Name of the variables in the new dataset including the new variable “cru”:

"id" "time" "cats" "normal" "poisson" "gauss" "cru"

The first 6 lines of the new dataest (to see the new variable has been added):

	id	time	cats	normal	poisson	gauss	cru
1	1	1	one	6.4588697	4	16.68075	17.54552
2	2	1	two	-0.8660723	2	17.51865	27.71607
3	3	1	two	2.3198307	3	20.50240	22.13241
4	4	1	two	2.2171485	3	12.41370	32.99888
5	5	1	three	10.9997781	5	25.79190	36.88954
6	6	1	two	-10.9134104	3	20.22173	38.32631

==========

Now form a linear mixed-effects model, considering “cru” as the response variable with normal(overall mean=24, stddev=10) distribution, “time” as the categorical fixed effect with three levels, and “id” as the random effect; Using “lme” function in R. The model is: “cru~factor(time)-1, random=~1|id” (by -1 we omit the intercept of the fixed effect)

Random effects:
 Formula: ~1 | id
        (Intercept) Residual
StdDev: 0.5863116 9.984779

Fixed effects: cru ~ factor(time) - 1
                 Value Std.Error   DF   t-value
factor(time)1 33.04563 0.03162903 199998 1044.7880
factor(time)2 33.99974 0.03162903 199998 1074.9537
factor(time)3 5.06031 0.03162903 199998 159.9894
              p-value
factor(time)1   0
factor(time)2   0
factor(time)3   0

CINCLUSION

P-values are all zero.
Specifically, the third level of “time” has the estimated regression coefficient equals to 5.06031 in this linear model considering “id” as

the random effect, which is far from the other two estimated coefficients corresponding time=1 and 2;
its p-value equals to zero, so there is a significant linear relationship between level 3 of time and “cru” when “id” is treated as a random effect.