

## Methods

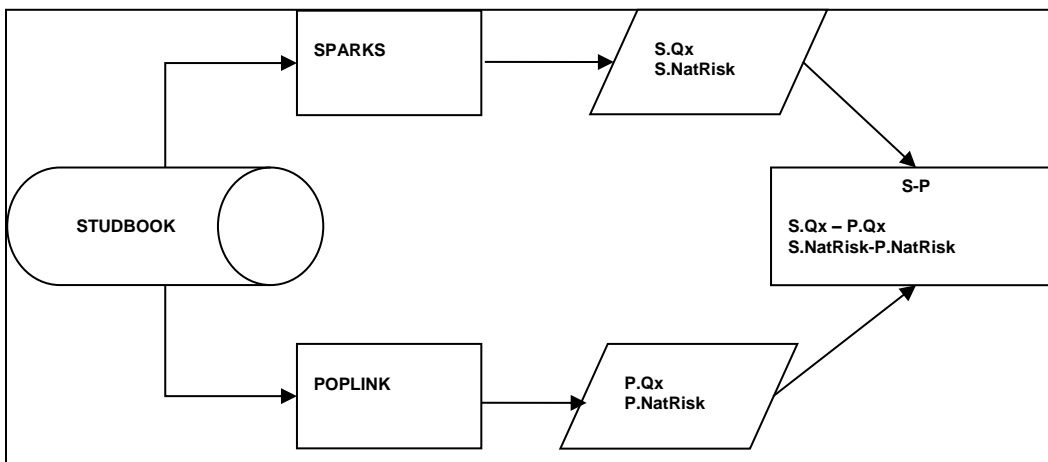
Charts presented in this report illustrate graphically the differences between the demographic variables *Qx* (age-specific mortality rate) and *NatRisk* (sample size that *Qx* rate was based on for a given age class) extracted from a common studbook by SPARKS and PopLink program applications. The difference variable (*S-P*) is given by subtraction of the respective variables: (SPARKS *Qx* - PopLink *Qx*) and (SPARKS *NatRisk* - PopLink *NatRisk*) at a common age class for both males and females of a selected species<sup>1</sup>.

### Extraction criteria

The same demographic extraction criteria were used for female and male species age groups from the identical SPARKS studbook: The extraction criteria are the time interval between 1/1/1980 and 1/1/2005 and the geographical region of North America.

### Data extraction techniques

Using PopLink, a SPARKS's studbook is exported using the criteria described above. From the Age-Based Life Table of the Analytical Report option, data is copied and pasted into an Excel worksheet. Using SPARKS, data is exported using criteria described above into a print-ready (prn) file. The prn file is opened in Notepad and from there data is copied and pasted into an adjoining section (SPARKS) of the same Excel worksheet. The analysis followed the pattern:



<sup>1</sup> Twenty-one species were selected. Difference data in a number of cases is not presented because of PopLink's extraction criteria. If certain "data quality criteria" are not met, PopLink will not extract the data.

**Spreadsheet Analysis**

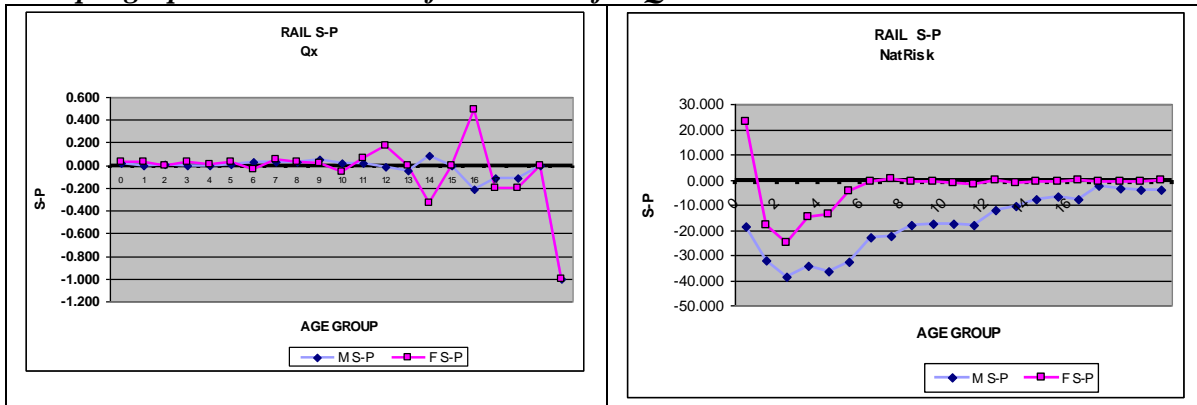
For each species a second tabbed worksheet was added to the same workbook. Into this worksheet specific data was copied from the original data worksheet for analysis. Data was copied in columnar form accordingly and the differences (S-P) between respective variables taken (see sample column headings below)

**Sample column headings of worksheet used for data analysis**

	PopLink	SPARKS	M S-P	PopLink	SPARKS	F S-P		PopLink	SPARKS	M S-P	PopLink	SPARKS	F S-P
Age	M Qx	M Qx	d	F Qx	F Qx	d		M NatRisk	M NatRisk	d	F NatRisk	F NatRisk	d

Using Excel’s charting tool, data was plotted for each variable with the y-axis S-P and the x-axis species age. Difference data (S-P,d) are plotted along a fixed Y-axis vector of zero, zero indicating no difference between the SPARKS and its comparable PopLink value for all age groups, X-axis (see sample figure below).

**Sample graphical illustration of S-P values for Qx and NatRisk**

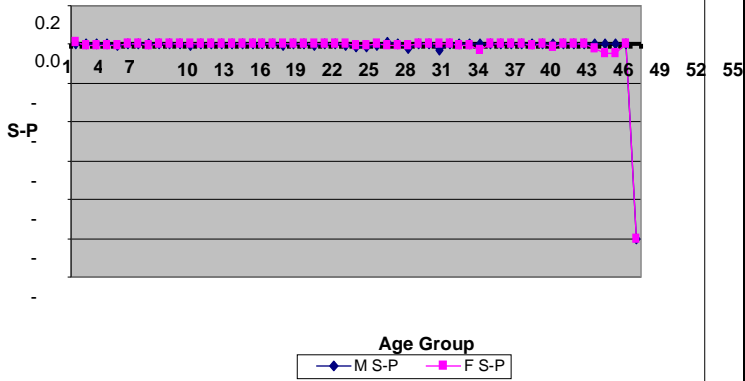


**What S-P means**

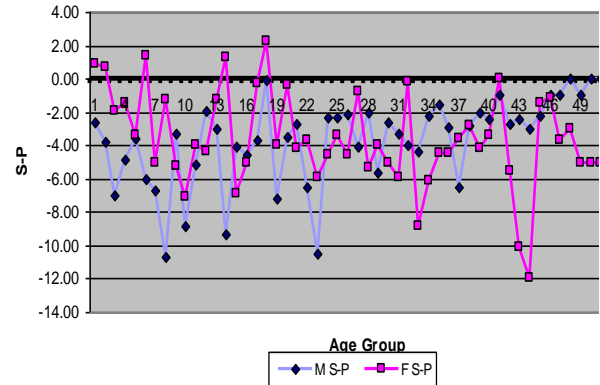
S-P is SPARKS extracted values minus comparable PopLink extracted values from a common studbook. On the assumption (null hypothesis) that both SPARKS and PopLink extract data resulting in identical values, we would expect Zero (0) deviation. Therefore, S-P deviations from zero would indicate that extraction algorithms from the respective processes are dissimilar enough to result in disparate results. Initial results of our analysis indicate apparent differences between the respective algorithm extraction techniques that result in dissimilar data. Further analysis needs be done to determine the extent (precision and accuracy) of the deviations in the respective extraction algorithms and how the deviations might effect interpretation of the data.

