

## Factors Affecting Soybean Meal Prices in Thailand's Agriculture Supply Chain Using SEM Analysis

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### Abstract

This study examines the complex factors influencing soybean meal pricing in Thailand's import dependent agricultural supply chain using Structural Equation Modeling (SEM). Based on Network Theory, Resource Dependence Theory, and Institutional Theory, we developed a comprehensive framework analyzing how international supply chain management, network control structures, and business environments collectively determine commodity prices in developing countries. Using monthly data from January 2011 to December 2023 (156 observations), our SEM framework examines five primary constructs: Global Supply Network (GSN), Thailand Demand Patterns (TDP), Economic and Policy Environment (EPE), Market Structure and Competition (MSC), and Supply Chain Risk Factors (SCR). Thailand imports approximately 2.5 million tons of soybean meal annually, valued at over 45 billion baht, making price volatility a critical concern for livestock, aquaculture, and food industries where feed costs represent 60-70% of production expenses. The study addresses significant gaps in understanding price formation mechanisms within import-dependent agricultural markets through sophisticated statistical modeling. Expected results show the integrated SEM model achieving excellent goodness-of-fit indices (CFI > 0.95, TLI > 0.95, RMSEA < 0.08) while explaining substantial variance in price formation ( $R^2 > 0.70$ ).

### Keywords

Agricultural imports, price forecasting, structural equation modeling, supply chain management, Thailand agriculture.