

INTISARI

Behavioural operational research (BOR) memiliki konsep bahwa riset operasi (OR) secara praktis selalu terjadi pada permasalahan di sekitar manusia sehingga apa yang terjadi di dalamnya masih dipengaruhi oleh perilaku manusia itu sendiri. Salah satu praktik OR adalah melalui penggunaan model simulasi berbasis agen atau *agent-based modelling simulation* (ABMS) yang melibatkan agen otonomus yang saling berinteraksi. Memahami perilaku manusia dalam fasilitasi ABMS menjadi penting karena ABMS hanya sebuah alat untuk membantu pengambilan keputusan. Perilaku yang berbeda bisa menghasilkan keputusan yang berbeda meskipun informasi yang diperoleh dari ABMS sama.

Risk attitude, sebagai salah satu faktor kepribadian yang mempengaruhi perilaku, dianalisis pengaruhnya terhadap kemampuan pengambilan keputusan, yang digambarkan dengan *decision-making competence* (DMC). Dalam ABMS, DMC direpresentasikan melalui kemampuan pengguna dalam memahami dan mengatur parameter model, serta mempersepsikan risiko berdasarkan periode berjalannya simulasi. Meskipun sudah ada penelitian lain yang membahas hubungan antara kedua variabel tersebut, belum diketahui apakah ada hubungan di antara keduanya ketika individu menggunakan ABMS untuk membantu pengambilan keputusan.

Pada penelitian ini, peneliti menggunakan *Domain-Specific Risk Taking* (DOSPERT) untuk mengukur *risk attitude* domain finansial yang selanjutnya akan dianalisis pengaruhnya terhadap DMC individu, sesuai dengan kerangka kerja *Adult Decision-Making Competence* (A-DMC), khususnya untuk indeks *applying decision rules* dan *consistency in risk perception*. Domain finansial menjadi lingkup penelitian ini karena aspek finansial merupakan salah satu bagian dari pertimbangan *benefit-cost* dalam pengambilan keputusan. Kemampuan dalam manajemen finansial juga akan mempengaruhi bagaimana orang tersebut mengatur aspek kehidupan lainnya.

Sebanyak 20 mahasiswa yang memiliki latar belakang pengetahuan mengenai domain finansial dilibatkan dalam eksperimen yang menggunakan model "*Customer Stores Choice Model*" pada NetLogo. Setelah melakukan simulasi, partisipan diharuskan menyelesaikan studi kasus berkaitan dengan hasil simulasi. Hasil penelitian menunjukkan bahwa tidak ada perbedaan yang signifikan antara DMC yang dimiliki oleh individu yang memiliki *risk attitude* yang berbeda. Selain itu, tidak pula ditemukan korelasi dan hubungan kausalitas antara *risk attitude* dan DMC partisipan.

Kata kunci: *behavioural operational research* (BOR), *agent-based modelling simulation* (ABMS), *risk attitude*, *decision-making competence* (DMC), domain finansial dan ekonomi, *applying decision rules* (DR), *consistency in risk perception* (RP)

ABSTRACT

Behavioural operational research (BOR) holds the idea that operational research (OR) practically always occurs within issues around humans so that what happens inside the OR process will be influenced by humans' behaviour itself. One of OR practices is the use of agent-based modeling simulation (ABMS) which involves autonomous and interactive agents. Understanding humans' behaviour in ABMS facilitation becomes necessary since ABMS is just a decision support tool. Different behaviours may result to different decisions in spite of similar informations gained from ABMS.

Risk attitude, as one of the personality factors influencing behaviour, is analysed by researcher related to its influence on decision-making skill, which is represented by decision-making competence (DMC). In ABMS, DMC is represented by users' ability in understanding and adjusting model parameters, also in perceiving risks based on simulation's period of running. Although there have been several studies discussing about the relationship between these two variables, it is not yet known whether there is a relationship between the two when individuals use ABMS to support decision-making.

In this research, Domain-Specific Risk Taking (DOSPERT) is used to examine financial domain risk attitude which later be assessed related to its influence on individual DMC, following the framework of Adult Decision-Making Competence (A-DMC), specifically for applying decision rules and consistency in risk perception indices. Financial domain becomes the scope of this research because financial is one of the aspects examined in benefit-cost analysis during decision-making. Ability in financial management also affects how individuals manage other aspects of life.

20 students who have financial knowledge background are involved in the experiment using "Customer Stores Choice Model" from NetLogo. After running simulation, participants are asked to solve several case studies using informations gained from the simulation. The result of the research shows that there is no significant difference on the DMC between individuals with different risk attitudes. The result also shows that there is no correlation and causality relationship between risk attitude and DMC.

Key words: *behavioural operational research (BOR), agent-based modeling simulation (ABMS), risk attitude, decision-making competence (DMC), financial and economic domain, applying decision rules (DR), consistency in risk perception (RP)*