<b>Species S-P Graphs</b>	
<b>Qx S-P</b>	<b>N at Risk S-P</b>
<b>Gorilla</b>	

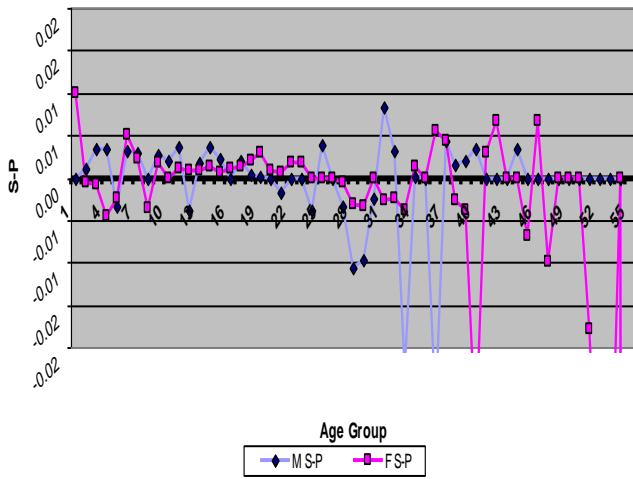
Gorr Qx



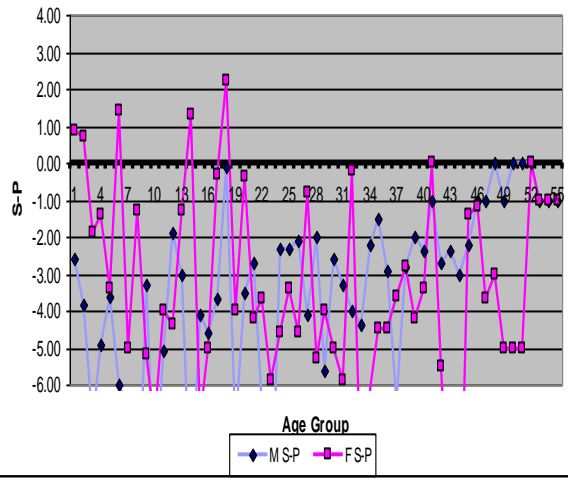
Gorr AT RISK S-P



Gorr Qx S-P

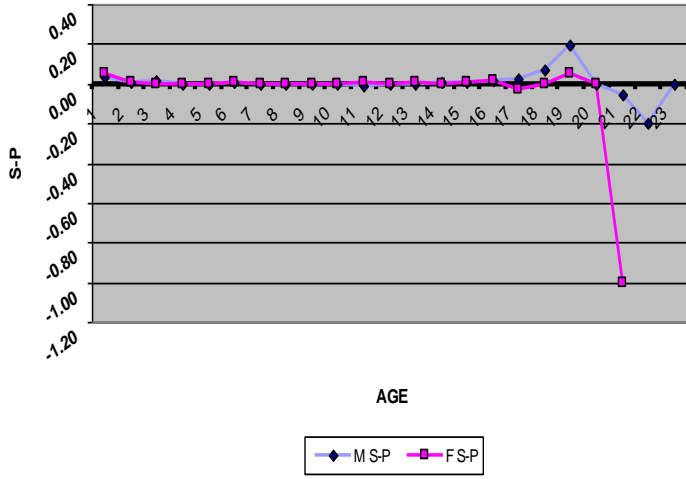


Gorr AT RISK S-P

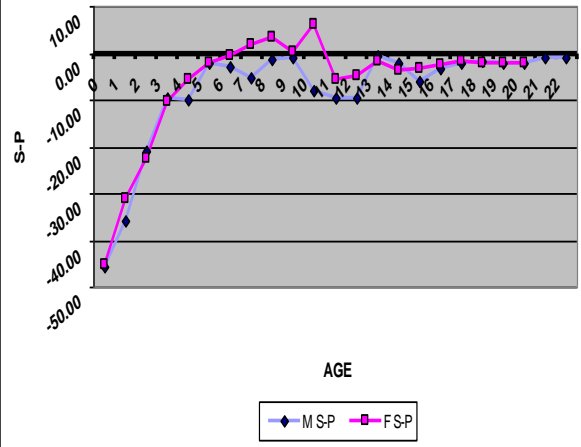


Cheeta

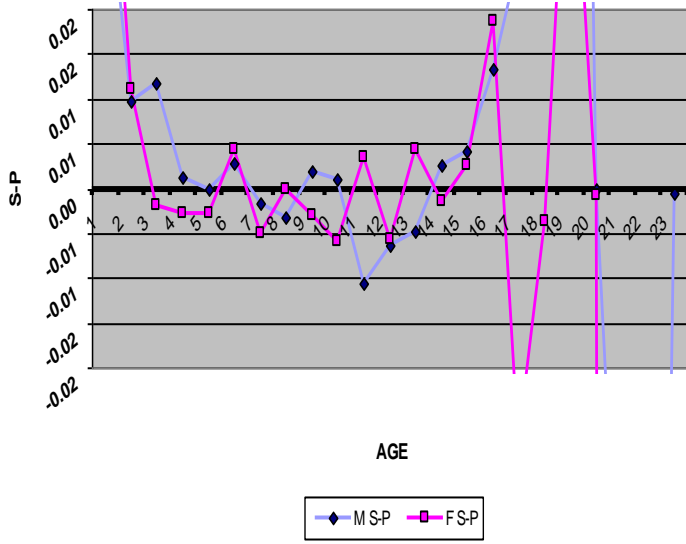
CHEETA S-P  
Qx



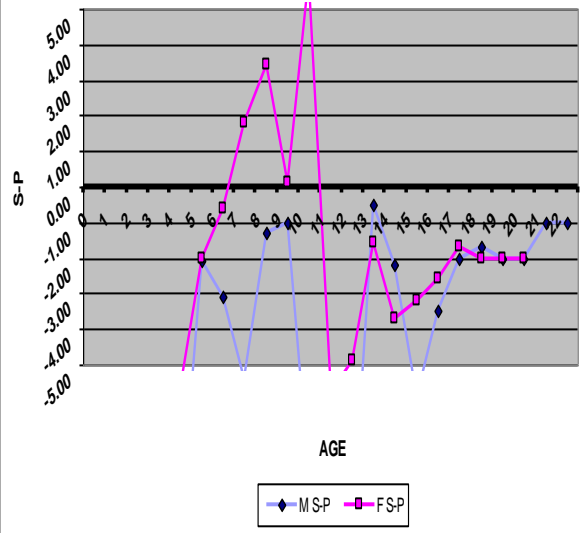
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NatRisk



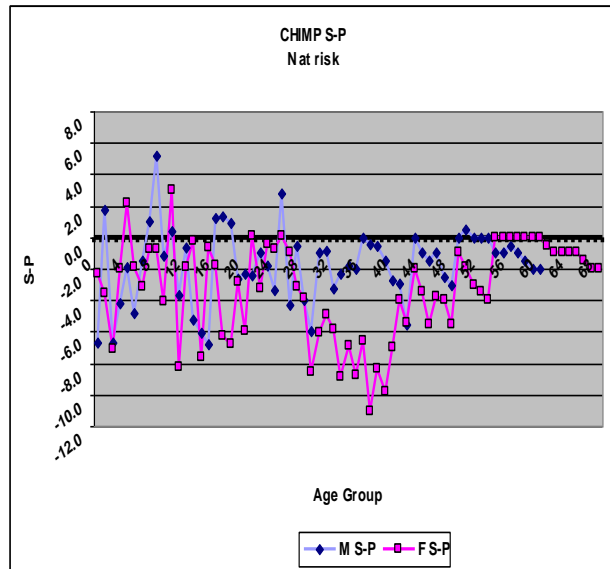
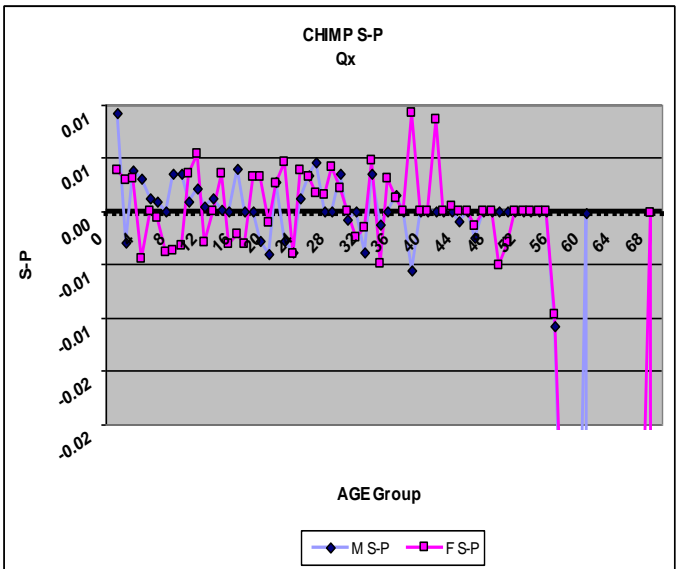
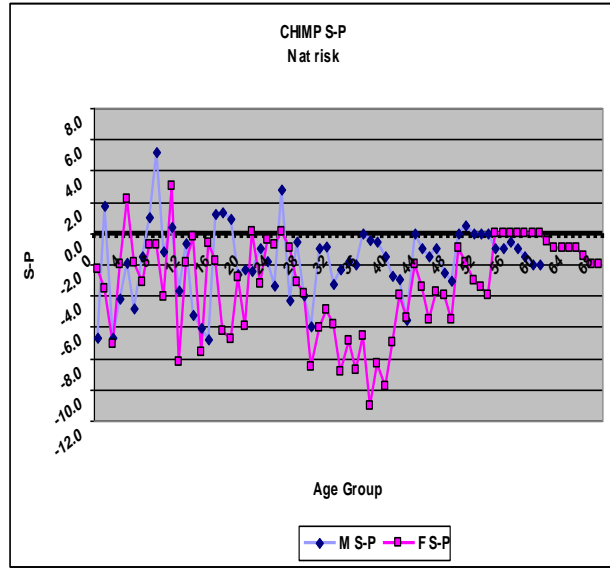
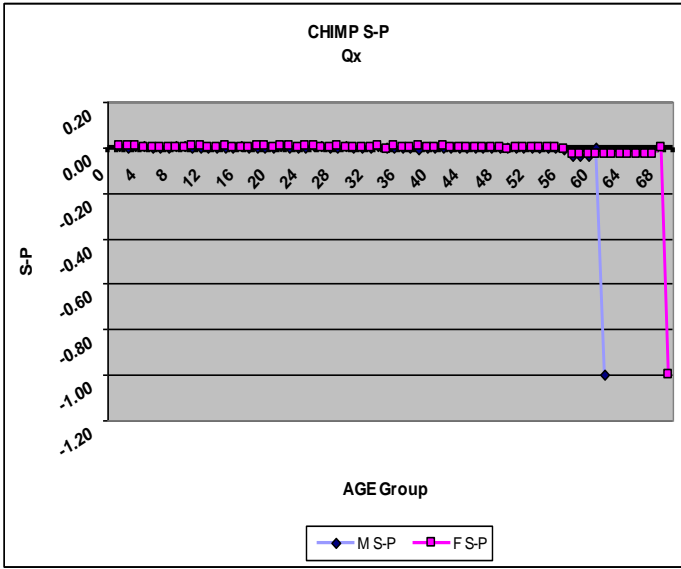
CHEETA S-P  
Qx



