

Based on the above It appears that Warrior Dark Knight composition is taking the most damage overall. Also Warrior Paladin and Paladin Dark Knight appear to be nearly identical in terms of 5 number summary (included below).

Based on z-scores and boxplots, I do not think the data sets contain outliers.

Summary statistics for Net Damage:

Group by: Comp

Comp	Mean	Std. dev.	Median	Min	Max	Q1	Q3
PD	926100.2	73598.496	943501	772400	1008400	877700	986700
WD	997655.1	55195.143	1003400	890300	1075500	964825	1042700
WP	922683.8	72414.664	925600	775027	1003200	880200	984436

Warrior Dark Knight data appears to have lower variation than the other tanking compositions, but are within the acceptable limits for ANOVA.

Ranking the medians:

WD - 100

PD - 94

WP - 92

Analysis of Variance results:

Responses: Net Damage

Factors: Comp

Response statistics by factor

Comp	n	Mean	Std. Dev.	Std. Error
PD	10	926100.2	73598.496	23273.888
WD	10	997655.1	55195.143	17454.237
WP	10	922683.8	72414.664	22899.527

ANOVA table

Source	DF	SS	MS	F-Stat	P-value
Comp	2	3.5841571e10	1.7920786e10	3.9222195	0.032
Error	27	1.2336413e11	4.569042e9		
Total	29	1.592057e11			

Based on this, we can reject the hypothesis average total damage taken is the same for all tanking compositions.

I conclude that at least one of the means is different. In particular Warrior Dark Knight appears to be taking more damage on average than the other tanking compositions.

Simple linear regression results:

Dependent Variable: Net Damage

Independent Variable: Total Defensives

Net Damage = 1072619.2 - 7311.3906 Total Defensives

Sample size: 30

R (correlation coefficient) = -0.63207676

R-sq = 0.39952103

Estimate of error standard deviation: 58431.791

Parameter estimates:

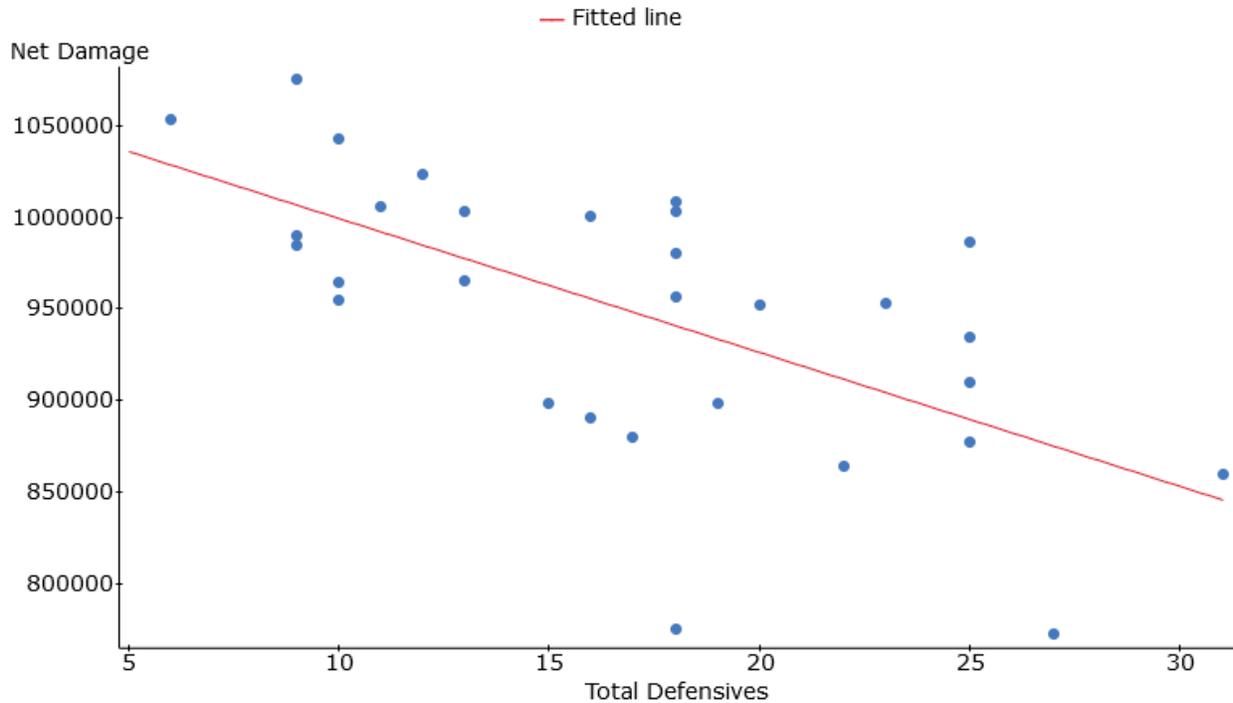
Parameter	Estimate	Std. Err.	Alternative	DF	T-Stat	P-value
Intercept	1072619.2	30603.784	≠ 0	28	35.048583	<0.0001
Slope	-7311.3906	1693.9479	≠ 0	28	-4.3161838	0.0002

Analysis of variance table for regression model:

Source	DF	SS	MS	F-stat	P-value
Model	1	6.3606027e10	6.3606027e10	18.629443	0.0002
Error	28	9.5599678e10	3.4142742e9		
Total	29	1.592057e11			

Simple linear regression was performed to determine if the amount of mitigation used correlated with the total amount of damage taken. I conclude the correlation is significant, and explains approximately 40% of the total variation seen within the collected data. The slope of the line suggests each additional mitigation reduces the damage taken by -7311 total damage. Though the intercept reached significance, I believe the parameters under which the data was collected prohibits the interpretation of this as a true maximum amount of damage taken, as one group did exceed this, and there are no data points which had 0 mitigation used.

Below we look at our scatterplot and regression line



Regression line appears to fit the data well, with potentially 2 outliers.

Residuals appear to be randomly distributed around 0 with no obvious patterns.

Given the above data I performed tests to see if the total amount of mitigation used was significantly different based on composition.

Analysis of Variance results:

Responses: Total Defensives

Factors: Comp

Response statistics by factor

Comp	n	Mean	Std. Dev.	Std. Error
PD	10	23.5	4.3269183	1.3682917
WD	10	11.3	3.0930029	0.97809338
WP	10	16	4.4472214	1.4063349

ANOVA table

Source	DF	SS	MS	F-Stat	P-value
Comp	2	757.26667	378.63333	23.631761	<0.0001
Error	27	432.6	16.022222		
Total	29	1189.8667			

I conclude that there is a significant difference between the average use of defensive cooldowns between the groupings, and it appears Warrior Dark Knight composition is not using defensive cooldowns as frequently as the other tanking compositions.

To be clear, it is not clear at this moment if this difference in mitigation is because mitigation is lacking in this pair, or because players are not using their mitigation.

Regression on total mitigation used as a predictor for total damage taken restricted to tank compositions was run, but did not reach a statistically significant level.

Further analysis/open questions: Small sample size may be to blame for the failure to find a significant results for warrior dark knight compositions, cooldown uptime should be a more important factor for damage reduction but such data was not collected, equally important to uptime is mitigation strategy and optimization which is also not a variable which was collected.