$$
\begin{aligned}
&-\sum_{m=1}^{2}\frac{c_{2m}}{R_m}\left[e^{-R_m(K_j+j-1)H/n}-e^{-R_m jH/n}\right]\\
&\times\left[a+\frac{b(K_j+j-1)H}{n}\right]\frac{H}{n}\\
&+p\left[e^{-K_j\theta H/n-R_2(j-1)H/n}-e^{-R_2 jH/n}\right]\\
&\times\left[a+\frac{b(K_j+j-1)H}{n}\right]\frac{H}{n}\\
&=0,\qquad j=1,2,\ldots,n-1
\end{aligned}
\tag{5}
$$

On rearranging the terms in (5) it becomes

$$
\begin{aligned}
&\sum_{m=1}^{2}\frac{c_{1m}}{\theta+R_m}\left[e^{K_j\theta H/n}-e^{-R_mK_jH/n}\right]e^{-R_m(j-1)H/n}\\
&-\sum_{m=1}^{2}\frac{c_{2m}}{R_m}\left[e^{-R_mK_jH/n}-e^{-R_mH/n}\right]e^{-R_m(j-1)H/n}\\
&+p\left[e^{K_j\theta H/n}-e^{-R_2H/n}\right]e^{-R_2(j-1)H/n}\\
&=0,\quad j=1,2,\ldots,n-1
\end{aligned}
\tag{6}
$$

Here, we find that the necessary conditions are independent and will yield a unique solution for K_j if $p\leqslant c_{22}/R_2$. Also, the optimal value of K_j does not depend on the demand function parameters. Since

$$
\begin{aligned}
\left.\frac{\partial^2 TC(n,K_j)}{\partial K_j^2}\right|_{K_j=K_j^*}&=\sum_{m=1}^{2}\frac{c_{1m}}{\theta+R_m}\left[\theta\frac{H}{n}e^{K_j^*\theta H/n-R_m(j-1)H/n}\right.\\
&\left.+R_m\frac{H}{n}e^{-R_m(K_j^*+j-1)H/n}\right]\left[a+\frac{b(K_j^*+j-1)H}{n}\right]\frac{H}{n}\\
&+\sum_{m=1}^{2}c_{2m}e^{-R_m(K_j^*+j-1)H/n}\left[a+\frac{b(K_j^*+j-1)H}{n}\right]\frac{H^2}{n^2}\\
&+p\theta\frac{H}{n}e^{K_j^*\theta H/n-R_2(j-1)H/n}\left[a+\frac{b(K_j^*+j-1)H}{n}\right]\frac{H}{n}>0
\end{aligned}
$$

and

$$
\frac{\partial^2 TC(n,K_j)}{\partial K_j\partial K_i}=0,\quad i\neq j,\quad i=1,2,\ldots,n-1,\quad j=1,2,\ldots,n-1
$$

then the Hessian matrix at the stationary point (K_1^*, $K_2^*,\ldots,K_{n-1}^*$), denoted by $\mathbf{K}^*$, is given by

$$
\mathbf{H}=\begin{bmatrix}
\frac{\partial^2 TC(n,K_j)}{\partial K_1^2} & 0 & 0 & 0\\
0 & \frac{\partial^2 TC(n,K_j)}{\partial K_2^2} & 0 & 0\\
\vdots & \vdots & \ddots & \vdots\\
0 & 0 & 0 & \frac{\partial^2 TC(n,K_j)}{\partial K_{n-1}^2}
\end{bmatrix}
$$

We can see that the diagonal elements of $\mathbf{H}$ are all positive and off-diagonal elements are all zero. Clearly the principal minor determinants of the Hessian matrix at point $\mathbf{K}^*$ are all positive. Thus, the Hessian matrix at point $\mathbf{K}^*$ is positive-definite and $\mathbf{K}^*$ represents a global minimum point.

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Authors' response

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The authors are thankful to Professor Chung-Yuan Dye, Shu-Te University for pointing out the unfortunate error in deriving the necessary condition (Equation (10)) for $TC(n,K)$ to be minimum. There is no doubt that this error leads to inappropriate criteria for the existence and uniqueness of the optimal solution. However, the numerical example explores that the error in Equation (10) does not make any significant change in the percentage of cost savings in the proposed model over Bose, Goswami and Chaudhuri' model, as the correct values of n^*, K^* and $TC(n^*,K^*)$ are obtained as 13, 0.491043 and 17219.06, respectively.

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Comment on Carter M and Guthrie G (2004). Cricket interruptus: fairness and incentive in limited overs cricket matches

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Introduction

In their paper, Carter and Guthrie[1] have addressed the issue of creating a fair method of target resetting in one-day cricket. Their approach views the issue from a completely different perspective from that of ourselves when we created the Duckworth/Lewis (D/L) method, which has now become the international standard.[2,3]

We have several issues to discuss that arise from our differing perceptions of the appropriate measure of fairness