

Qualitative Analysis of Academic Factors Contributing to Impostor Phenomenon Among University Undergraduates

Jasper C. Quimbo¹, Kathleen Pearl C. Awa-ao², Faye Cyma S. Almendra³,
Dianne R. Calonia⁴, Jefferson E. Flores⁵

2004136@lnu.edu.ph¹

2001566@lnu.edu.ph²

2001552@lnu.edu.ph³

2001578@lnu.edu.ph⁴

Jefferson.flores@lnu.edu.ph⁵

Applied Sciences Department, Leyte Normal University, Tacloban City, 6500, Philippines

Abstract

This descriptive qualitative study delves into the academic factors contributing to the experience of the phenomenon of Impostor Phenomenon (IP) among undergraduate university students. Participants were selected through careful screening using the Clance Impostor Phenomenon Scale (CIPS), ensuring that participants represent a sample of individuals experiencing significant to intense impostor phenomenon. Data collection involved in-depth semi-structured interviews, providing a rich understanding of participants' experiences and perceptions regarding the impostor phenomenon in the academic context. Thematic analysis revealed several key themes including challenges of online learning, dissatisfaction with grades, study habits and self-evaluation, social comparison and academic performance, transition to university, as well as lack of validation and fear of failure. These findings contribute to a deeper understanding of the impostor phenomenon and underscore the importance of addressing academic factors in interventions aimed at supporting students' mental health and well-being.

Keywords: impostor phenomenon; academic factors; university undergraduate students; CIPS

1. Introduction

The impostor phenomenon (IP), a psychological experience wherein individuals believe they have fraudulently attained their successes and fear being exposed as impostors despite evidence of competence, has garnered considerable attention over the past few decades, primarily through quantitative investigations that have laid the groundwork for understanding its manifestations. One significant context where IP thrives is the university environment, characterized by newfound independence and exposure to novel experiences (Arnett, 2000; Negga, Applewhite, & Livingston, 2007). Within this setting, the interplay of stressors and characteristics associated with IP becomes particularly pronounced, with studies suggesting that the collegiate experience may heighten the risk of experiencing IP (Bernard et al., 2017; Lane, 2015). Individuals grappling with IP often impose high self-standards, striving to counter negative self-perceptions and perceived judgments from others (Leary et al., 2000).

While much research has delved into the internal dynamics of IP, there remains a critical gap in understanding how academic factors intersect with and contribute to the experience of IP among university undergraduates. This gap prompts an exploration into various factors that may influence feelings of intellectual incompetence. Gender differences, for instance, have been a topic of interest, with conflicting findings regarding the prevalence of IP among females compared to males (Clance &

Imes, 1978; McGregor et al., 2008; Cokley et al., 2015; Crawford et al., 2016). Additionally, familial influences have been implicated, with family achievement orientation and perceived parental control emerging as significant predictors of IP (King & Cooley, 1995; Sonnak & Towell, 2001; Castro, Jones, & Mirsalmi, 2004). The impact of parenting styles, such as overly protective or distant approaches, on the development of adaptive feelings of competence also warrants exploration (Li, Hughes, & Thu, 2014; Want & Kleitman, 2006).

It is noteworthy that most of the studies conducted on IP are quantitative in nature, utilizing instruments like the Clance Impostor Phenomenon Scale to measure the level of impostorism. While these quantitative approaches have provided valuable insights, they have primarily focused on individual traits and internal dynamics, leaving academic factors relatively unexplored. Specifically, academic factors, especially those examined qualitatively, have received little attention despite their potential significance in understanding the complex interplay between academic environments and the experience of IP among university undergraduates. This highlights the need for qualitative investigations that delve deeper into the nuances of academic factors and their role in shaping perceptions of intellectual competence and impostor phenomenon among students.

Through qualitative analysis, this research sought to provide understanding of the academic factors contributing to the experience of impostor phenomenon from the lens of the participants. By exploring experiences and perceptions of university undergraduates, this study aims to uncover the academic nature of impostor phenomenon within the university setting.

