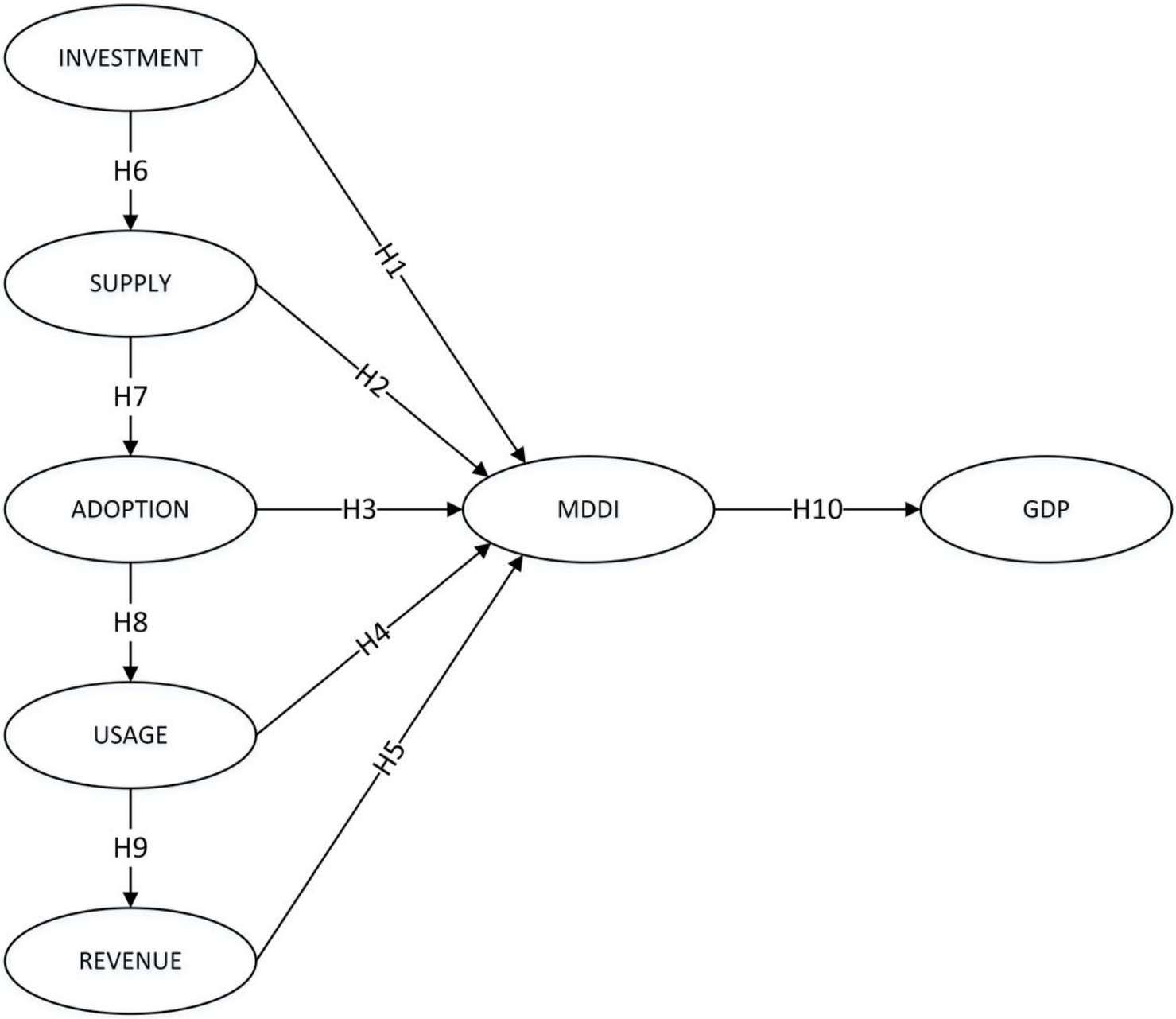

Figure 1

The conceptual model of MDDI.

