



## Erratum to: “A sustainable EOQ model: Theoretical formulation and applications” [Int. J. Prod. Econ. 149 2014 145–153]

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### Abstract:

In this erratum, we correct a typo in the formulations, due to the omission of one parameter, that appears in our paper “A sustainable EOQ model: Theoretical formulation and applications” (Battini, D., Persona, A., Sgarbossa, F., 2014).

### Erratum

In the paper (Battini, D., Persona, A., Sgarbossa, F., 2014), equation (6) presents one typo, since the parameter  $b$  (space occupied by a product unit [m<sup>3</sup>/unit]) is omitted.

The correct equation (6) and related equations (10)–(12) are as follows:

$$C_{t-int}(Q, d_j, S_j)_j = \left[ c_{int-f,j} * d_j * \sum_i n_i + (c_{int-v,j} * d_j) * b * \frac{Q}{S_j} \right] * \frac{D}{Q} \quad (6)$$

$$C_{t-int}(Q, d_j, S_j)_j = \left[ c_{int-f,j} * d_j * \sum_i n_i + (c_{int-v,j} * d_j) * b * DP_k \right] * \frac{D}{Q} \quad (10)$$

$$C(Q) = p * D + \frac{D}{Q} * O + \frac{Q}{2} * h + \frac{Q}{2} * (p - p') * \beta + \left[ \sum_j \left( c_{int-f,j} * d_j * \sum_i n_i + c_{int-v,j} * d_j * b * DP_k \right) \right] * \frac{D}{Q} \quad (11)$$

$$Q^{k*} = \sqrt{\frac{2 * \left\{ D * O + \left[ \sum_j \left( c_{int-f,j} * d_j * \sum_i n_i + c_{int-v,j} * d_j * b * DP_k \right) \right] * D \right\}}{h + \beta * (p - p')}} \quad (12)$$

This typo about the parameter  $b$  is also in equation, based on the same approach of equations (6) and (10). The correct equation (18) and related equations (19)–(21) will be:

$$C_{t-ext}(Q, d_j, S_j)_j = \left[ c_{ext-f,j} * d_j * \sum_i n_i + (c_{ext-v,j} * d_j) * b * DP_k \right] * \frac{D}{Q} \quad (18)$$

$$C_t^*(Q) = \left\{ \sum_j \left[ (c_{int-f,j} + c_{ext-f,j}) * d_j * \sum_i n_i + (c_{int-v,j} + c_{ext-v,j}) * b * d_j * DP_k \right] \right\} * \frac{D}{Q} \quad (19)$$

$$C_s(Q) = p * D + \frac{D}{Q} * O + \frac{Q}{2} * (h + c_{eh} * b) + \frac{Q}{2} * \beta * [(p - p') + a * c_{eo}] + \left\{ \sum_j \left[ (c_{int-f,j} + c_{ext-f,j}) * d_j * \sum_i n_i + (c_{int-v,j} + c_{ext-v,j}) * b * d_j * DP_k \right] \right\} * \frac{D}{Q} \quad (20)$$

$$Q_s^{k*} = \sqrt{\frac{2 * \left\{ D * O + \left\{ \sum_j \left[ (c_{int-f,j} + c_{ext-f,j}) * d_j * \sum_i n_i + (c_{int-v,j} + c_{ext-v,j}) * b * d_j * DP_k \right] \right\} * D \right\}}{(h + c_{eh} * b) + \beta * [(p - p') + a * c_{eo}]} \quad (21)$$

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Finally, we would like to take this opportunity also to inform the reader that there are other small typos, due to the copy and paste of values formatting table 4 of Battini et al. (2014). These typos are not related to the previous omission of the parameter  $b$ . The correct value of the  $C(EOQ)$  in Case 2 is 417,336.47 instead of 419,719.47, the correct value of  $C(S-EOQ)$  is 418,990.90 instead of 421,367.07 and the internal transportation cost is 7530.59 instead of 9910.59. As a consequence, also Fig. 5 at Battini et al. (2014), representing these values, will be slightly different.

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#### **Reference**

Battini, D., Persona, A., & Sgarbossa, F. (2014). A sustainable EOQ model: Theoretical formulation and applications. *International Journal of Production Economics*, 149, 145-153.