2. Theoretical Framework

The Social Comparison Theory, introduced by Festinger in 1954, posits that individuals have an inherent tendency to evaluate themselves by comparing their abilities, opinions, and attributes to those of others. According to this theory, people engage in social comparison processes as a means of self-evaluation, seeking information about their own abilities and characteristics through comparisons with others. These comparisons can occur both upward, where individuals compare themselves to others perceived as more successful or competent, and downward, where individuals compare themselves to those perceived as less successful or competent.

In the context of impostor phenomenon (IP), individuals experiencing IP often engage in constant social comparisons with their peers. Despite objective evidence of their competence, they perceive themselves as falling short and fear being exposed as fraudulent. This continual comparison with others contributes to feelings of inadequacy and undermines their sense of self-worth. The Social Comparison Theory provides a theoretical framework for understanding how these comparison processes shape individuals' perceptions of themselves and their academic abilities.

For this study, the theory served as a guiding framework to make sense of the data collected. By examining how individuals with IP navigate social comparisons in academic settings, the study aimed to uncover the underlying mechanisms contributing to impostor phenomenon. Additionally, the theory informed the direction of the study by highlighting the importance of investigating various academic factors intersecting with impostor phenomenon. This included exploring how individuals with IP perceive themselves in relation to their peers and how these perceptions influence their academic experiences.

3. Methodology

3.1 Research Design

This study utilized a descriptive qualitative research design to explore the academic factors contributing to impostor phenomenon among university undergraduate students. Descriptive qualitative research was chosen due to its ability to provide in-depth insights into complex phenomena, such as impostor phenomenon, from the perspective of participants. Given the exploratory nature of the research questions and the limited existing literature on the intersection of academic factors and impostor phenomenon, a qualitative inquiry was deemed appropriate to explore this area in depth. As emphasized by Tenny et al. (2022), one of the strengths of qualitative research is its ability to explain processes and patterns of human behavior that can be difficult to quantify.

3.2 Locale, Sampling, and Respondents

The research was carried out at a state university situated in Tacloban City, Leyte, Philippines, known for offering diverse Arts and Sciences programs. In the absence of a pre-determined sample size, the study embraced the concept of saturation (Guest et al., 2006), allowing the data collection process to continue until no new information or themes emerged. Prospect participants were selected through an initial screening process utilizing the Clance Impostor Phenomenon Scale (CIPS), focusing on individuals scoring significantly or intensely on the scale. The participants were purposively chosen hence, the interview inclusion criteria were strictly adhered to, requiring participants to be enrolled in the College of Arts and Sciences (CAS) Program of the university under study, exhibit significant to intense impostor phenomenon results, and express willingness to partake in the study. A total of six students met these criteria and willingly participated in the research.

3.3 Research Instrument and Data Collection Procedures

In gathering data for this study, the researchers utilized a researcher-made semi-structured interview guide which was written in English. This contains questions designed to gather more information about the academic factors contributing to IP experiences. Before the commencement of data collection, the tool was reviewed by three qualitative experts to validate the contents ensuring its alignment to the research question. This was followed by pilot testing to identify if there's ambiguity in the questions. The outcome of the pilot testing revealed that the tool is ready for utilization in the actual data collection.

3.4. Data Analysis

This study is qualitative in nature hence the researchers used the thematic analysis by Braun and Clarke (2006), which entails an iterative process consisting of six steps starting with becoming familiar with the data then generating codes to themes, reviewing themes, defining and naming themes, and locating examples. This type of analysis identifies patterns or themes within the qualitative data which use these themes to address the research questions. With this method, the researchers were able to analyze the interview transcripts with comprehension, gaining insights on the respondent's experiences and influences on impostor phenomenon.

3.5. Ethical Considerations

To ensure that the study is conducted in accordance with the highest ethical standards, the researchers took several measures. First, they obtained informed consent from all respondents, explaining the study's purpose, procedures, and how their data will be used. The respondents were informed of their right to withdraw from the study at any time without penalty. The confidentiality of participants was protected by using codes or pseudonyms to identify them, and their personal

information will be kept secure. The researchers also took steps to prevent harm or discomfort to the participants, minimizing any potential risks. In addition, the study complied with all relevant laws and regulations governing research ethics. Finally, the researchers ensured that the results of the study are reported accurately and transparently, without any manipulation of data or other unethical practices.