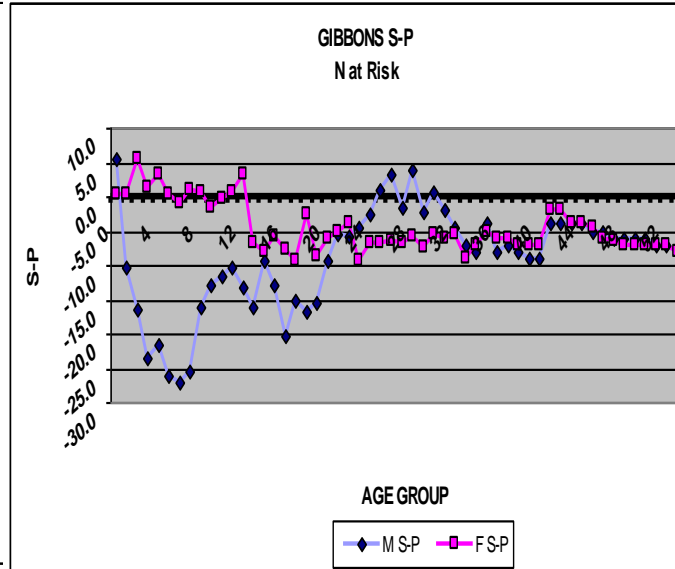
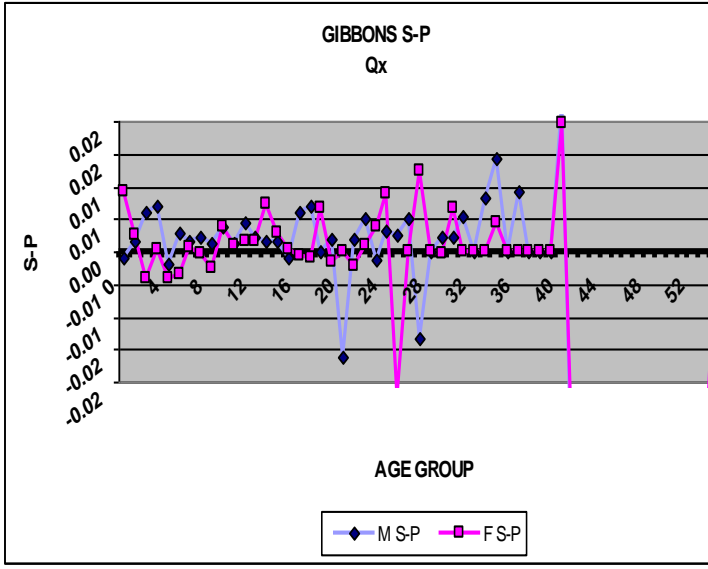
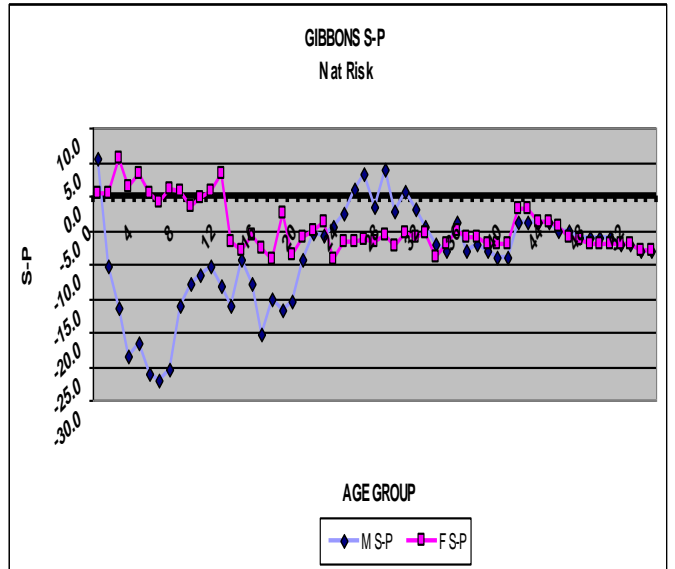
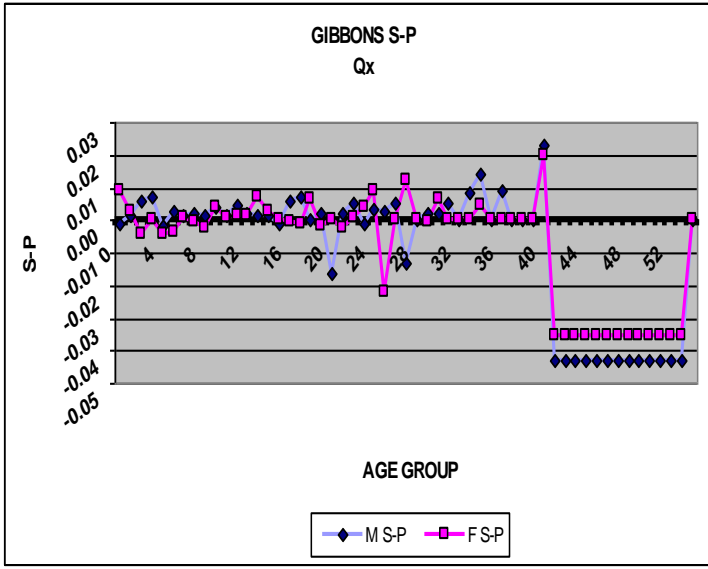
CHEETA S-P  
NatRisk



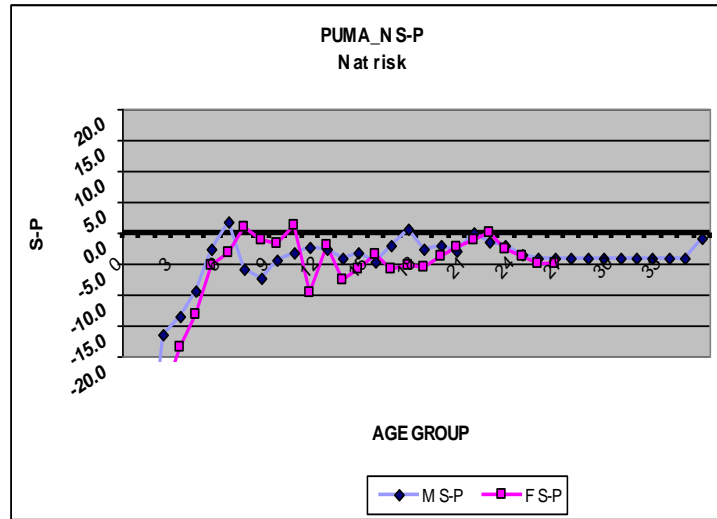
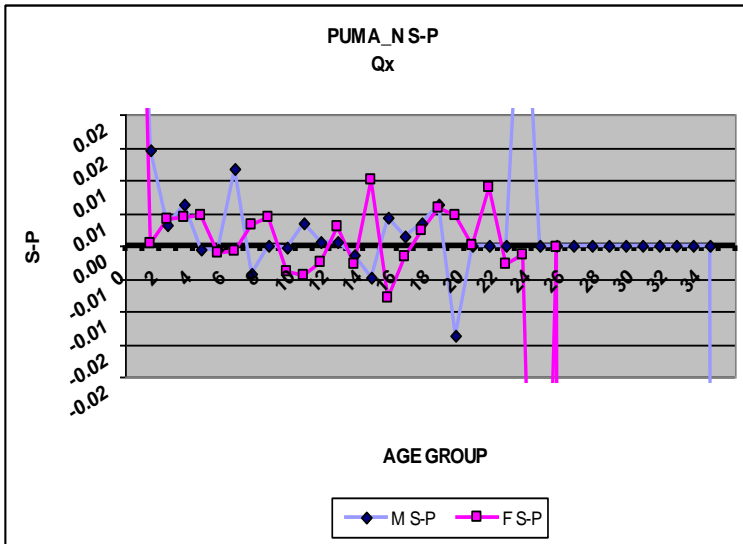
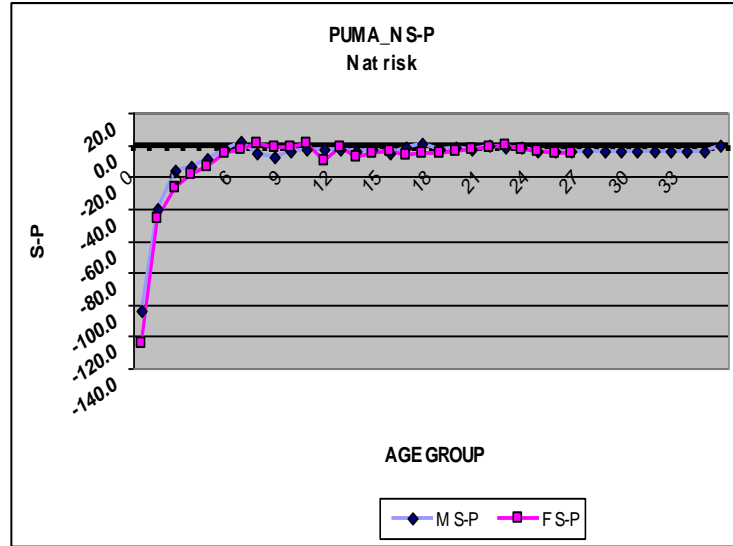
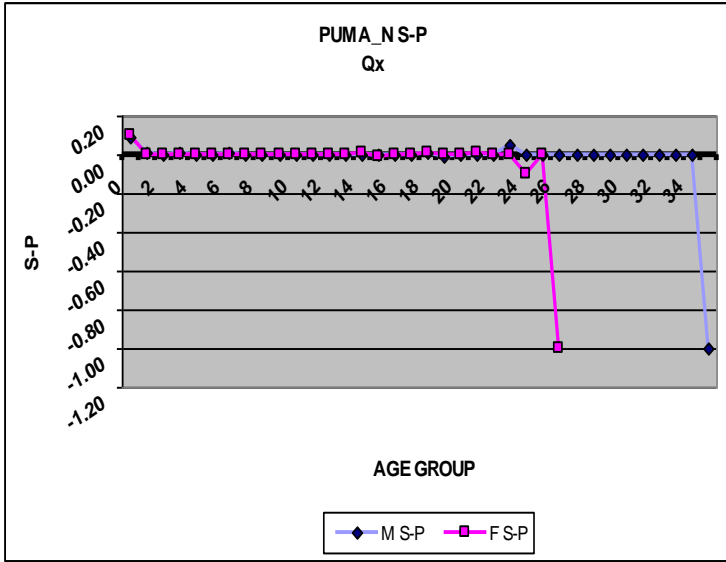
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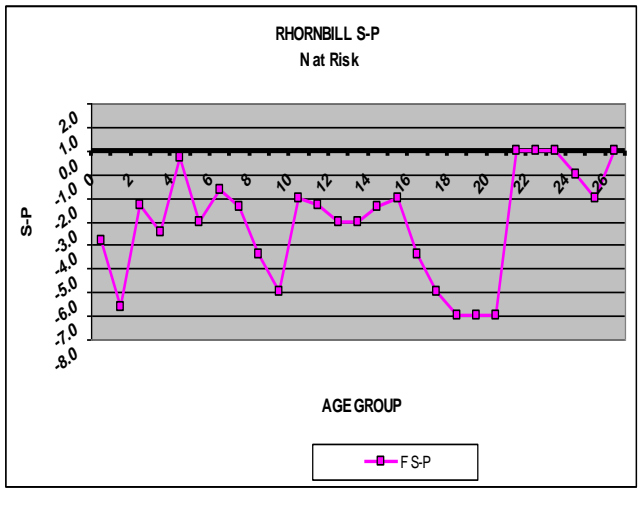
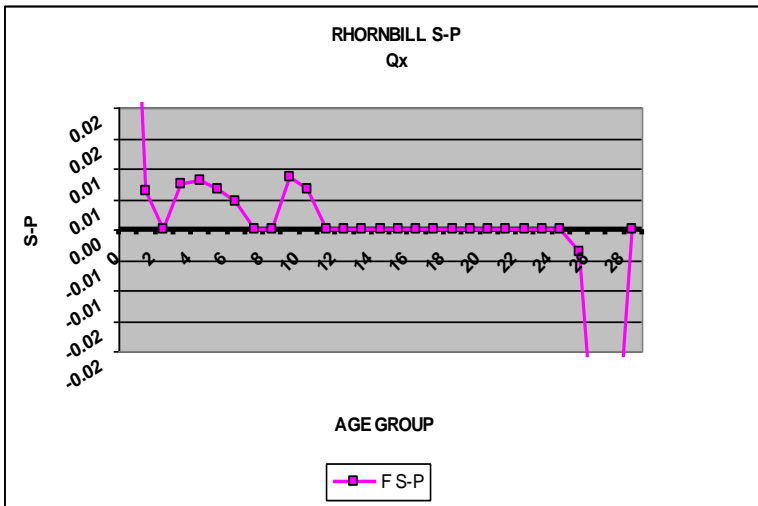
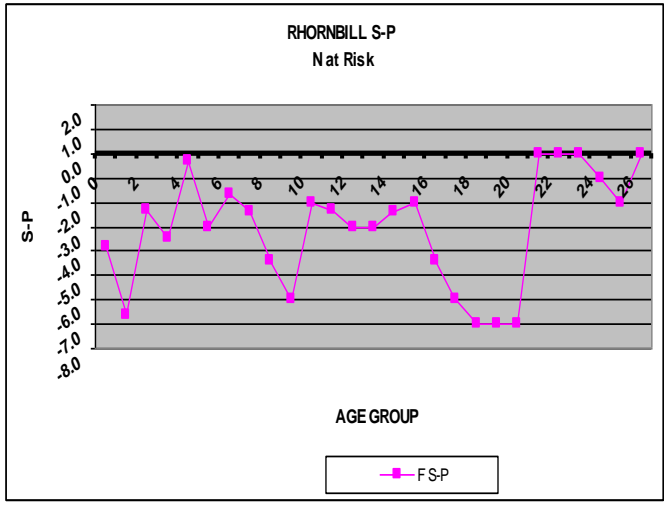
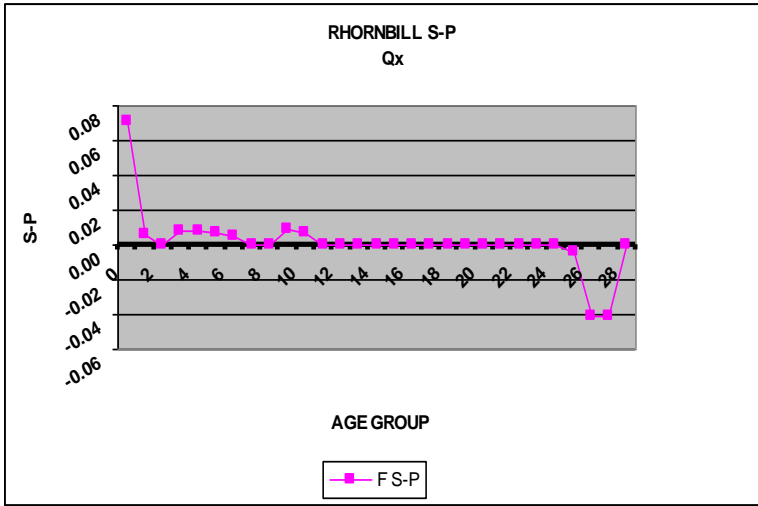
# Gibbons