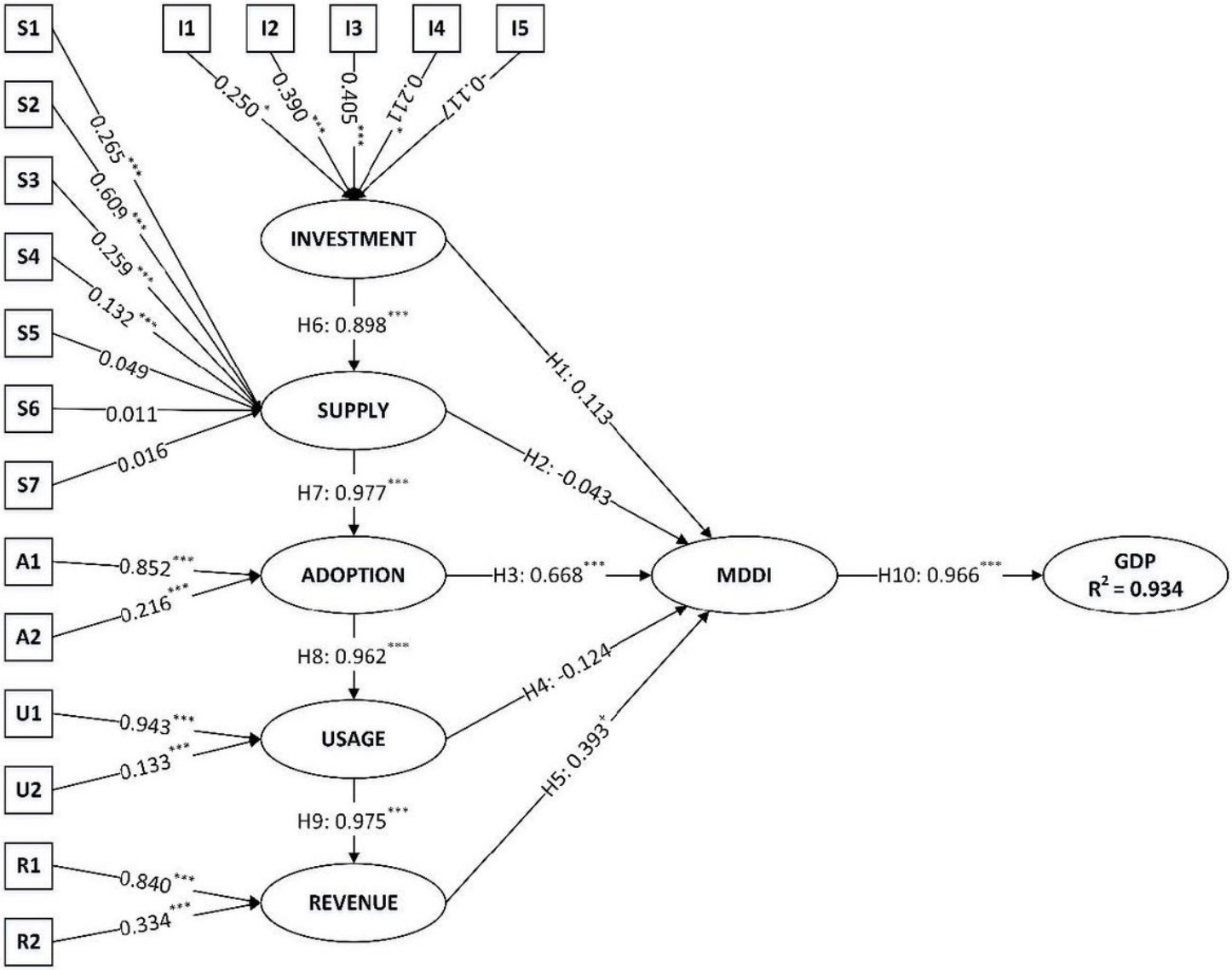

Figure 2

The results of the PLS SEM in preparation stage (2013).