4. Results and Discussion

Through in-depth interviews, participants provided insights into their experiences and perceptions, shedding light on the multifaceted nature of impostor phenomenon in the academic context. The following paragraphs explore the key themes that emerged from the data, including challenges of online learning, dissatisfaction with grades, study habits and self-evaluation, social comparison and academic performance, transition to university, as well as lack of validation and fear of failure.

4.1 Challenges of Online Learning

Participants expressed difficulties associated with online classes, such as internet connectivity issues and the financial burden of purchasing internet load. These challenges often intensified feelings of inadequacy and impostorism. This is evident in the remarks below:

“So, as a student, there are times that it’s hard for me because of, let’s say for example, factors like online class, no money for internet, and aside from such factors, as a student, I’m still cheerful in my school activities and performances in school and so on.” (Olivia)

Internet connectivity issues were a recurring concern among participants, disrupting their access to online classes, course materials, and academic resources. This barrier not only impeded their ability to participate fully in virtual learning but also heightened feelings of frustration and isolation. The COVID-19 pandemic has laid bare existing disparities in digital infrastructure, exacerbating the educational divide between students with reliable internet access and those without (Azionya & Nhedzi, 2021). Moreover, the financial strain of maintaining internet connectivity further marginalizes economically disadvantaged students, hindering their academic progress and exacerbating feelings of impostorism (McLean, 2016).

4.2 Dissatisfaction with Grades

Despite obtaining satisfactory grades, participants continued to experience self-doubt and questioned their abilities, reflecting the pervasive nature of IP in their academic lives. This finding aligns with existing literature on impostor phenomenon, which suggests that individuals with IP often struggle to internalize their accomplishments and attribute their success to external factors rather than their own competence (Clance & Imes, 1978). The disconnect between perceived achievement and internal validation contributes to a cycle of self-doubt and undermines individuals' confidence in their abilities.

“I don’t have specific strategy when it comes to coping with it aside from moving on and asking my classmates what their scores are and if it seems close to my score it feels “Oh! I still passed, it’s okay. All right go!” That grade is fine. Nothing that’s all.” (Ethan)

The discrepancy between external validation (e.g., grades) and internal beliefs about competence underscores the complexity of impostor phenomenon and its impact on individuals' self-perception. Despite evidence of academic success, participants' persistent feelings of inadequacy suggest underlying psychological barriers that transcend external validation. Dissatisfaction with grades highlights the importance of addressing the internalized beliefs and perceptions that contribute to impostor phenomenon. While academic success is an important milestone, it is not sufficient to alleviate

feelings of impostorism if individuals continue to doubt their abilities and attribute their success to luck or external factors (Chakraverty, 2020). Interventions aimed at addressing impostor phenomenon should focus on fostering self-confidence, promoting a growth mindset, and challenging negative self-perceptions (Cokley et al., 2017)

4.3 Study habits and Self-evaluation

Participants' varying study habits and concerns about knowledge retention underscored their persistent feelings of uncertainty and self-doubt regarding their academic performance. One notable aspect of this theme is the prevalence of self-doubt among participants, despite their efforts to engage in studying. Similar trend was observed by Bell et al. (2022), Aquil et al. (2022), and Bechtold (2015). The participants' descriptions of feeling uncertain about their knowledge and abilities, even when they had put in effort to study, highlight the subjective nature of impostor phenomenon. Despite their academic endeavors, participants continued to question their competence, suggesting that impostorism can persist despite external evidence of effort and achievement.

“Ummh, lack of study habits because I feel okay same, I can keep up even when I did not study. That’s all.” (Ethan)

Participants' concerns about their study habits and knowledge retention reflect underlying anxieties about their academic capabilities and competence. These concerns contribute to a cycle of self-doubt and reinforce feelings of inadequacy, perpetuating the experience of impostorism. By recognizing the role of study habits and self-evaluation in contributing to impostor phenomenon, educators and mental health professionals can implement targeted interventions to help individuals build confidence, resilience, and a positive self-image (Cokley et al., 2017).

