

Impact of fairness concerns on resource-sharing decisions: A comparative analysis using evolutionary game models in manufacturing enterprises

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ABSTRACT

In recent years, the resource-sharing model has developed rapidly, and manufacturing enterprises have paid more attention to profit distribution and resource investment. Studying the role of fairness concern behaviour in enterprise resource-sharing decisions can provide strategic references for enterprises to implement resource-sharing. This article considers the fairness concern behaviour of resource-sharing enterprises and constructs two symmetric evolutionary game models for resource-sharing. Based on the resource-sharing strategy when the enterprise is fair and neutral, a comparative study is conducted on the impact of fairness concern behaviour on the resource-sharing equilibrium strategy. MATLAB is used for numerical simulation. The analysis results indicate that: (1) the system cost coefficient, information level coefficient, information loss coefficient, resource conversion ability coefficient, resource collaboration ability coefficient, and penalty factor all have an impact on the strategic evolution results of both parties in the game enterprise, (2) fairness concerns include heterogeneity, directionality, and reinforcement, which affect the resource-sharing strategies of enterprises. This study provides a reference for shared decision-making in manufacturing enterprises and provides recommendations for their business development.

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Vpliv pomislekov glede pravičnosti pri odločitvah o delitvi virov: Primerjalna analiza z uporabo modelov evolucijske igre v proizvodnih podjetjih

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POVZETEK

V zadnjih letih se je model delitve virov hitro razvijal, proizvodna podjetja pa so več pozornosti namenila razdelitvi dobička in vlaganju v vire. Proučevanje vloge vedenja v zvezi s pravičnostjo pri odločitvah o delitvi virov v podjetjih lahko zagotovi strateška vodila za podjetja pri izvajanju delitve virov. V tem članku je obravnavano vedenje podjetij, ki si delijo vire, v zvezi s skrbjo za poštenost, in oblikovana sta dva simetrična modela evolucijske igre za delitev virov. Na podlagi strategije delitve virov, ko je podjetje pošteno in nevtrarno, je izvedena primerjalna študija o vplivu vedenja v zvezi s skrbjo za poštenost na ravnovesno strategijo delitve virov. Za numerično simulacijo se uporablja MATLAB. Rezultati analize kažejo, da: (1) koeficient sistemskih stroškov, koeficient ravni informacij, koeficient izgube informacij, koeficient zmožnosti pretvorbe virov, koeficient zmožnosti sodelovanja z viri in kazenski faktor vplivajo na rezultate strateškega razvoja obeh podjetij, vključenih v igro, (2) skrb za pravičnost vključuje heterogenost, usmerjenost in okrepitev, ki vplivajo na strategije podjetij za souporabo virov. Ta študija predstavlja vodilo za skupno odločanje v proizvodnih podjetjih in daje priporočila za njihov poslovni razvoj.

PODATKI O ČLANKU

Ključne besede:

Pomisliki glede pravičnosti;
Simetrična proizvodna podjetja;
Delitev virov;
Evolucijska igra;
Simulacija;
Digitalno gospodarstvo;
MATLAB;
Strateška odločitev;
Poslovni modeli

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