# Puma

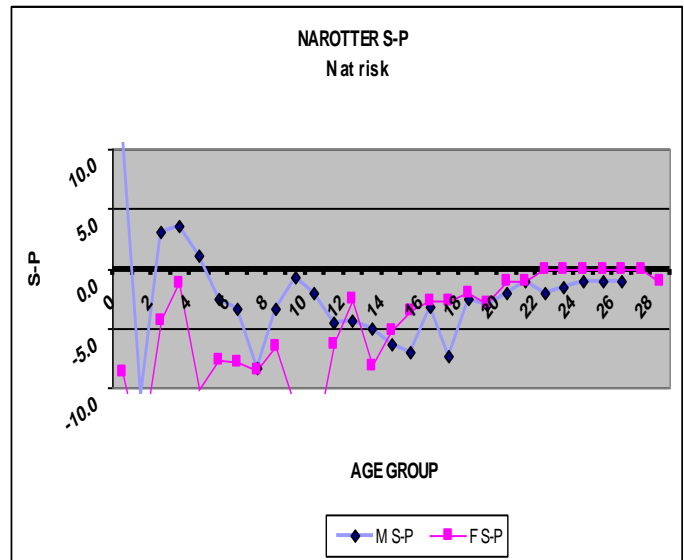
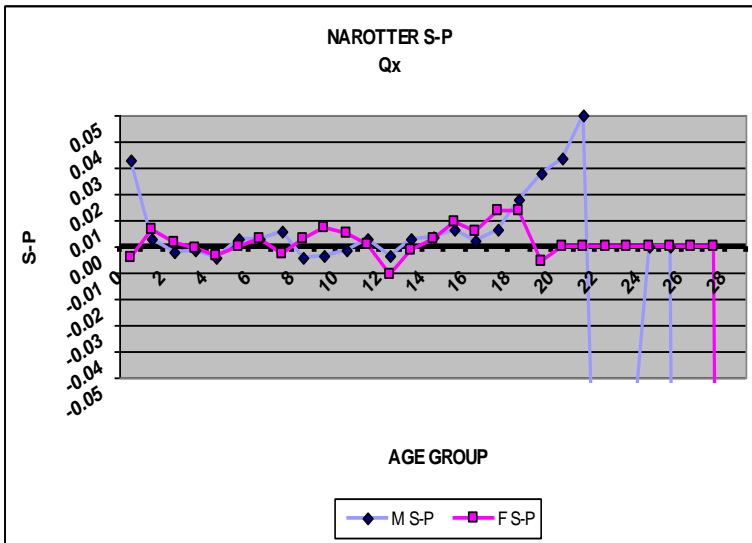
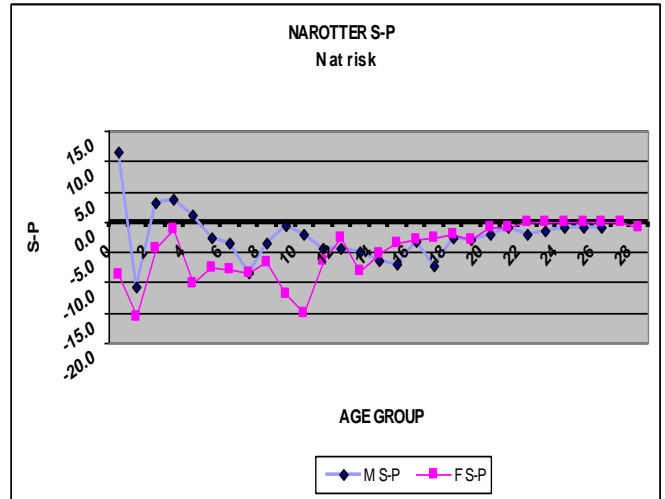
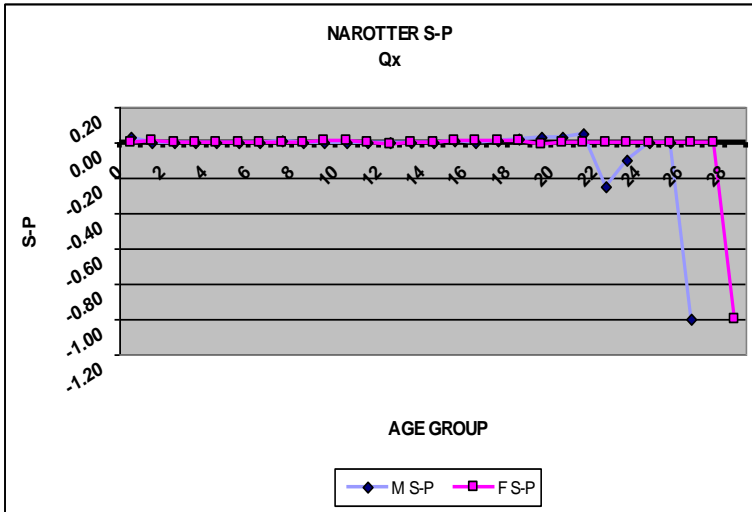