4.4 Social Comparison and Academic Performance

Participants frequently reported engaging in comparisons with high-achieving peers, which exacerbated feelings of inadequacy and impostorism. This finding aligns with social comparison theory (Festinger, 1954), which posits that individuals evaluate their own abilities and opinions by comparing themselves to others in similar situations.

“... When I was in junior high school, there were times that I was grade conscious and I can see that my classmates’ performances, their scores or whatsoever in school, they excel, while I, on the other hand, was struggling. I still try my best, but there were times that trying still won’t work.” (Olivia)

“I feel like an impostor when there are individual activities. Even my accomplished tasks get a high grade, suddenly I feel. I will feel that my effort wasn’t enough because I could have done better like others. So, in this experience, the factor is social comparison.” (Isabella)

The pervasive nature of social comparisons among participants underscores the influence of peer perceptions and academic environments on impostor feelings. Participants' perceptions of falling short compared to their peers highlight the subjective nature of impostor phenomenon, wherein individuals internalize external standards of success and competence. These comparisons contribute to a cycle of self-doubt and negative self-evaluation, perpetuating impostor feelings and undermining academic confidence (Vergauwe et al., 2015). Social comparison sheds light on the psychological impact of peer interactions and social dynamics on individuals' academic experiences. The pressure to measure up to high-achieving peers can create a sense of inadequacy and self-doubt, particularly among students already grappling with impostorism. This suggests the need for interventions that address peer comparisons and promote a supportive academic culture that values collaboration over competition (Bernard et al., 2002).

4.5 Transition to University

The transition to university life represents a critical period characterized by significant academic and social adjustments, which can precipitate feelings of impostor phenomenon (IP) among undergraduate students. Consistent with previous research, participants in the current study reported experiencing challenges associated with this transition, including adapting to the academic rigor and navigating the complexities of university expectations (Credé et al., 2010).

“For me the major event was like my entrance or like my acceptance in UP, it’s like the people around me, they believe that I have the capabilities, I have something to confidently share and give but, deep inside, I know that I feel like I am not “at it”, like I don’t deserve a spot. Because unlike my peers, I was having a hard time excelling or trying to understand or like keep up with the topics.” (Jackson)

Studies have shown that the transition to university presents unique stressors and demands that may exacerbate impostor feelings among students. For instance, the sudden shift from high school to university often requires students to cope with increased academic workload, greater independence, and heightened performance expectations (Robbins et al., 2004). As participants in the current study highlighted, the pressure to meet these new academic demands can foster feelings of inadequacy and self-doubt, particularly when coupled with the perceived achievements of their peers.

The transition to university may also entail psychological adjustments related to identity development and self-concept, further contributing to impostor feelings. Research suggests that the university environment offers opportunities for self-discovery and exploration, but it can also pose challenges to students' sense of identity and self-worth (Robbins et al., 2004). For some participants, the discrepancy between their internal perceptions of competence and external expectations may intensify impostor feelings, leading to increased psychological distress.

4.6 Lack of Validation and Fear of Failure

The findings from this study underscore the profound impact of perceived lack of validation and fear of failure on the experience of impostor phenomenon (IP) among university students. Consistent with existing literature, participants identified these factors as significant contributors to their impostor feelings, highlighting the pervasive nature of these experiences in academic settings (Clance & Imes, 1978; Bernard et al., 2002).

“Okay, personally..umm lack of validation, fear of failure or high expectation and comparison to others are some factors that contributed to feeling like an impostor as a student.” (Isabella)

The notion of lack of validation resonates with previous research that has explored the role of social comparison and external feedback in shaping individuals' self-perceptions and academic self-concept (Woodcock et al., 2018). Participants in this study reported feeling undervalued or unrecognized by their peers, contributing to feelings of inadequacy and self-doubt. This aligns with studies suggesting that external validation and recognition play a crucial role in mitigating impostor feelings and fostering a sense of belonging and acceptance (Vergauwe et al., 2015).

5. Conclusion

This study has provided insights on impostor phenomenon (IP) among university students, shedding light on the academic factors contributing to the experience of the phenomenon in the academic context. Through thematic analysis of qualitative data, several key themes have emerged, including challenges associated with online learning, dissatisfaction with grades, study habits and self-evaluation, social comparison, the transition to university, and the lack of validation and fear of failure.

