Title : Sales Forecasting of Air Conditioner Cleaning Services by Sales Channel of Home Product Center Public Company Limited Using the Box–Jenkins Method

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ABSTRACT

This study aims to develop forecasting models and forecast sales of air conditioner cleaning services across three sales channels—Mobile App, Website, and Branch—using the Box–Jenkins method. Secondary data were obtained from Home Product Center Public Company Limited. Monthly time series data were collected from September 2020 to June 2025 for the Mobile App channel, and from January 2020 to June 2025 for the Website and Branch channels. The data were divided into training and testing sets. For the Mobile App channel, the training period covered September 2020 to June 2024, and the testing period covered July 2024 to June 2025. For the Website and Branch channels, the training period covered January 2020 to May 2024, and the testing period covered June 2024 to June 2025. Forecasting accuracy was evaluated using Mean Absolute Percentage Error (MAPE). The results show that the ARIMA(0,1,0) model was selected for both the Mobile App channel (MAPE = 21.34%) and Website channel (MAPE = 33.45%). however, diagnostic checking indicated that these models were not suitable for forecasting. For the Branch channel, the SARIMA$(0,1,0)(1,0,0)_{12}$ model was selected (MAPE = 28.65%), and diagnostic results confirmed that this model was appropriate for forecasting.

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