This formula is formed on the basis that you can compare the cost of supporting an army to the cost of building one and that the market accurately reflects the demand of each resource.

I formed an equation to compare the efficiency ratios of building an army to killing armies.

This is the efficiency ratio of building for prestige:

$$\frac{\text{(Pres gained from building)}}{\text{(cost to build the army)}}$$

This is the efficiency ratio of hitting for pres:

$$\frac{\text{(pres gained from killing)}}{\text{(cost to maintain army)}}$$

If killing is a more efficient method of gaining pres, then

$$\frac{\text{(killing pres)}}{\text{(upkeep)}} \text{ would have to be } > \frac{\text{(building pres)}}{\text{(building costs)}}$$

or:

$$\text{killing pres} > \frac{\text{(upkeep)*(building pres)}}{\text{(building costs)}}$$

Here is a list of the variables in the equation.

a=amount of inf in the army
b=amount of cav
c=amount of arch
d=amount of cats
f=price of wood
g=price of stone
h=price of iron
j=price of crop
v=total maximum crop production from your cities per hour
w=level
P=pres needed to hit daily to make hitting and maintaining the army more efficient than starving and building

So based on the previous part, the equation to show if the ratios are equal or not is as follows:

$$\frac{P}{(24j(a+4b+2c+10d-v)} =$$

$$\frac{(440a+1940b+960c+3820d)/300)(1-w/30)}{(a(120f+100g+180h+40j)+b(440f+550g+750h+200j)+c(310f+250g+320h+80j)+d(1800f+780g+990h+250j)}$$

Therefore,

P=

$$\frac{(24j(a+4b+2c+10d-v)((440a+1940b+960c+3820d)/300)(1-w/30))}{(a(120f+100g+180h+40j)+b(440f+550g+750h+200j)+c(310f+250g+320h+80j)+d(1800f+780g+990h+250j)}$$

Or in a different form

P=

$$\frac{(24j(a+4b+2c+10d-v)((440a+1940b+960c+3820d)/300)(1-w/30))}{f(120a+440b+310c+1800d)+g(100a+550b+250c+780d)+h(180a+750b+320c+990d)+j(40a+200b+80c+250d)}$$

In Server 606, the resource prices are

wood: 0.06

stone: 0.02

iron: 0.05

crop: 0.09

so the numbers look a bit lengthier

P=

$$\frac{(24j(a+4b+2c+10d-v)((440a+1940b+960c+3820d)/300)(1-w/30))}{(0.06(120a+440b+310c+1800d)+0.02(100a+550b+250c+780d)+0.05(180a+750b+320c+990d)+0.09(40a+200b+80c+250d)}$$

and a little bit cleaner, thanks to online expression shorteners.

$$P=\frac{24j(a+4b+2c+10d-v)((440a+1940b+960c+3820d)/300)(1-w/30)}{21.8a+92.9b+46.8c+195.6d}$$

Let's model a few armies in the young server of 606 for a lv 14 player with lv 15 crop in all cities. Remember, P= the amount of pres gained from hits needed in order for killing to be a more efficient method of gaining pres.

60k cav (either spending their whole lives working or their whole lives not)

$$P=\frac{24*0.09*(4*60{,}000-20{,}480)((1940*60{,}000)/300)(1-14/30))}{929*60{,}000}$$

P=17,603

10k cav, 15k arch, 3k cat

$$P=\frac{((24*0.09(4*10{,}000+2*15{,}000+10*2000-20480))((1940*10000+960*2000+3820*2000)/300)(1-14/30))}{(92.9*10000+46.8*15000+195.6*3000)}$$

P=3,486

0/18k/0/5k

P=7,946

0/13000/0/1600

P=3759

12000/11000/10000/1700

P=5,708

So as you can see, it is pretty easy to meet the daily efficiency requirement. This would probably be more useful if a player was on vacation, on crunch time for a product, or was studying for his/her finals. Any time a person wouldn't be able to get many hits, this would be the equation to tell him/her whether or not they should just starve their army in favor of rebuilding for prestige. There are probably a lot more variable to take into account, but the equation is so large that it would be impractical to implement anyway. However, this equation holds much potential for theory, as we have just demonstrated the ease of reaching the efficiency requirement.