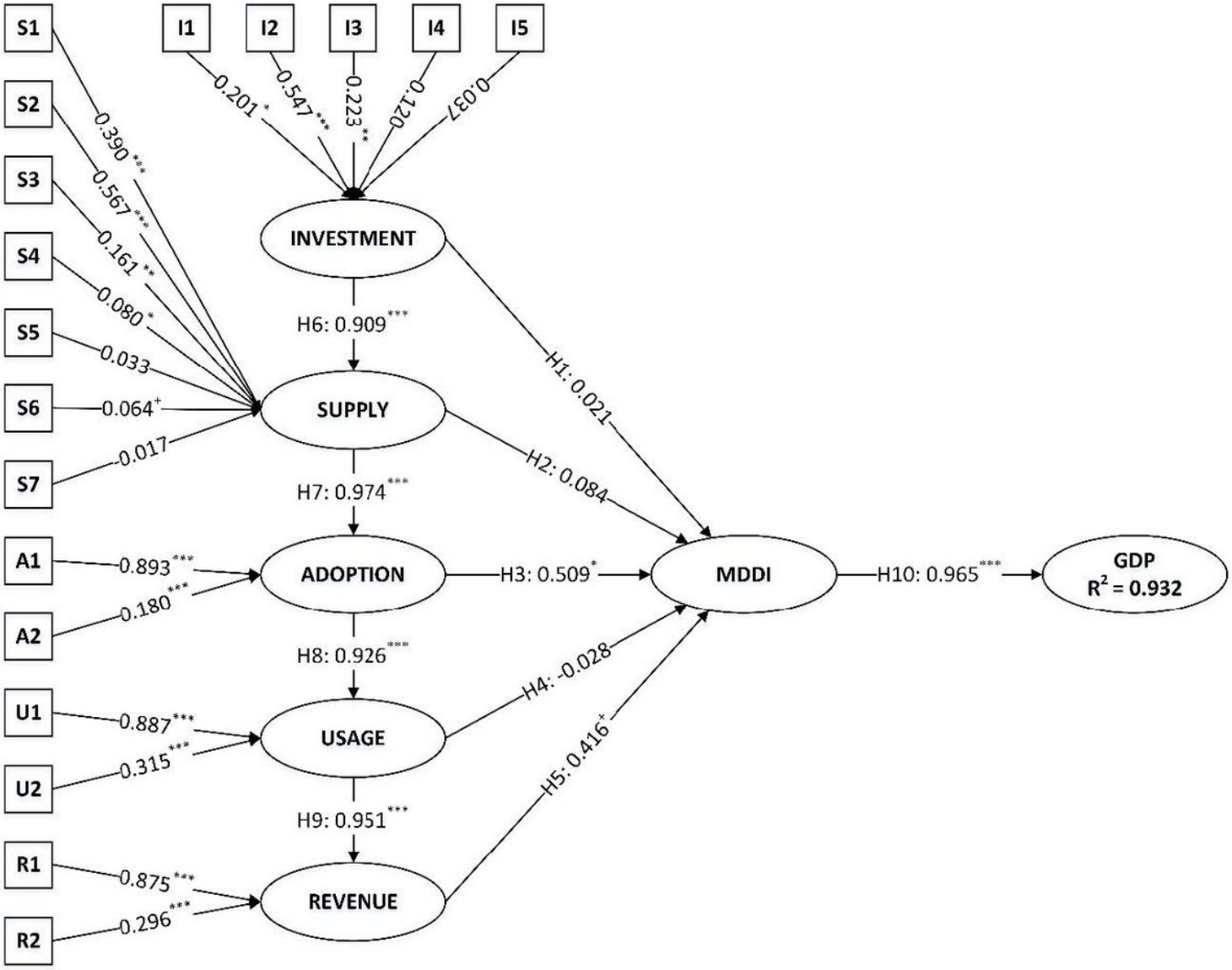

Figure 3

The results of the PLS SEM in window stage (2014).