# RHornbill

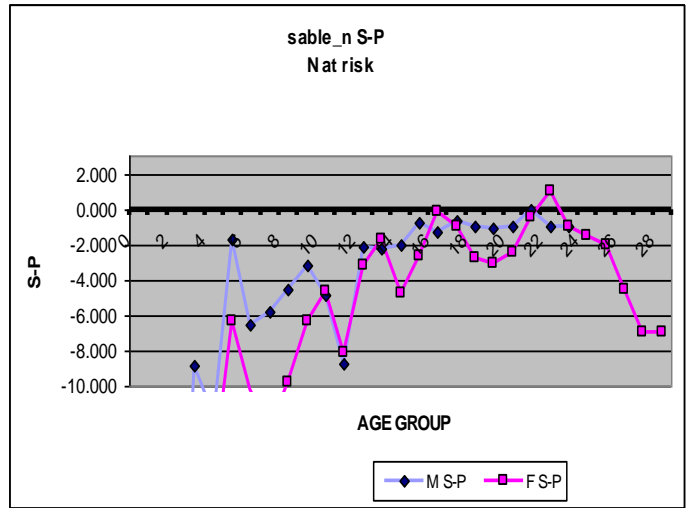
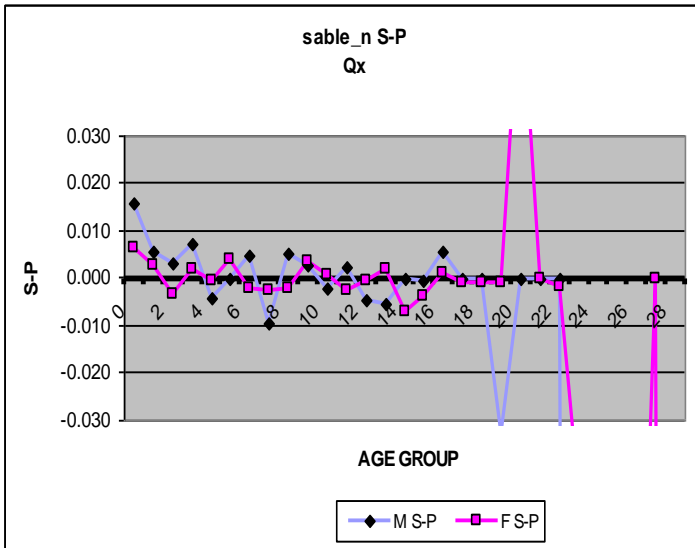
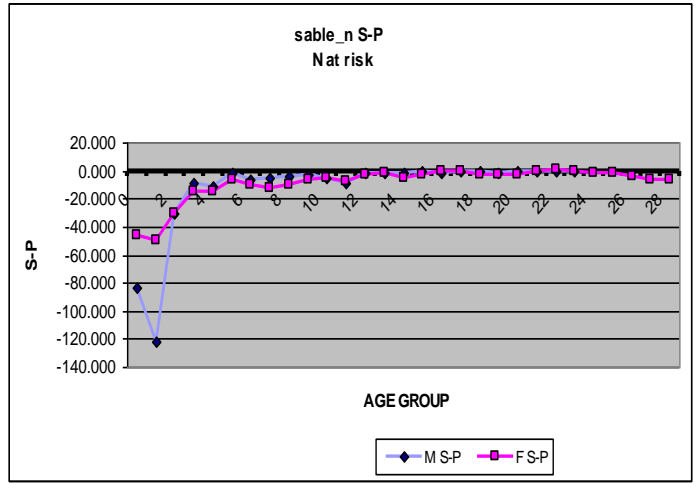
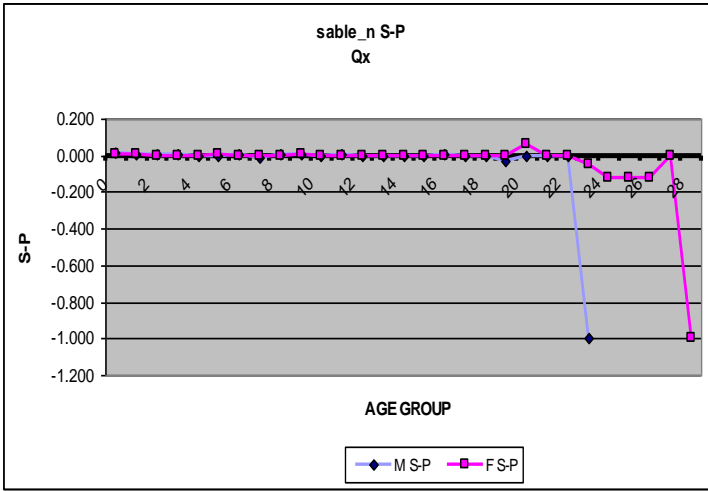




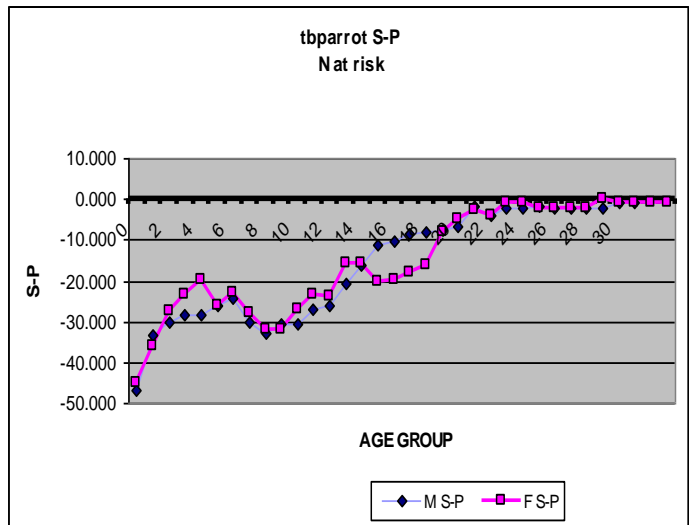
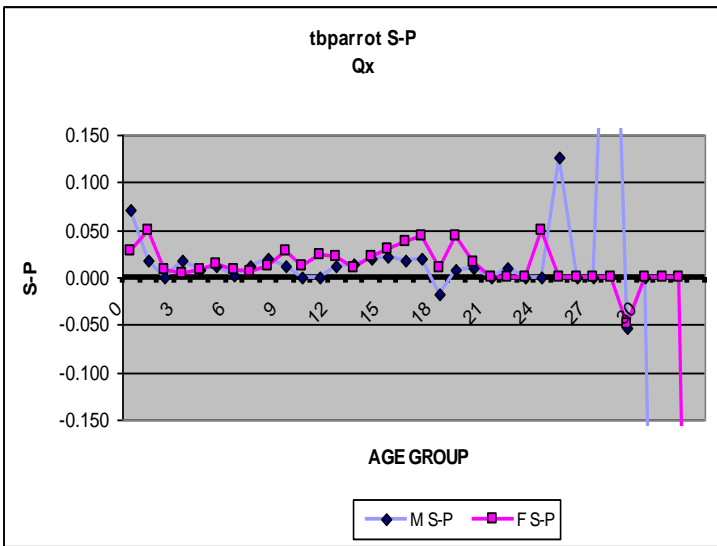
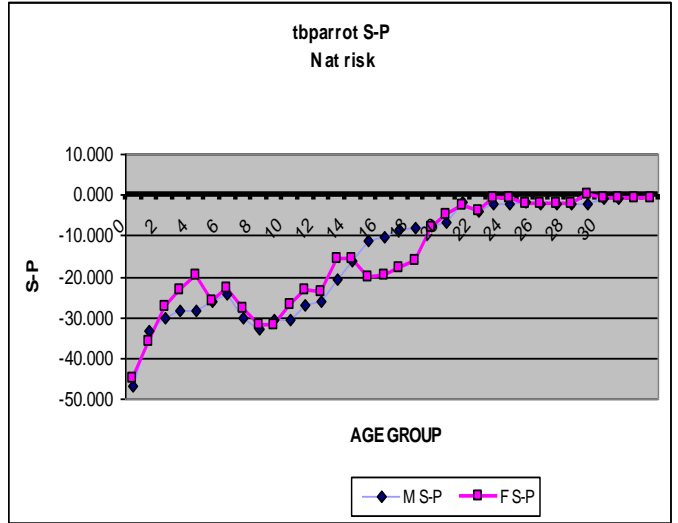
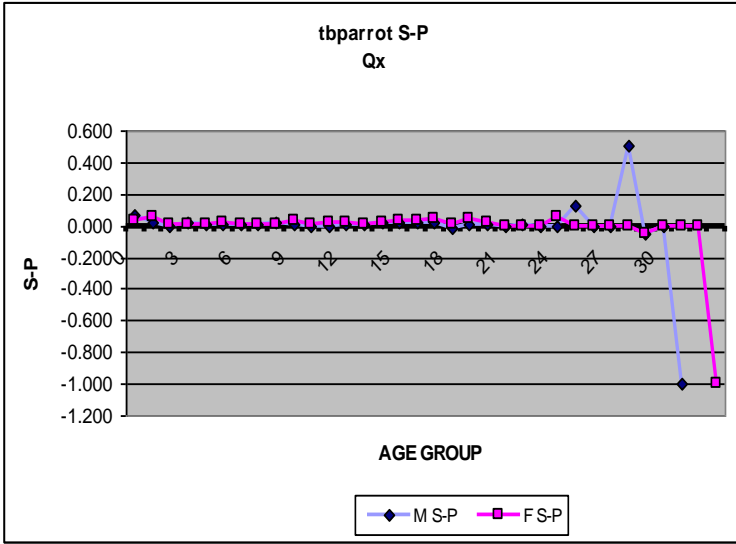
# NAROTter



