# Comparing the Qualitative Effects Between Procrastination and Family Pressure on Exam Anxiety

SalahDin Ahmed Salh Rezk W Younis Tarek Hanafi Metwaly W Marawan MogebElrahman Foud AbdElbaset W

Luxor STEM School and Qena STEM School under the Egyptian Ministry of Education

English Class Grade 12

Mr. Khalil Na3ama

April 20, 2022

# **Contents**

1	Introduction		
	1.1	Problem	2
		1.1.1 Literature	2
		1.1.2 Impact	3
		1.1.3 Possible Factors	3
	1.2	Hypothesis	4
		1.2.1 Defining	4
		1.2.2 Testing	4
2	Bod		5
	2.1	Methodology	5
		2.1.1 Sample	5
		2.1.2 Questions	5
	2.2	Findings	5
3	Conclusion		
	3.1	Summary of Findings	7
	3.2	Recommendations	7
4	Bibl	ography	9
A	Que	tionnaire	10
В	Prev	ous Corrected Versions	12
C	Tech	nical Notes	14

# **List of Figures**

# **List of Tables**

#### **Executive Summary**

Exam anxiety is a huge factor in the daily life of students. It may affect their possible performance in exams resulting in an undesirable future. The most common causes of exam anxiety are the lack of preparation and family pressure. This report presents the qualitative effects of two in order to form more sophisticated plans for dealing with possible educational issues. The method by which these factors are compared is based on a 5-dimensional 100-point scale whose main input is a questionnaire done by a sample of 43 students. The model concluded that the procrastination has more effect than family pressure on exam anxiety by 43% with a 0.048 p-value. This model, however, does not consider the performance of the students as an important factor hence the need of more development for its structure.

### Introduction

#### 1.1 Problem

#### 1.1.1 Literature

It is a notable phenomenon that individuals do experience some kind of anxiety throughout their life — especially their academic one — increasing the probability of mistakes during most critical tasks. Although there is no possible advantage to such trait, it is prominently visible in the majority of whom are considered mentally stable by modern physiological standards (Leake, 1946). It is usually the case that such seemingly useless traits affecting people's day-to-day life has some kind of an advantage to humans' ancestors (Price, 2003). Therefore, the pursuit of analyzing this condition is a critical pivot for the advancement of human's development sciences.

Anxiety can be described as the tense, unsettling anticipation of a threatening but vague event; a feeling of uneasy suspense (Rachman, 2019). There is, noticeably, two distinct types of anxiety: objective and neurotic. Fear is usually considered as a type of objective anxiety, while neurotic anxiety is a product of internal perceptions and emotions (Spielberger, 1966). Although objective anxiety is more considered the helpful one for the humans' survival, neurotic anxiety is more often considered the ineffective one for the modern age — the interest of ours.

According to the Mowrer, 1939, the neurotic anxiety is defined as a result of the act which an individual commits to but wishes they had not. This definition, although may be misleading, does explain the frequency of such a feeling; it encourages the individual to be more aware of the consequences of their commitments. This can be noticed through most modern subcategories of anxiety (e.g. exam anxiety, marriage anxiety, etc). In contrast to Sullivan, 2013, which suggests anxiety to be an extension of the parenting instinct, that cannot explain modern forms of anxiety yet can be explained as a form of objective anxiety. Therefore, Mowerer's model could be more helpful for the purposes of this study.

Attention should be directed towards the field of education due to its flexible nature compared to other professional fields, also it is the foundation for every single considerable profession thus it is the focus in this study. Education, however, is such a broad subject that cannot be contained within one piece of work; accordingly, the most concerning of factors shall be

analysed. It was decided that exams, and hence exams anxiety, are the most serious due to the both their effect on one's mental state and possible future.

#### **1.1.2 Impact**

To assess the true value of the proposed problem the quantitative impact should be investigated to avoid wasting resources on an unnecessary matter. The main focus will be the effect on academic performance, although the observation of long term results would have been better, but there is no sufficient resources for such a task. The exclusion of possible variable is an important consideration since the special circumstances of COVID-19 have unnaturally affected the results of previous years due to the unusual increase in stress resulting in a less-stable mental state for most students (Alsaady et al., 2020).

Rana and Mahmood, 2010 describes the effect of cognitive factors (i.e worry) on academic performance of the students. The impact of anxiety was indisputable; the worry scale had the greatest correlation with the students' performance compared to all other measured scales. In more details, Trifoni and Shahini, 2011 dives more into the specific different states relating to anxiety, a one illustrates the students' opinions on the topic: students who were more anxious had more radical opinions concerning the subject compared to their less anxious peers.

#### 1.1.3 Possible Factors

There is, clearly, a number of measurable factors that results in exam anxiety. An incomprehensive list of them include: load of courses, duration of exams, expectations of exams, control over exams, procrastination, physical exercise, quality of rests, confidence, nutritions, and time management Some will be discussed here in order to form a coherent image for the current state of this problem. Despite that, the goal of this subsection is to decide the factors that should be discussed in order to reach a clear conclusion for this study.