The findings highlight the significant impact of academic factors on impostor feelings, emphasizing the need for measures to support students in overcoming these challenges. The challenges associated with online learning, such as internet connectivity issues and financial burdens, have intensified feelings of inadequacy among students, which could be affecting those from economically disadvantaged backgrounds. Despite obtaining satisfactory grades, many participants continued to experience self-doubt, reflecting the pervasive nature of impostorism in their academic lives.

Variability in study habits and concerns about knowledge retention underscored participants' persistent feelings of uncertainty and self-doubt regarding their academic performance. Social comparison emerged as a salient theme, with participants frequently comparing themselves to high-achieving peers, leading to heightened feelings of inadequacy and impostorism. The transition to university life also presented significant challenges, including adapting to academic rigor and navigating university expectations, contributing to impostor feelings among participants. Perceived lack of validation and fear of failure emerged as significant contributors to impostor phenomenon, highlighting the importance of external feedback and recognition in mitigating impostor feelings. By recognizing and addressing these underlying factors, educators and mental health professionals can implement measures to support students in overcoming impostor feelings and achieving their full potential in academic settings.

Future research should continue to explore the experiences of impostor phenomenon among diverse student populations and investigate effective interventions to promote positive academic outcomes and well-being. Ultimately, by raising awareness and offering support, researchers can empower students to navigate the complexities of academia with confidence and authenticity.

References

- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469–480. <https://doi.org/10.1037//0003-066X.55.5.469>
- Aqil, F., Khan, S., Butt, T. A., & Mubashar, T. (2022). Impact of Impostor Phenomenon on Psychological Distress: Self-doubt of University Students regarding Online Classes Management in COVID-19. *Multicultural Education*, 8(9).
- Aziona, C. M., & Nhedzi, A. (2021). The digital divide and higher education challenge with emergency online learning: Analysis of tweets in the wake of the COVID-19 lockdown. *Turkish Online Journal of Distance Education*, 22(4), 164-182.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215. <https://doi.org/10.1037/0033-295X.84.2.191>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>

- Bechtoldt, M. N. (2015). Wanted: Self-doubting employees—Managers scoring positively on impostorism favor insecure employees in task delegation. *Personality and Individual Differences*, 86, 482-486.
- Bell, C. M., Vest, T. A., & White, S. J. (2022). Dealing with doubt: overcoming impostor syndrome in new practitioners. *American Journal of Health-System Pharmacy*, 79(6), 421-423.
- Bernard, D. L., Lige, Q. M., Willis, H. A., Sosoo, E. E., & Neblett, E. W. (2017). Impostor phenomenon and mental health: The influence of racial discrimination and gender. *Journal of Counseling Psychology*, 64(2), 155–166. <https://doi.org/10.1037/cou0000197>
- Castro, D. M., Jones, R. A., & Mirsalimi, H. (2004). Parentification and the Impostor Phenomenon: An Empirical Investigation. *American Journal of Family Therapy*, 32(3), 205–216. <https://doi.org/10.1080/01926180490425676>
- Centeno, R. P. R., & Fernandez, K.T.G (2020). Effect of Mindfulness on Empathy and Self-Compassion: An adapted MBCT program on Filipino college students. *Behavioral Sciences*, 10(3), 61. <https://doi.org/10.3390/bs10030061>
- Chakraverty, D. (2020). PhD student experiences with the impostor phenomenon in STEM. *International Journal of Doctoral Studies*, 15, 159.
- Clance, P. R., & Imes, S. A. (1978). The imposter phenomenon in high achieving women: Dynamics and therapeutic intervention. *Psychotherapy: Theory, Research & Practice*, 15(3), 241–247. <https://doi.org/10.1037/h0086006>
- Cokley, K., Awad, G., Smith, L., Jackson, S., Awosogba, O., Hurst, A., ... Roberts, D. (2015). The roles of gender stigma consciousness, impostor phenomenon and academic self-concept in the academic outcomes of women and men. *Sex Roles*, 73(9–10), 414–426. <https://doi.org/10.1007/s11199-015-0516-7>
- Cokley, K., Smith, L., Bernard, D., Hurst, A., Jackson, S., Stone, S., ... & Roberts, D. (2017). Impostor feelings as a moderator and mediator of the relationship between perceived discrimination and mental health among racial/ethnic minority college students. *Journal of Counseling Psychology*, 64(2), 141.
- Crawford, W. S., Shanine, K. K., Whitman, M. V., & Kacmar, K. M. (2016). Examining the impostor phenomenon and work-family conflict. *Journal of Managerial Psychology*, 31(2), 375–390. <https://doi.org/10.1108/JMP-12-2013-0409>
- Credé, M., Roch, S. G., & Kieszczynka, U. M. (2010). Class attendance in college: A meta-analytic review of the relationship of class attendance with grades and student characteristics. *Review of Educational Research*, 80(2), 272-295.
- Ercegil, G. (2023). The impact of academic pressure on students' mental health. *LinkedIn*. <https://www.linkedin.com/pulse/impact-academic-pressure-students-mental-health-gonca-ercegil>
- Festinger, L. (1954). Informal social communication. *Psychological Review*, 57(5), 271–282. <https://doi.org/10.1037/h0056932>
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough?: An experiment with data saturation and variability. *Field Methods*, 18(1), 59–82. <https://doi.org/10.1177/1525822X05279903>

