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Erratum: Complete Convergence Theorems for Extended Negatively Dependent Random Variables, By Tien-Chung Hu, Andrew Rosalsky, and Kuo-Lung Wang, *Sankhyā* Series A, Vol. 77, Part 1, 1-29, 2015

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Professor Xuejun Wang (School of Mathematical Sciences, Anhui University, Hefei, People's Republic of China) has so kindly pointed out to us that there is an error in the proof of Corollary 4.5 of our article. The proof that we presented is valid for $1 \le p \le 2$ but not for $0 < p < 1$. In this erratum, a valid proof is given for $0 < p < 1$. We use the same notation and we refer to the same display numbers and results which are in our article.

Proof of Corollary 4.5 when $0 < p < 1$

Conditions (3.13) and (3.11) (which do not involve p) of Theorem 3.2 have been verified in the valid portion of our argument. Thus we only need to verify condition (3.12) of Theorem 3.2 assuming that

$$E|X|^p < \infty \text{ and } \sum_{i=1}^{k_n} |a_{ni}|^p = O(n^{-\gamma}) \text{ for some } 0 < p < 1 \text{ and some } \gamma > 0. \qquad (*)$$

To this end, taking $J = r/\gamma$, we have

$$\sum_{n=1}^{\infty} n^{r-2} \Big(\sum_{i=1}^{k_n} E|a_{ni}X_{ni}I(|a_{ni}X_{ni}| \le 1) - E(a_{ni}X_{ni}I(|a_{ni}X_{ni}| \le 1))| \Big)^J$$

$$\leq C\sum_{n=1}^{\infty} n^{r-2}\Big(\sum_{i=1}^{k_n} E|a_{ni}X_{ni}I(|a_{ni}X_{ni}| \leq 1)|\Big)^J$$

$$\leq C\sum_{n=1}^{\infty} n^{r-2}\Big(\sum_{i=1}^{k_n} E(|a_{ni}X_{ni}|^p I(|a_{ni}X_{ni}| \leq 1))\Big)^J \text{ (since } 0 < p < 1)$$

$$\leq C\sum_{n=1}^{\infty} n^{r-2}\Big(\sum_{i=1}^{k_n} |a_{ni}|^p E|X_{ni}|^p\Big)^J$$

$$\leq C\sum_{n=1}^{\infty} n^{r-2}\Big(\sum_{i=1}^{k_n} |a_{ni}|^p E|X|^p\Big)^J \text{ (by Lemma 4.2)}$$

$$\leq C\sum_{n=1}^{\infty} n^{r-2-\gamma J} \text{ (by } (*))$$

$$= C\sum_{n=1}^{\infty} n^{-2} < \infty.$$

Hence we have verified that condition (3.12) of Theorem 3.2 holds with $p = \delta_1 = 1$ where the chosen p in condition (3.12) of Theorem 3.2 is of course different from the p in $(*)$ which is in (0,1). This completes the proof.

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References

HU, T.-C., ROSALSKY, A. and WANG, K.-L. (2015). Complete convergence theorems for extended negatively dependent random variables. *Sankhyā Ser. A* **77**, 1-29.

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