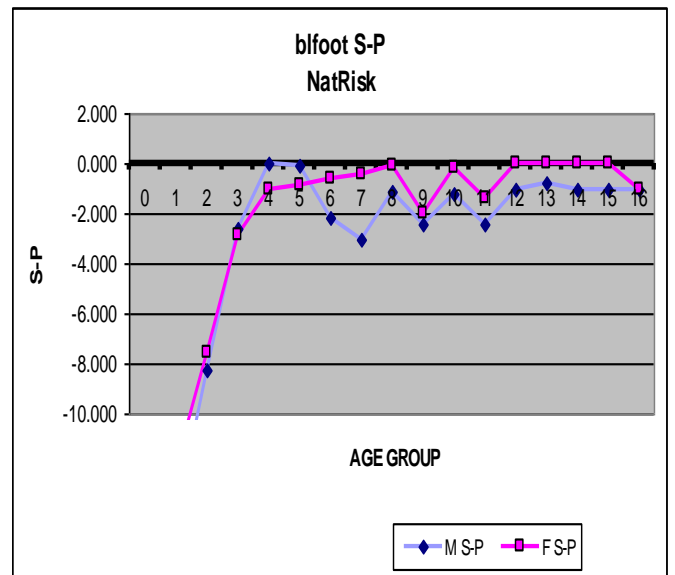
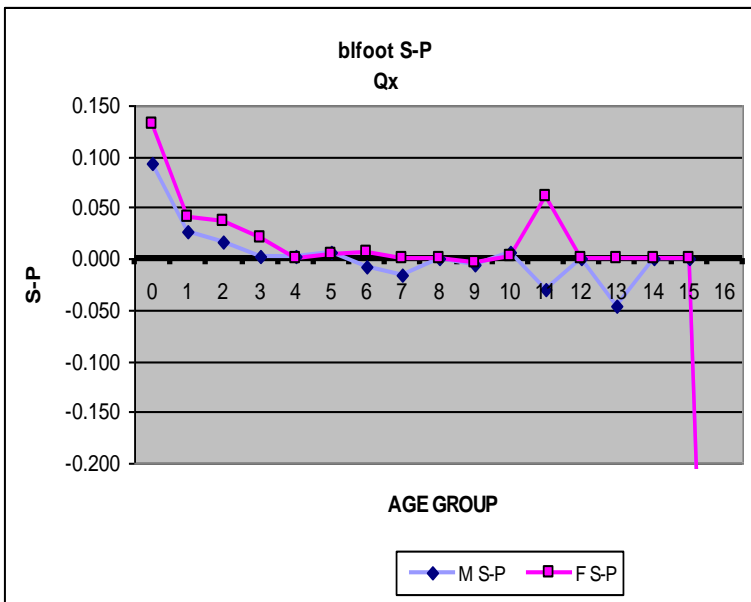
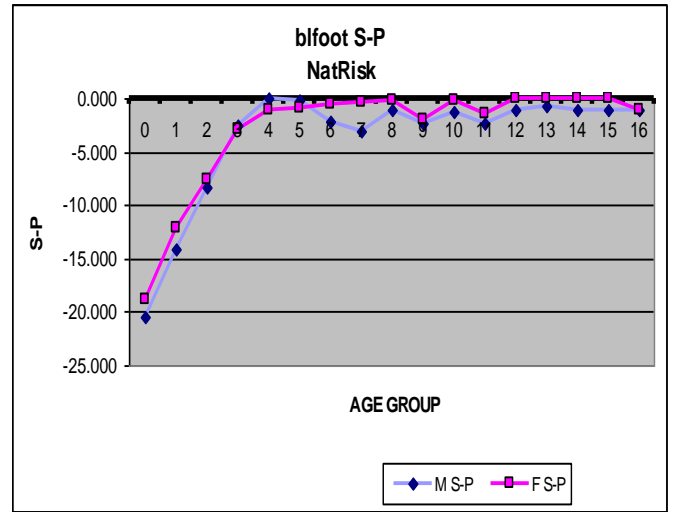
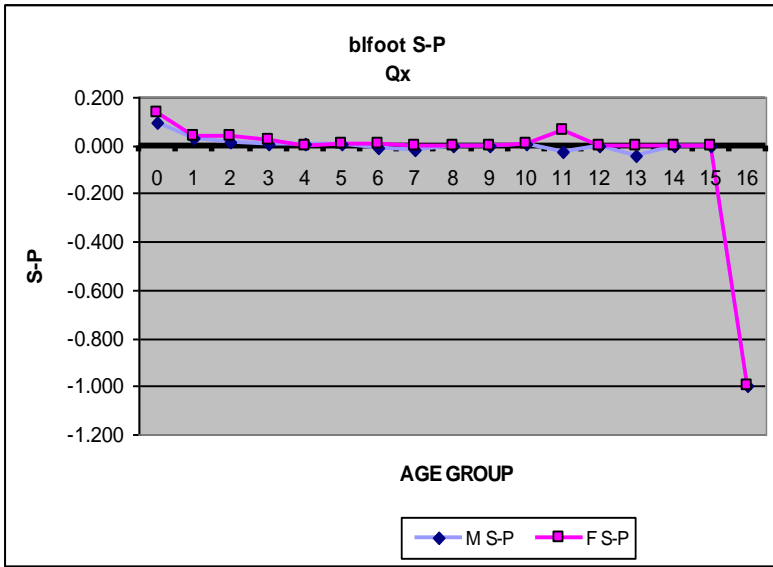
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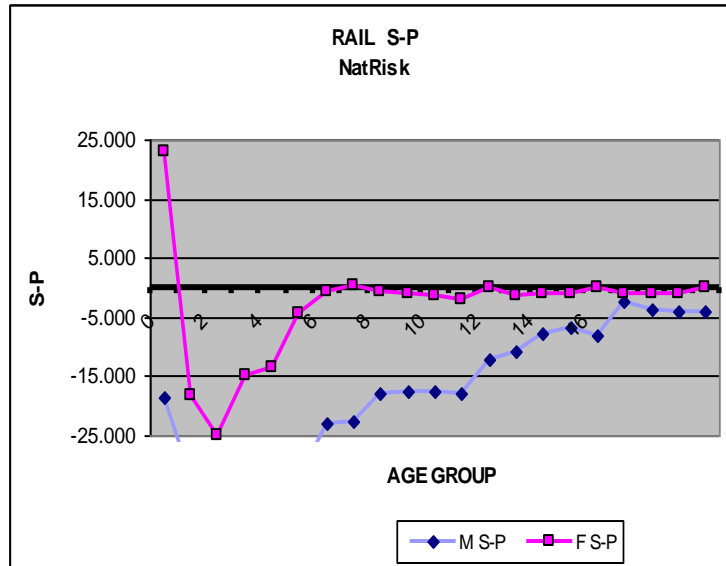
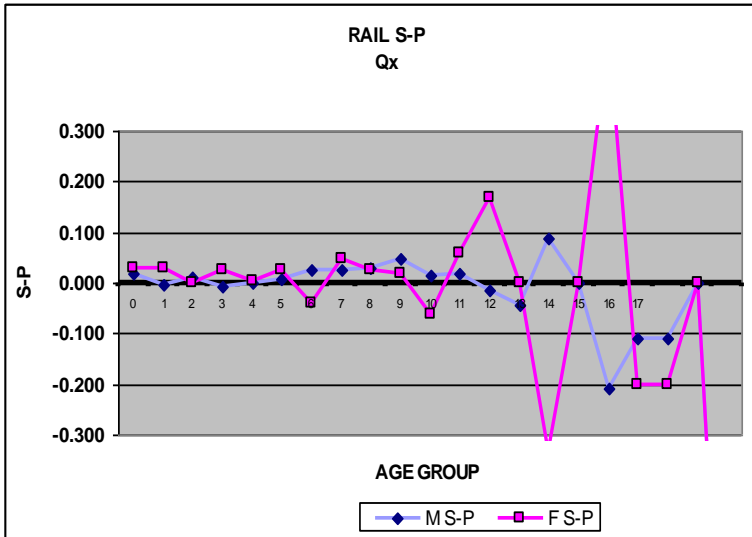
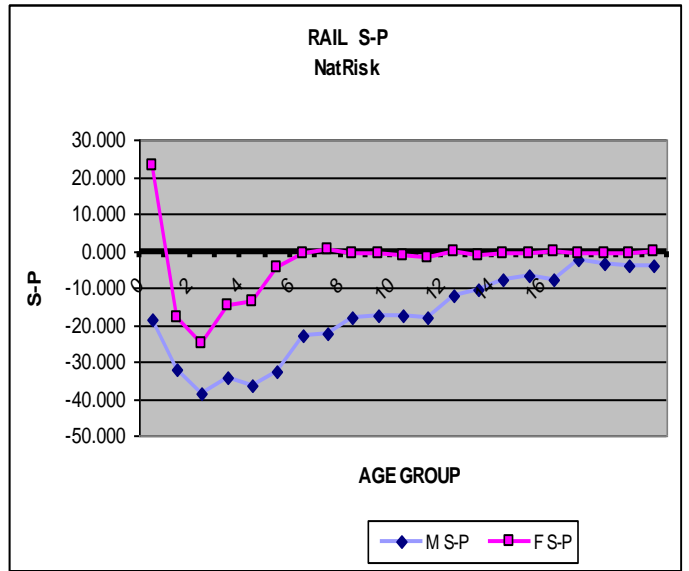
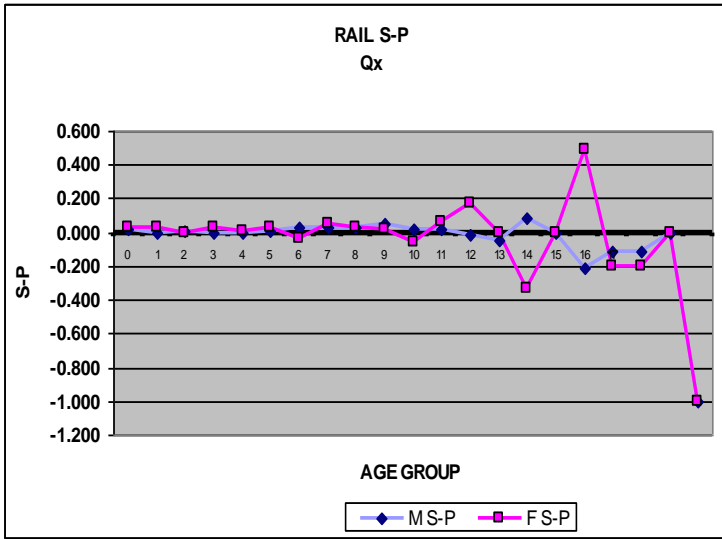
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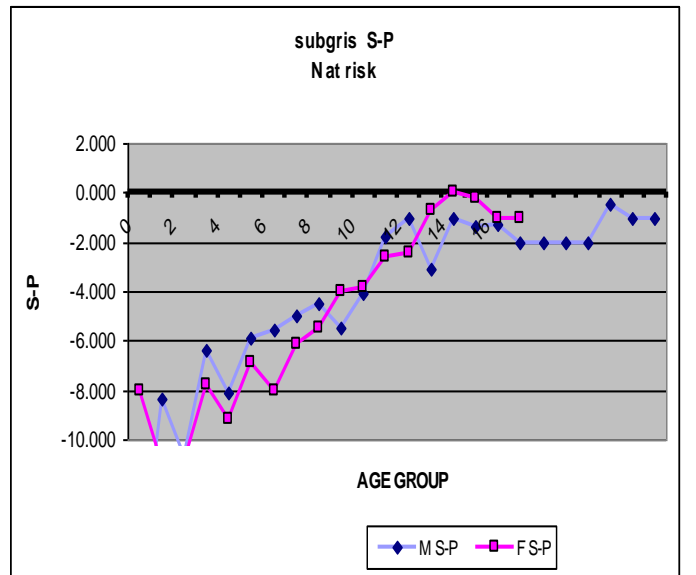
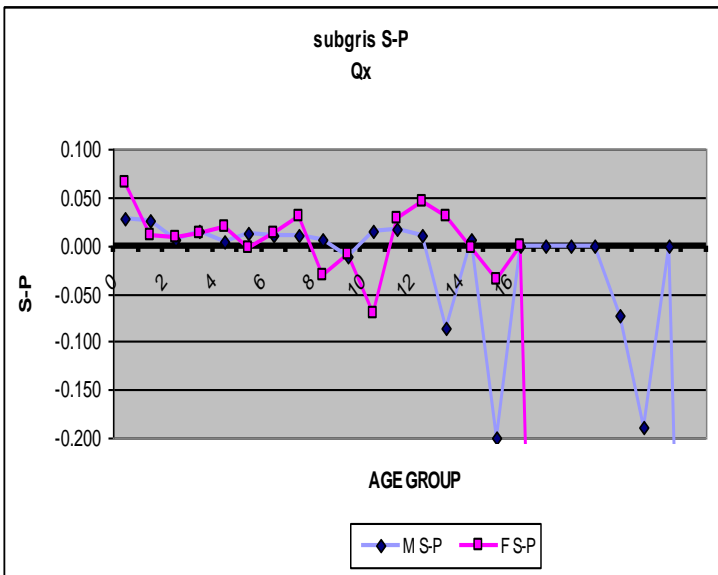
