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FSU Case # RM-MB58

Date: 3/26/2020

**Florida State University
Inquiry Report Concerning
Allegations of Research Misconduct against
Eric Stewart**

1. Name and position of the Respondents

Eric Stewart, Professor, Criminology

2. Description of the allegations of research misconduct

Fabrication/falsification of data included in a publication entitled. "School social bonds, school climate, and school misbehavior: A multilevel analysis." Stewart, Eric A. 2003, Justice Quarterly 20:575-604.

3. The external support pertinent to the allegation

None

4. The names and titles of the committee members and experts who conducted the inquiry

- Kathryn Tillman, Professor, Sociology
- Fred Huffer, Professor, Statistics
- Debajyoti Sinha, Professor, Statistics

5. Summary of the inquiry process used

The committee members reviewed the materials provided, interviewed the respondent, and then met as a committee and discussed the evidence, analyzed data using code provided by the Respondent, and formed a consensus recommendation.

6. List of the research records reviewed

Pickett email allegation dated 1/15/2020, with attachments (1) the publication entitled. "School social bonds, school climate, and school misbehavior: A multilevel analysis." Stewart, Eric A. 2003, Justice Quarterly 20:575-604; (2) Appendix A, Comparison to Stewart's (2003: 602); Code for accusations; (3) ICPSR Student data file; (4) Pickett Additional Evidence dated 1/14/2020; (5) Hoffman (2003) Analyses of NLES; (5) Hoffman (2006) Another Analysis of NLES; (6) Peugh (2010) NELS Analysis.

7. Summaries of Respondent Interview(s)

Our committee met with Dr. Stewart on February 11 for about an hour. At this meeting he distributed a document he had prepared which discusses the points raised in Dr. Pickett's email of January 14 attacking the validity of his 2003 paper. This document describes a plausible recreation of a sample similar to that used in his 2003 paper. In our meeting, we questioned Dr. Stewart about the steps in the construction of this sample and the results obtained using this sample, including the loadings obtained in a factor analysis of the school involvement variables. Dr. Stewart also listed in his document various published research studies using the same data which reported a range of sample sizes and degrees of urbanicity, which Dr. Stewart felt contradicted some of Dr. Pickett's assertions. This material was also discussed in our meeting.

8. Committee recommendation and the basis for the recommendation

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Dr. Stewart's paper of 2003 omits many details of the analysis, and he does not have any surviving research documentation which supplies these details. In particular, Dr. Stewart no longer has his original data files nor any of the code he used for his analysis. This rather limits what our committee can do. It is regrettable the Dr. Stewart's paper omitted these analysis details (which relate mainly to the treatment of missing values and the decision of which schools to include), but this in itself does not constitute evidence of research misconduct, and these sorts of omissions were not uncommon at the time of Dr. Stewart's publication.

Dr. Pickett claims that some of the numbers given in Stewart's 2003 paper are "impossible". Dr. Stewart endeavored to construct a plausible recreation of the sample used in his 2003 analysis which produced numbers similar to those from his 2003 paper, thereby refuting their impossibility. Dr. Stewart believed that he would have dropped all schools with small numbers of respondents, and that he would then have imputed replacements for missing values whenever possible. In his plausible recreation, Dr. Stewart first dropped all students with missing School ID's and all students from schools with fewer than 17 student respondents. His intention was then to (1) retain students who had useful values on at least one of the GPA measures (dropping the others), (2) retain students who had useful values on at least one of the School Involvement measures (dropping the others), and, finally, (3) drop students who were missing any of the School Misbehavior measures. In the course of dropping these students, some schools dropped below 17 students, and he then deleted these schools from the analysis. This left Dr. Stewart with a sample consisting of 12,250 students from 569 schools. These numbers are not too greatly different from the 10,578 students in 528 schools reported in Dr. Stewart's 2003 paper. Dr. Stewart then carried out a factor analysis (using PCA) on the correlation matrix of the school involvement measures and obtained factor loadings which were somewhat smaller but had a similar general magnitude to those reported in his 2003 paper. This demonstrates that these numbers are "possible" (although, as noted below, they are not likely to be statistically valid, and we agree with Dr. Pickett that factor loadings this large are highly implausible).

The committee obtained Dr. Stewart's code and exactly replicated his findings described above. We discovered, however, that in deleting the students in steps (1), (2), (3) above, Dr. Stewart made coding errors so that his final data contained many students with numerical missing value codes which were then used in computing the correlation matrix, resulting in greatly inflated factor loadings. If Dr. Stewart's original code contained similar errors, that would explain the factor loadings in his 2003 paper.

(We note that by varying the details of Dr. Stewart's three steps it is actually possible to get much closer to the figures of 10,578 students in 528 schools than he did in his plausible recreation.)

Dr. Pickett notes other irregularities in Stewart (2003). The sample produced in Dr. Stewart's plausible recreation does not succeed in explaining these irregularities; it does not reproduce the "urbanicity" reported in his 2003 paper, nor does it reproduce the number of students "never having been put on an in-school suspension". However, there are many ways to vary the schools which are used and the treatment of the missing values, so that it is conceivable that there exists some reasonable way to construct the sample which actually leads to the values reported in the 2003 paper. And if one allows for the possibility of coding errors, then almost anything is possible. Dr. Pickett notes that the reported mean and standard deviation of the binary variable "School location" are impossible since these values are connected mathematically. These values can be easily explained either by a typographical error or by a coding error. For example, if Dr. Stewart left missing value codes in his original data (as he did in

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his plausible recreation) and used these in his calculation of the mean and SD , then the mean and SD are no longer mathematically related in the expected way.

Our committee has found no evidence which strongly points to research misconduct. Given the many conceivable ways the original analysis could have been conducted and the possibility of coding errors, it does not seem feasible to reconstruct the original analysis or even determine with any certainty for many quantities what values are possible or would indicate research misconduct. For these reasons we believe that a full investigation is not warranted.

9. Respondent comments on the draft report

are attached, or the respondent chose not to provide any comments.

10. Whether any other actions should be taken if an investigation is not recommended

N/A

Report submitted by (name and signatures of all Committee members)

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