4.2. Pattern Evaluation: Interestingness Measures: Lift and χ2 In-Lecture Question

Question

Suppose we have the transaction history of Apple(A) and Banana(B) from a grocery store, as shown in the table with the expected number in parenthesis.

Which of the following statements is correct?

- ❑ Lift > 1; $\chi^2 > 0$;
- ❑ Lift > 1; $\chi^2 < 0$;
- ❑ Lift < 1; $\chi^2 > 0$;
- ❑ Lift < 1; $\chi^2 < 0$;

	Apple	¬Apple
Banana	50 (57)	200 (192)
¬Banana	750 (742)	2500 (2507)

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- ❏ **Answer:** Lift < 1; $\chi^2 > 0$;
- ❏ **Explanation:** Since the number of transactions (50) with both Apple and Banana is smaller than the expected number (57), items Apple and Banana are negatively correlated, thus Lift < 1. $\chi^2 > 0$ as long that the items of interest are correlated.