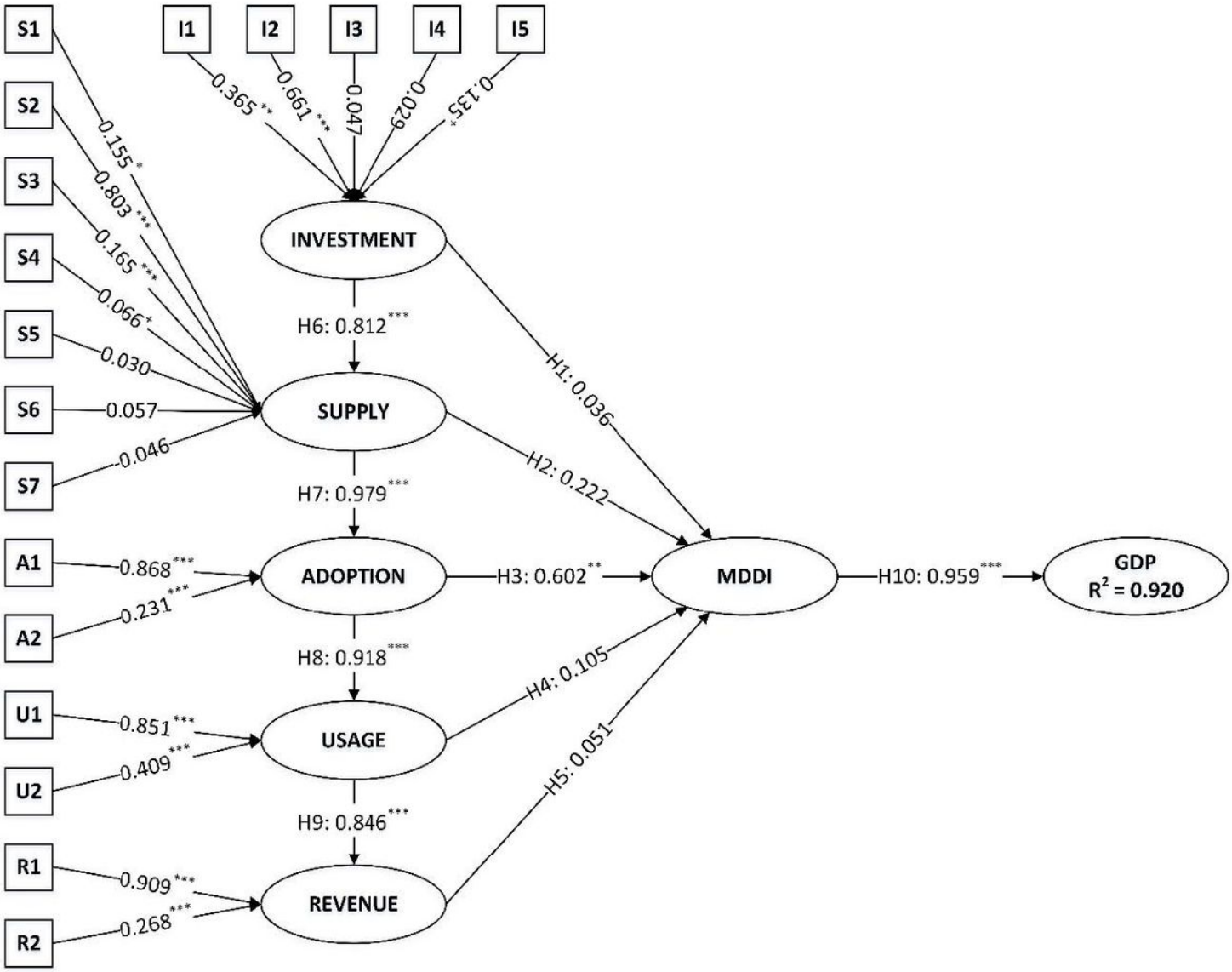

Figure 4

The results of the PLS SEM in competition stage (2015).