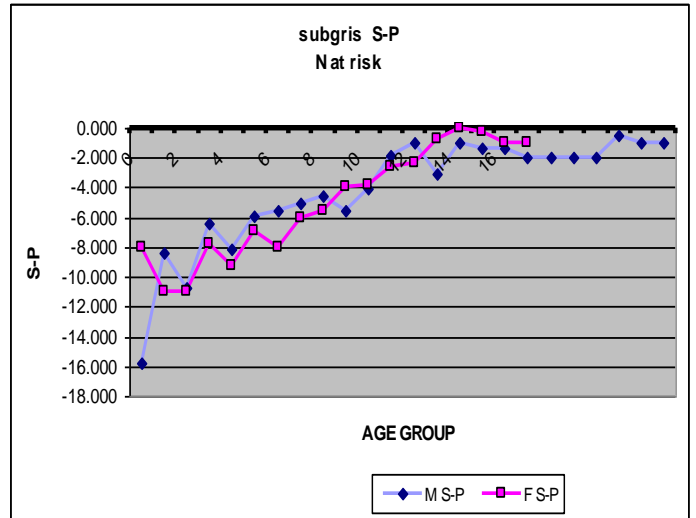
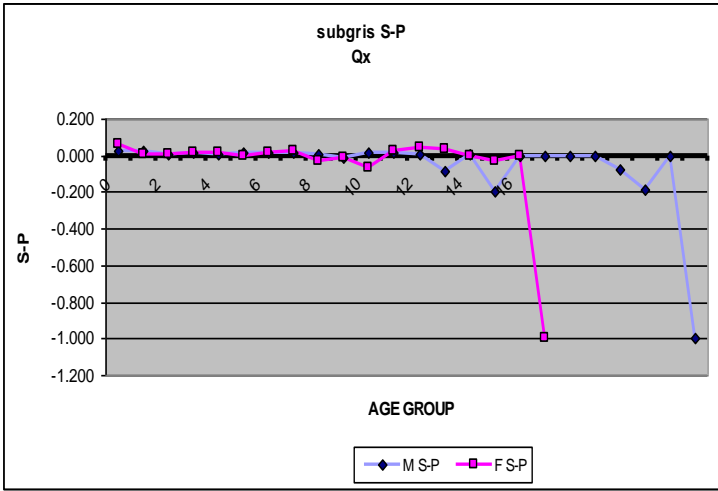
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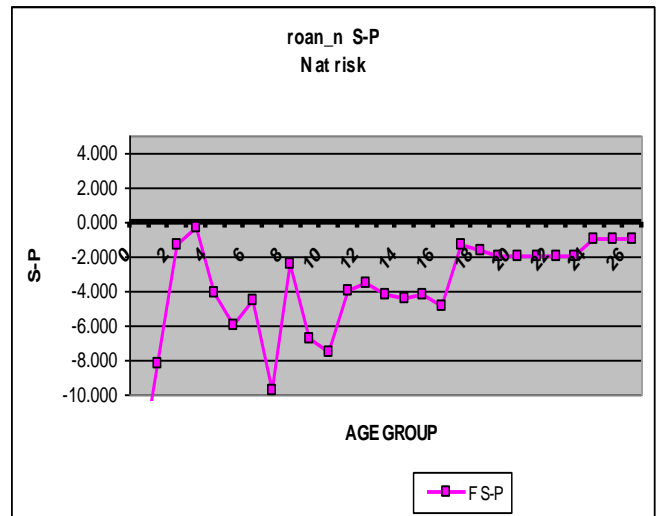
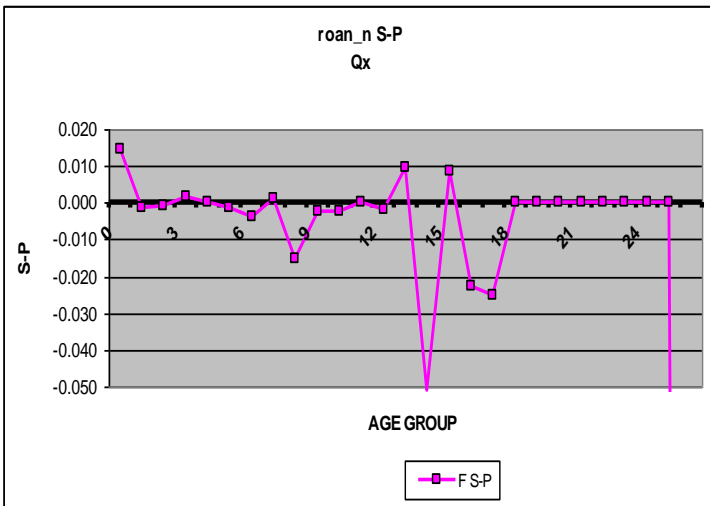
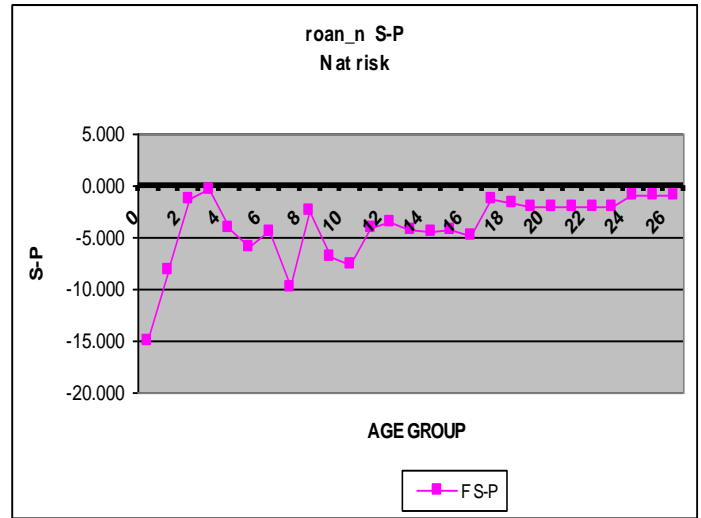
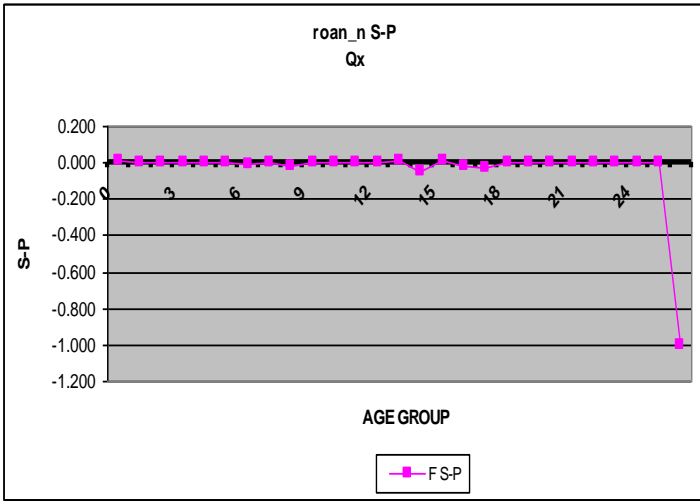
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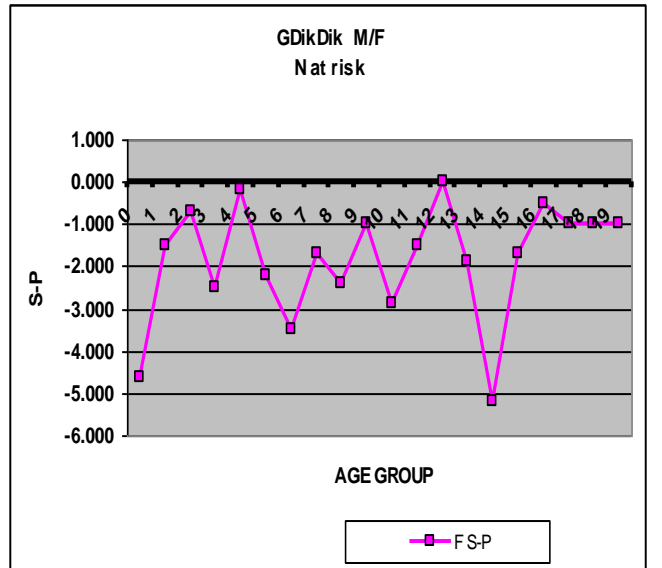
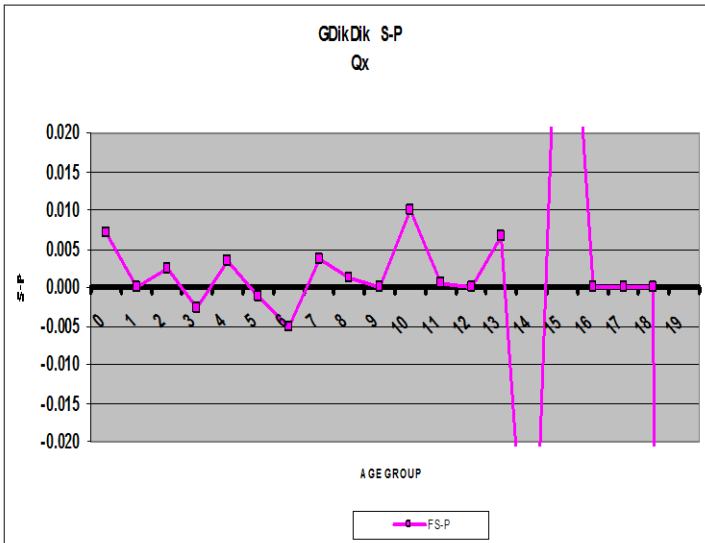
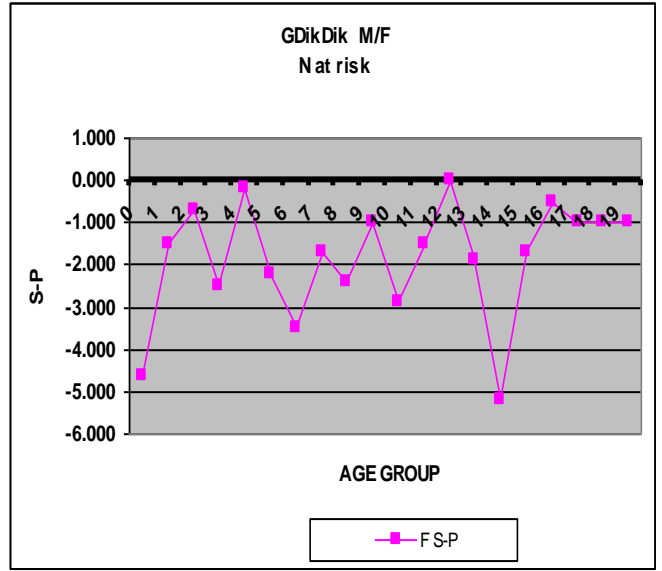
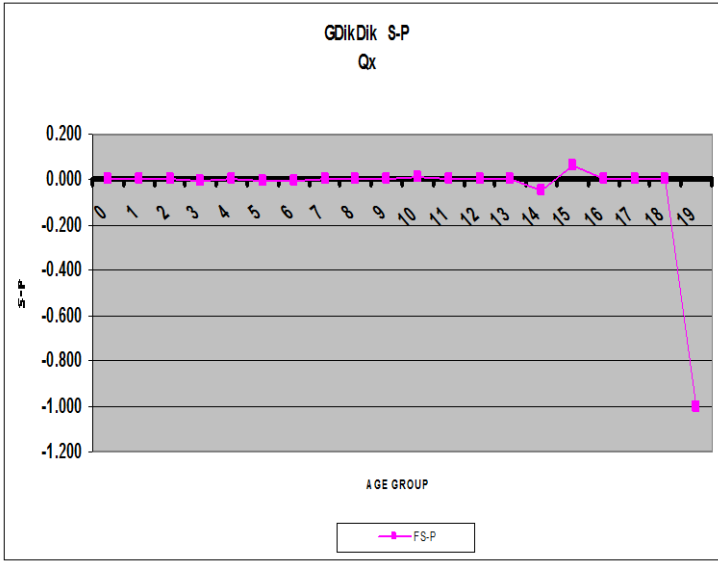
# Subgris