Even though course load was conducted to be the most important factor, it is the only examrelated affective factor (Hashmat et al., 2008). All the other sufficiently significant<sup>1</sup> factors are directly related to the psychological state of the student (e.g. self-confidence, expectations, etc), ergo the focus on psychological health aspects. However, an aspect that is greatly is usually overlooked is pressure caused by whom around the individual (e.g. family pressure, peer pressure, etc). It can affect a key factor, self-esteem (Whitbeck et al., 1991).

While procrastination<sup>2</sup> is a known yet not-well studied factor, pressure is not considered in most studies as a factor of any significance. Because of that the focus will be to compare a known and less known factors in order to result in a more comprehensive view of the issue in hand. However, the subject of pressure is an unmanageably broad concept that needs to be reduced into a feasible subcategory. Whitbeck et al., 1991 considers family pressure by far the most significant emotional factor affecting self-esteem and confidence hence the focus will be on it.

<sup>&</sup>lt;sup>1</sup>In statistical hypothesis testing, a result has statistical significance when it is very unlikely to have occurred.

<sup>&</sup>lt;sup>2</sup>Procrastination is also referred to as preparation in some studies.

### 1.2 Hypothesis

#### 1.2.1 Defining

As mentioned in the previous section, the main focus of the study is the effects of procrastination and family pressure on exam anxiety. Accordingly, the proposed hypothesis is that procrastination does have a significantly higher effect than that of family pressure. The importance of such hypothesis may not seem clear at first and might even rise more issues; however, the result will determine which should be the concern of a family dealing with their children. "Should I change the way I am supporting my kid or force him to study more and avoid procrastination?" is the kind of questions that this research try to answer effectively.

It is important to note that the hypothesis is not a direct comparison between the two points of failure i.e. self and family, but rather a concise overview on the metrics that are being investigated. Furthermore, the result of the study is a subset of the problem. The main benefit will be the possible plans that could be derived. Thus, the formal statement that of the null hypothesis<sup>3</sup> is that there is no statistically significant difference between the negative effects of procrastination and family pressure on exam anxiety, while the alternative hypothesis<sup>4</sup> is that there is a statistically significant difference between the negative effects of procrastination.

#### **1.2.2 Testing**

The approach to these kind of psychological metrics is usually based on detailed questionnaires with studied designs to achieve the goal of qualitatively measuring the focused on metrics (Jack & Clarke, 1998). Although the use of interest-based surveys is the most common due to its ease and its concise simple random samples<sup>5</sup>, it presents some notable limitations (Wright, 2005). The main limitation that may affect the accuracy of this study is the lack of honesty and consistency of the online population. Chesney and Penny, 2013 found that participant it is way easier to lie when you put the internet's mask of anonymity. Looking decent is more important for them than the accuracy of scientific research.

In order to minimize this type of issues, the questionnaire should be both passive (to avoid question bias) and unintimidating (to avoid social desirability bias). Each questions should be phrased in a way that is not intrusive to the reader. It should decrease the level of judgement towards any subset of people and illustrates that there is no problem in being radically different. Another method that may help is the process of making the questionnaire more realistic than usual online surveys; this may help in making the readers be more aware of the importance of the results hence being more honest. Despite all of that, demanded characteristics bias may still be present in the questionnaire because of their nature relating to human perception of the examination itself.

<sup>&</sup>lt;sup>3</sup>In inferential statistics, the null hypothesis is that two possibilities are the same.

<sup>&</sup>lt;sup>4</sup>In statistical hypothesis testing, the alternative hypothesis is one of the proposed propositions.

<sup>&</sup>lt;sup>5</sup>In statistics, a simple random sample is a subset of a larger set where they are chosen randomly.

### **Body**

### 2.1 Methodology

#### **2.1.1** Sample

The sample were mainly consisted of randomized students ranging from high school to university. The students were from different geographic areas, different schools, and different systems of education. The sample was taken from the Egyptian internet population, so the results will be limited to the Egyptian population at best. The age of the students ranged from 15 to 22; although there were some outliers ranging from 30 to 49. The gender was not collected due to its overall insignificant affect on the results (Hashmat et al., 2008).

#### 2.1.2 Questions

#### 2.2 Findings

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt

urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis. Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consectetuer.

Suspendisse vel felis. Ut lorem lorem, interdum eu, tincidunt sit amet, laoreet vitae, arcu. Aenean faucibus pede eu ante. Praesent enim elit, rutrum at, molestie non, nonummy vel, nisl. Ut lectus eros, malesuada sit amet, fermentum eu, sodales cursus, magna. Donec eu purus. Quisque vehicula, urna sed ultricies auctor, pede lorem egestas dui, et convallis elit erat sed nulla. Donec luctus. Curabitur et nunc. Aliquam dolor odio, commodo pretium, ultricies non, pharetra in, velit. Integer arcu est, nonummy in, fermentum faucibus, egestas vel, odio.

### **Conclusion**

### 3.1 Summary of Findings

#### 3.2 Recommendations

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. In hac habitasse platea dictumst.

Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis. Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consectetuer.

