An Implementation of Goal Programming Model to Analyze the Factors Affecting on Early Childhood Development; A Case Study

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A good foundation in early childhood development makes a significant impact on children who will become decision makers in future. Areas of early childhood development are mainly considered as social development, language development, self-care development, physical development and cognitive development. This study examined the impact of birth weight of child, gender, household size and parents' education level on early childhood development in Mihintale, Rambukkana and Polgahawela Divisional Secretariat divisions. A Goal Programming model is developed to find minimum birth weight, gender, household size and parents' education level which are mostly affected on early childhood development. A sample survey using a questionnaire is used to collect the data under each development category. Reliability Analysis and Pearson Correlation Analysis is done by using *MINITAB* software and constructed Goal Programming model is solved by using *LINGO.* Pearson correlation analysis concluded that birth weight ($r = 0.73$), household size ($r = 0.65$) and parents' education level ($r = 0.61$) positively and significantly associates with early childhood development. The results further indicated that, there is no relationship between gender and early childhood development. According to the solutions of the goal programming model, the group of children whose birth weight is more than 3.0 kg, household size 4 - 5 and having parents with higher education have better early childhood development.

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