

BAB IV

KESIMPULAN

Misalkan X dalah himpunan semesta tak kosong. Misalkan A, B dan C merupakan himpunan kabur *hesitant* atas X , dengan h, h_1 dan h_2 merupakan HFE berturut-turut, berikut definisi dari beberapa operasi-operasi pada himpunan kabur *hesitant* dan sifat-sifatnya :

1. Operator dan operasi dasar pada himpunan kabur *hesitant*, yaitu

$$a. h^- = \min\{\gamma | \gamma \in h\}$$

$$b. h^+ = \max\{\gamma | \gamma \in h\}$$

$$c. h^c = \bigcup_{\gamma \in h} \{1 - \gamma\}$$

$$d. h_1 \cup h_2 = \bigcup_{\gamma_1 \in h_1, \gamma_2 \in h_2} \max\{\gamma_1, \gamma_2\}$$

$$e. h_1 \cap h_2 = \bigcup_{\gamma_1 \in h_1, \gamma_2 \in h_2} \min\{\gamma_1, \gamma_2\}$$

$$f. h^\lambda = \bigcup_{\gamma \in h} \{\gamma^\lambda\}$$

$$g. \lambda h = \bigcup_{\gamma_1 \in h} \{1 - (1 - \gamma)^\lambda\}$$

$$h. h_1 \oplus h_2 = \bigcup_{\gamma_1 \in h_1, \gamma_2 \in h_2} \{\gamma_1 + \gamma_2 - \gamma_1 \gamma_2\}$$

$$i. h_1 \otimes h_2 = \bigcup_{\gamma_1 \in h_1, \gamma_2 \in h_2} \{\gamma_1 \gamma_2\}$$

$$j. A_{env}(h) = \{\langle h^-, 1 - h^+ \rangle\}$$

2. Sifat-sifat berdasarkan operasi dasar pada himpunan kabur *hesitant*, yaitu

$$a. h_1^c \cup h_2^c = (h_1 \cap h_2)^c$$



$$b. h_1^c \cap h_2^c = (h_1 \cup h_2)^c$$

$$c. (h^c)^\lambda = (\lambda h)^c$$

$$d. \lambda(h)^c = (h^\lambda)^c$$

$$e. h_1^c \oplus h_2^c = (h_1 \oplus h_2)^c$$

$$f. h_1^c \otimes h_2^c = (h_1 \otimes h_2)^c$$

$$g. A_{env}(h^c) = (A_{env}(h))^c$$

$$h. A_{env}(h_1 \cup h_2) = A_{env}(h_1) \cup A_{env}(h_2)$$

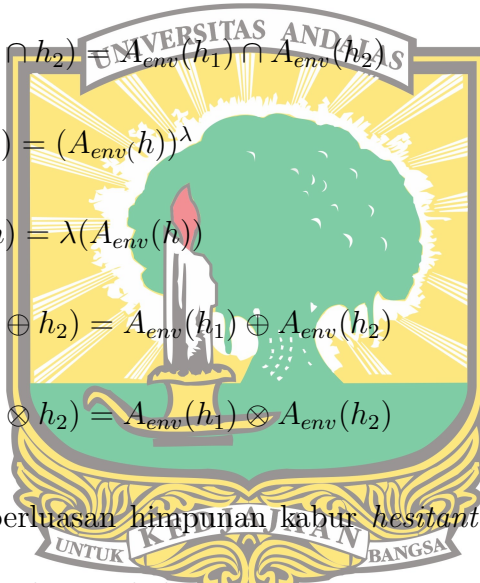
$$i. A_{env}(h_1 \cap h_2) = A_{env}(h_1) \cap A_{env}(h_2)$$

$$j. A_{env}(h^\lambda) = (A_{env}(h))^\lambda$$

$$k. A_{env}(\lambda h) = \lambda(A_{env}(h))$$

$$l. A_{env}(h_1 \oplus h_2) = A_{env}(h_1) \oplus A_{env}(h_2)$$

$$m. A_{env}(h_1 \otimes h_2) = A_{env}(h_1) \otimes A_{env}(h_2)$$



3. Salah satu perluasan himpunan kabur *hesitant* adalah himpunan kabur dual *hesitant*, dengan beberapa operator yaitu,

$$a. \oplus\text{-gabungan} : d_1 \oplus d_2 = \{h_{d_1} \oplus h_{d_2}, g_{d_1} \otimes g_{d_2}\} = \cup_{\gamma_{d_1} \in h_{d_1}, \eta_{d_1} \in g_{d_1}, \gamma_{d_2} \in h_{d_2}, \eta_{d_2} \in g_{d_2}} \{\{\gamma_{d_1} + \gamma_{d_2} - \gamma_{d_1} \gamma_{d_2}\}, \{\eta_{d_1} \eta_{d_2}\}\};$$

$$b. \otimes\text{-irisan} : d_1 \otimes d_2 = \{h_{d_1} \otimes h_{d_2}, g_{d_1} \oplus g_{d_2}\} = \cup_{\gamma_{d_1} \in h_{d_1}, \eta_{d_1} \in g_{d_1}, \gamma_{d_2} \in h_{d_2}, \eta_{d_2} \in g_{d_2}} \{\{\gamma_{d_1} \gamma_{d_2}\}, \{\eta_{d_1} + \eta_{d_2} - \eta_{d_1} \eta_{d_2}\}\};$$

$$c. nd = \cup_{\gamma_d \in h_d, \eta_d \in g_d} \{1 - (1 - \gamma_d)^n, (\eta_d)^n\};$$

$$d. d^n = \cup_{\gamma_d \in h_d, \eta_d \in g_d} \{(\gamma_d)^n, 1 - (1 - \eta_d)^n\};$$

dimana n adalah bilangan bulat positif dan semua hasil adalah DHFS,
dan beberapa sifat yaitu,

- a. $d_1 \oplus d_2 = d_2 \oplus d_1$;
- b. $d_1 \otimes d_2 = d_2 \otimes d_1$;
- c. $\lambda(d_1 \oplus d_2) = \lambda d_1 \oplus \lambda d_2$;
- d. $(d_1 \otimes d_2)^\lambda = d_1^\lambda \otimes d_2^\lambda$.

