The history behind the evolution of the American postsecondary education has imitated the European system with the exception of the community college. The community college strives to meet the needs of all students with an enrollment open door policy. This study examined relationships between student demographics and the achievement of core performance indicators by Ohio community colleges. The core performance indicators measure technical skill attainment; credential, certificate, or degree achievement; student retention or transfer; student placement; and nontraditional participation and completion. Using archived data from 2007-2013 required by the Carl D. Perkins Career and Technical Education Act of 2006, a linear mixed model analysis was performed discovering significant relationships between the core performance indicators and other demographic factors such as, gender, race, students who meet the definition of students with disabilities, students who are economically disadvantaged, students who are displaced homemakers, students with limited English proficiency, and those students pursuing nontraditional careers for their gender. The linear mixed model was used due to the fixed effects of the student demographics, and the Ohio community colleges as random factors. The cohort years comprised the repeated measure. The results of the LMM indicated
that the factor of gender was significant under two of the core performance indicators with positive impact towards achieving the target goal by the community college. Race was found significant under all core performance indicators with positive impact. Students meetings the definition of disabilities, displaced homemakers, and those students seeking nontraditional career paths each had significance under one core performance indicator. Students meeting the definition of economically disadvantaged were found significant under three different core performance indicators with positive impact. Single parent status negatively impacted the achievement of the core performance indicators. Students with limited English proficiency were found to be significant twice under different core performance indicators, once with positive impact and once with negative impact. Understanding the relationships of the effects may enable Ohio community colleges to better use their limited resources based on the needs of the students attending each statewide location.