This study investigated the process of how and when imams' leadership traits could influence their leadership behavior. In the moderated mediation analysis, this research hypothesized, two leadership traits of imams (i.e. motivation to lead or MTL and past leadership experiences) might mediate the influence of three leadership traits (general cognitive ability, personality, and religiosity) toward the imams' managerial leadership behavior. The analysis also hypothesized that the mediation process might be moderated by the imams' high and low job autonomous situation. A structured, Malay version-self-administered questionnaire was distributed to 357 imams around Peninsular Malaysia. Results of the hierarchical regression analysis revealed that the traits of imams explained 40.5% variance of leadership behavior. Specifically, the analysis demonstrated leadership behavior was influenced significantly by the imams' extraversion, agreeableness, and openness personality, social-normative MTL, and past leadership experiences. Imams' religiosity and general cognitive ability did not show potential to influence their leadership behavior. Furthermore, this research found social-normative MTL showed partial mediation on the association of personality extraversion and openness with the criterion. Past leadership experiences did not mediate the leadership traits and behavior association. Finally, the analysis revealed high job autonomous situation has potential to moderate the influence of openness personality and affective-identity MTL toward leadership behavior.