# Roan

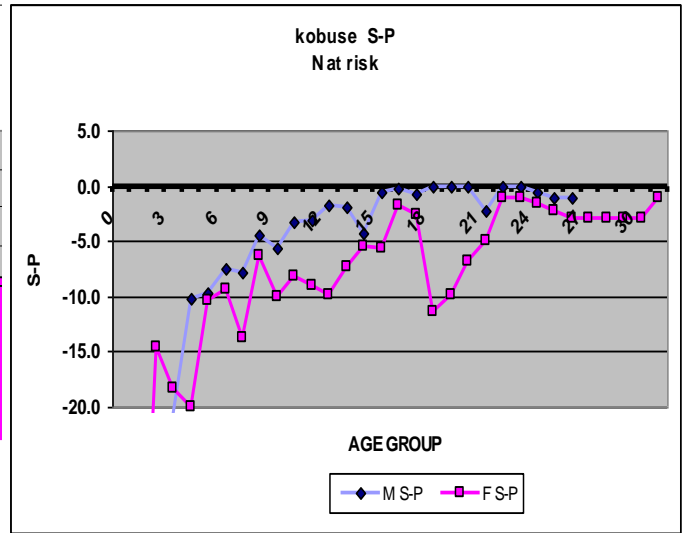
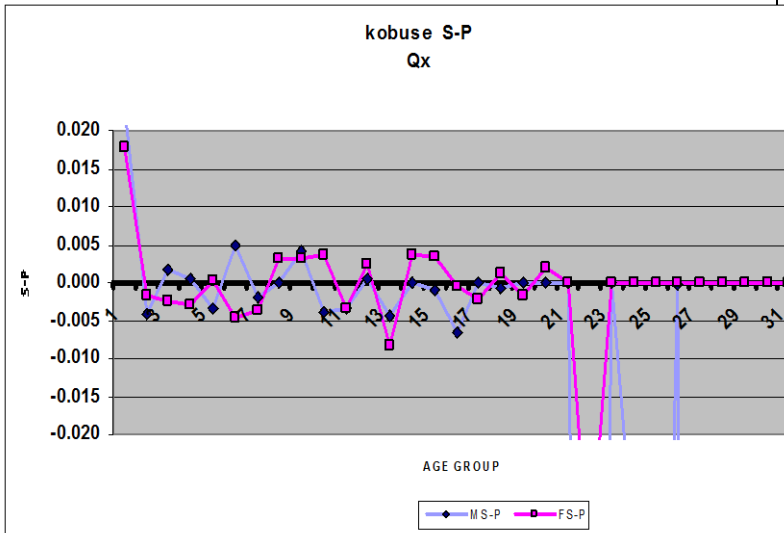
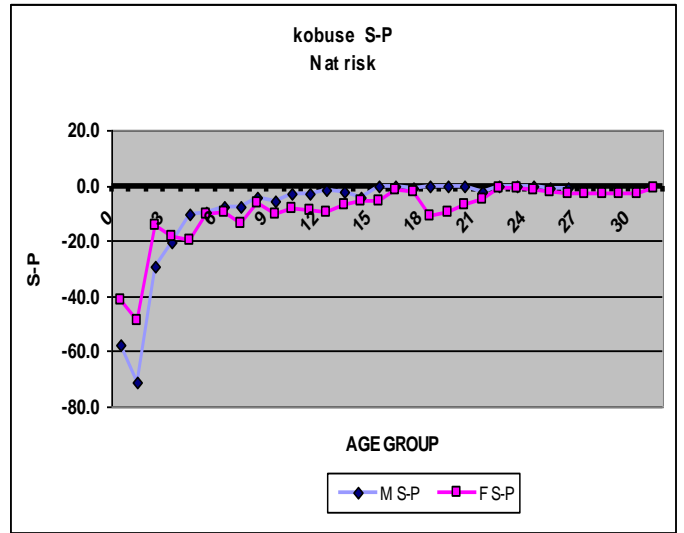
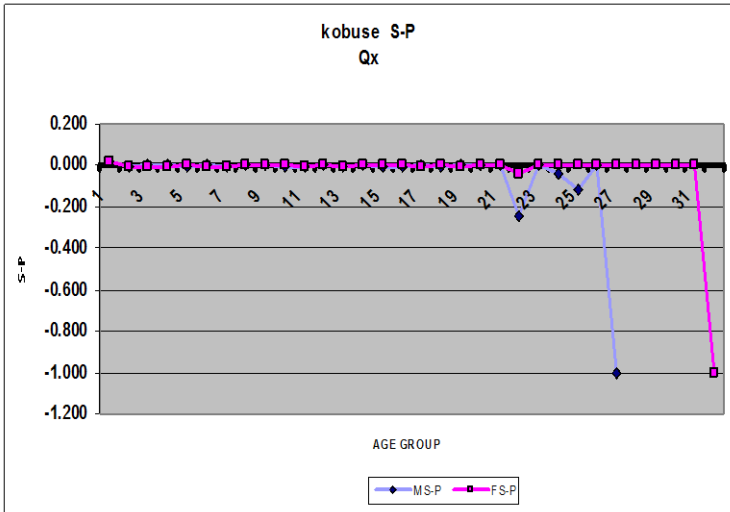


**GDikDik**





# Kobuse



# Narica\_N

