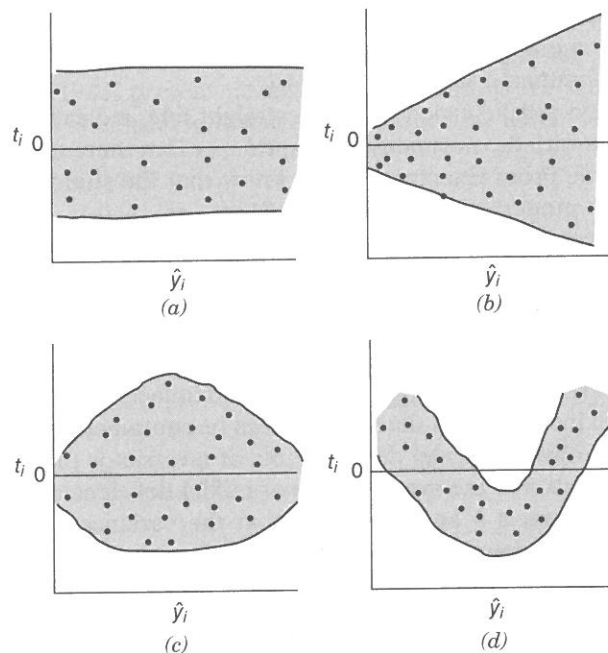**Figure 4.4**   Normal probability plot of the externally studentized residuals for the delivery time data.

Figure 4.5   Patterns for residual plots: (*a*) satisfactory; (*b*) funnel; (*c*) double bow; (*d*) nonlinear.

be necessary. Transformations on the regressor and/or the response variable may also be helpful in these cases.

A plot of the residuals against $\hat{y}_i$ may also reveal one or more unusually large residuals. These points are, of course, potential outliers. Large residuals that occur at the extreme $\hat{y}_i$ values could also indicate that either the variance is not constant or the true relationship between y and x is not linear. These possibilities should be investigated before the points are considered outliers.