The pursuit of human development and well-being have been topics of interest among philosophers, scientists, policy-makers, and aid workers across the world and throughout contemporary history, especially in the last sixty years thereabouts, in which academic interest in these topics has literally boomed. Nevertheless, exactly what scholars and politicians mean by development and well-being, together with their indicators, has not yet reached an emerging common ground or a broad consensus. Actually, while numerous efforts and progresses in the conception and implementation of development policies and well-being assessments have been made, the bulk of academic research on these topics generally refers to, and offers explanations of, the complexity of well-being and its multi-dimensional character on the one hand, but on the other hand most of the research proceeds to highlight and explore just one dimension of well-being, analysing it in isolation from others. Therefore, drawing on the social indicators approach, in this paper we equate well-being with the satisfaction of physical basic needs and shift the debate further away from economic determinism. By doing so, we aim to investigate into the relationship between economic growth and the multi-dimension of human well-being concerning the fulfillment of basic needs. More specifically, in the paper we analyse the interdependence between gross domestic product (GDP) and the earliest composite measure of well-being – the vintage index of physical quality of life (PQLI) – by using a dynamic time series analysis for a temporal range of twenty-six years, from 1992 to 2017, with regard to a sample of four Latin American countries (Argentina, Mexico, Brazil, and Cuba) as representative of the entire population of the Latin America region. Results from the longitudinal data analysis suggest that there is a long-period interdependence between GDP and PQLI for different temporal lags which is not possible to observe through static analyses. Furthermore, the results imply that successful policies require an early focus on PQLI, not only because of its direct impact on the satisfaction of basic needs, especially with regards to physical necessities such as health and education, but mainly because of its feedback effect on government social expenditures.