Suspendisse vel felis. Ut lorem lorem, interdum eu, tincidunt sit amet, laoreet vitae, arcu. Aenean faucibus pede eu ante. Praesent enim elit, rutrum at, molestie non, nonummy vel, nisl. Ut lectus eros, malesuada sit amet, fermentum eu, sodales cursus, magna. Donec eu purus. Quisque vehicula, urna sed ultricies auctor, pede lorem egestas dui, et convallis elit erat sed nulla. Donec luctus. Curabitur et nunc. Aliquam dolor odio, commodo pretium, ultricies non, pharetra in, velit. Integer arcu est, nonummy in, fermentum faucibus, egestas vel, odio.

# **Bibliography**

- Alsaady, I., Gattan, H., Zawawi, A., Alghanmi, M., & Zakai, H. (2020). Impact of covid-19 crisis on exam anxiety levels among bachelor level university students. *Mediterranean Journal of Social Sciences*, 11(5), 33. https://doi.org/10.36941/mjss-2020-0052
- Chesney, T., & Penny, K. (2013). The impact of repeated lying on survey results. *SAGE Open*, 3(1), 2158244012472345.
- Hashmat, S., Hashmat, M., Amanullah, F., & Aziz, S. (2008). Factors causing exam anxiety in medical students. *Journal-Pakistan Medical Association*, *58*(4), 167.
- Jack, B., & Clarke, A. M. (1998). The purpose and use of questionnaires in research. *Professional nurse (London, England)*, 14(3), 176–179.
- Leake, C. D. (1946). Physiological standards. Fed Proc, 5(1 Pt 2), 61.
- Mowrer, O. H. (1939). A stimulus-response analysis of anxiety and its role as a reinforcing agent. *Psychological review*, 46(6), 553.
- Price, J. S. (2003). Evolutionary aspects of anxiety disorders. *Dialogues Clin Neurosci*, *5*(3), 223–236.
- Rachman, S. J. (2019). Anxiety (4th ed.). Psychology Press.
- Rana, R., & Mahmood, N. (2010). The relationship between test anxiety and academic achievement. *papers.ssrn.com*. https://ssrn.com/abstract=2362291
- Spielberger, C. D. (1966). Theory and research on anxiety. *Anxiety and behavior* (pp. 3–23). Elsevier.
- Sullivan, H. S. (2013). The interpersonal theory of psychiatry. Routledge.
- Trifoni, A., & Shahini, M. (2011). How does exam anxiety affect the performance of university students? *Mediterranean journal of social sciences*, 2(2), 93–93.
- Whitbeck, L. B., Simons, R. L., Conger, R. D., Lorenz, F. O., Huck, S., & Elder Jr, G. H. (1991). Family economic hardship, parental support, and adolescent self-esteem. *Social Psychology Quarterly*, 353–363.
- Wright, K. B. (2005). Researching internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of computer-mediated communication*, *10*(3), JCMC1034.

## Appendix A

### Questionnaire

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis. Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consectetuer.

Suspendisse vel felis. Ut lorem lorem, interdum eu, tincidunt sit amet, laoreet vitae, arcu. Aenean faucibus pede eu ante. Praesent enim elit, rutrum at, molestie non, nonummy vel, nisl. Ut lectus eros, malesuada sit amet, fermentum eu, sodales cursus, magna. Donec eu purus. Quisque vehicula, urna sed ultricies auctor, pede lorem egestas dui, et convallis elit erat sed nulla. Donec luctus. Curabitur et nunc. Aliquam dolor odio, commodo pretium, ultricies non, pharetra in, velit. Integer arcu est, nonummy in, fermentum faucibus, egestas vel, odio.

### Appendix B

### **Previous Corrected Versions**

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis. Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consectetuer.

Suspendisse vel felis. Ut lorem lorem, interdum eu, tincidunt sit amet, laoreet vitae, arcu. Aenean faucibus pede eu ante. Praesent enim elit, rutrum at, molestie non, nonummy vel, nisl. Ut lectus eros, malesuada sit amet, fermentum eu, sodales cursus, magna. Donec eu purus. Quisque vehicula, urna sed ultricies auctor, pede lorem egestas dui, et convallis elit erat sed nulla. Donec luctus. Curabitur et nunc. Aliquam dolor odio, commodo pretium, ultricies non, pharetra in, velit. Integer arcu est, nonummy in, fermentum faucibus, egestas vel, odio.

### **Appendix C**

### **Technical Notes**

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis. Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consectetuer.

Suspendisse vel felis. Ut lorem lorem, interdum eu, tincidunt sit amet, laoreet vitae, arcu. Aenean faucibus pede eu ante. Praesent enim elit, rutrum at, molestie non, nonummy vel, nisl. Ut lectus eros, malesuada sit amet, fermentum eu, sodales cursus, magna. Donec eu purus. Quisque vehicula, urna sed ultricies auctor, pede lorem egestas dui, et convallis elit erat sed nulla. Donec luctus. Curabitur et nunc. Aliquam dolor odio, commodo pretium, ultricies non, pharetra in, velit. Integer arcu est, nonummy in, fermentum faucibus, egestas vel, odio.