

The impact on inventory of the previously described initiatives is described in this section. For our case study, the main impact of improving forecasting accuracy is expected to be on the determination of safety stock. The forecasting and inventory management of “The One” is a dynamic system that is updated every time a new forecast is obtained. The firm estimates safety stock for each item by using a desired service level multiplied by the standard deviation of the forecasting errors.

It should be pointed out that the MSE is an estimate of the variance of the forecast error. Thus, the root mean squared error (RMSE) will also be an estimate of the standard deviation of the forecast errors. Under these circumstances, the management of “The One” is expecting safety stock reduction in the order of 17.7 – 33.9% (Table 1).

Table 1 Summary of average SME and RMSE values after applying ADIDA

Product Type	Forecasting Method	MSE	RMSE	% SS Reduction
A	Before: Simple Exponential Smoothing	211.43	14.54	22.07
	After: Moving Averages	128.42	11.33	
B	Before: Simple Exponential Smoothing	44.40	6.67	17.69
	After: Moving Averages	30.19	5.49	
C	Before: Simple Exponential Smoothing	5.99	2.45	33.87
	After: Croston	2.61	1.62	

5. Conclusions and recommendations

The level of competitiveness of the retailing sector is dependent on the level of product availability at the store. Under these circumstances, the effectiveness with which inventory management is performed becomes very important. Too much is expensive, and too little implies the appearance of more frequent stockouts. An important factor that impacts significantly inventory management is forecasting accuracy.

The case of study treated in this paper deals with the improvement of the level of precision of demand forecasting at the store level. The company was dealing with the problem of having excessive level of inventories in its stores in terms of days of inventory. An exhaustive analysis of the contribution to this excess was developed and found that forecasting performance for inventory management purposes could be improved. Thus, an initiative based on the application of the ADIDA (Nikolopoulos et al., 2011) methodology could be implemented for these purposes. The impact expected with the full implementation of the previous initiative is a safety stock reduction in the order of 17.7 – 33.9%. Given these expected results, “The One” management decided to pursue full implementation during year 2018.

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