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Gayatri Pany* (gayatripany@gmail.com), Indian Institute of Technology Bhubaneswar, Bhubaneswar, Odisha 751007, India. *A study on vector invex equilibrium problems with convexificator approach.*

In this work, we study vector invex equilibrium problems using convexificators. Stampacchia and Minty type mixed vector invex equilibrium problems (SMVIEP and MMVIEP) in terms of convexificators are formulated. Relationships between them are derived. Minty vector VI and its generalizations are used to obtain criteria for a point to be vector minimal of a vector optimization problem (VOP). Recently some existence results are obtained for weakly efficient solutions of convex VOPs under relaxed compact assumptions in Hadamard manifolds using subdifferentials. The results can be improved using convexificators, a weaker version to subdifferentials. We study equilibrium problems using convexificator. We consider the following MMVIEP. Let X, Y be real Banach spaces, $L(X, Y)$ denote the set of all continuous linear mappings from X to Y . Suppose K is a nonempty closed convex subset of E , $P \subset Y$ is a closed convex pointed cone of Y , $\phi : K \times K \rightarrow 2^L(X, Y)$, $b : K \times K \rightarrow Y$ and $\eta : K \times K \rightarrow X$, then MMVIEP is defined as,

$$\text{find } w \in K : \sup_{w^* \in \phi(w)} (w^*, \eta(v, w)) + b(w, w) - b(w, v) \leq_{\text{int}P} 0, \text{ for all } v \in K. \quad (1)$$

We formulate both SMVIEP and MMVIEP in terms of convexificators and discuss some results in connection with VOP. (Received August 28, 2016)