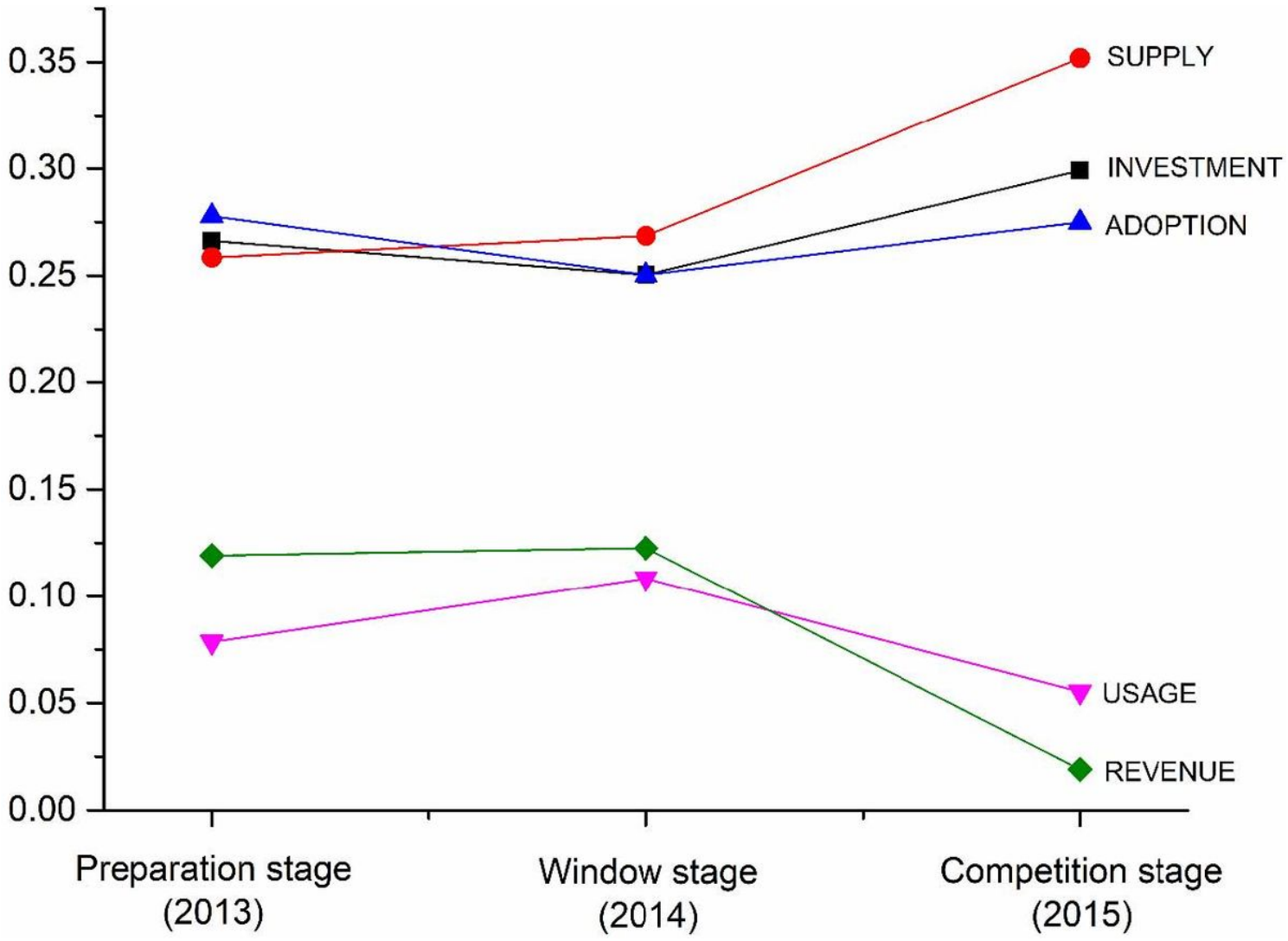

Figure 5

The variation in explanatory contributions of the MDDI subindices by 2013-2015.