

KERELATIFAN AKSIOM-AKSIOM UTILITI TUNGGAL NASH DENGAN AKSIOM-AKSIOM VON NEUMANN-MORGENSTERN

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ABSTRAK

Semenjak Nash mengusulkan 8 aksiomnya sebagai dasar memahami teori utiliti tunggal, pelbagai pihak seperti Schmidt, Sobel, Gerber dan van Damme memberikan pandangan bahawa kelapan-lapan aksiom Nash ini sebenarnya dipengaruhi secara langsung oleh 5 aksiom yang dibangunkan oleh von Neumann dan Morgenstern sebelumnya untuk memahami teori yang sama. Namun, belum ada bukti-bukti matematik yang lengkap untuk menyokong pandangan ini, yang setakat ini hanyalah disokong oleh pandangan-pandangan peribadi dan setinggi-tingginya oleh bukti-bukti matematik yang ditujukan untuk menunjukkan hubungan di antara beberapa aksiom Nash dengan beberapa aksiom von Neumann-Morgenstern sahaja. Dalam kajian ini, kami membuktikan selengkapnya bahawa kelima-lima aksiom von Neumann-Morgenstern tersebut mempengaruhi secara terus 6 aksiom Nash. Kami utarakan pandangan kami terhadap kedudukan 2 aksiom Nash yang selebihnya itu.

Kata kunci: aksiom von Neumann dan Morgenstern; aksiom Nash

ABSTRACT

From the time when Nash proposed 8 axioms as the basic to understand the individual utility theory, many scholars such as Schmidt, Sobel, Gerber and van Damme anticipated that in understanding the same theory, the axioms were strongly influenced by the 5 axioms previously proposed by von Neumann and Morgenstern. There was no established mathematical proof to support these views, which so far were only supported by personal observations and at the most, mathematical substantiation to correlate some of the Nash and von Neumann-Morgenstern axioms. In this study, we compellingly proved that the 6 axioms of Nash were strongly influenced by 5 von Neumann and Morgenstern axioms. We forward our views on the position of the remaining 2 Nash's axioms.

Keywords: von Neumann and Morgenstern's axioms; Nash's axioms

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