- Hill, E. (2022) "Can feeling like an imposter be favorable? A qualitative study on the role of appraisal in harnessing the imposter phenomenon for growth". Electronic Theses and Dissertations. <https://stars.library.ucf.edu/etd2020/1024>
- Kets de Vries, M. F. K. (2014, August 1). The dangers of feeling like a fake. *Harvard Business Review*. <https://hbr.org/2005/09/the-dangers-of-feeling-like-a-fake>
- King, J. E., & Cooley, E. L. (1995). Achievement orientation and the impostor phenomenon among college students. *Contemporary Educational Psychology*, 20(3), 304–312. <https://doi.org/10.1006/ceps.1995.1019>
- Lane, J. A. (2015). The imposter phenomenon among emerging adults transitioning into professional life: Developing a grounded theory. *Adultspan Journal*, 14(2), 114–128. <https://doi.org/10.1002/adsp.12009>
- Leary, M. R., Patton, K. M., Orlando, A. E., & Wagoner Funk, W. (2000). The Impostor phenomenon: Self-perceptions, reflected appraisals, and interpersonal strategies. *Journal of Personality*, 68(4), 725–756. <https://doi.org/10.1111/1467-6494.00114>
- Li, S., Hughes, J. L., & Thu, S. M. (2014). The links between parenting styles and imposter phenomenon. *Psi Chi Journal of Psychological Research*, 19(2), 50–57.
- McGregor, L. N., Gee, D. E., & Posey, K. E. (2008). I feel like a fraud and it depresses me: The relation between the imposter phenomenon and depression. *Social Behavior and Personality: An International Journal*, 36(1), 43–48. <https://doi.org/10.2224/sbp.2008.36.1.43>
- McLean, M. (2016). *Impostor phenomenon and information technology: A study of demographic differences* (Doctoral dissertation, Capella University).
- Meurer, A. M., & Costa, F. (2020). Behold the best and worst of me: the impostor phenomenon and academic behavior in the business area. *Scielo*. <https://doi.org/10.1590/1808-057x201910370>
- Negga, F., Applewhite, S., & Livingston, I. (2007). African American college students and stress: School racial composition, self-esteem and social support. *College Student Journal*, 41(4), 823–830.
- Robbins, S. B., Lauver, K., Le, H., Davis, D., Langley, R., & Carlstrom, A. (2004). Do psychosocial and study skill factors predict college outcomes? A meta-analysis. *Psychological bulletin*, 130(2), 261.
- Sonnak, C., & Towell, T. (2001). The impostor phenomenon in British university students: Relationships between self-esteem, mental health, parental rearing style and socioeconomic status. *Personality and Individual Differences*, 31(6), 863–874. [https://doi.org/10.1016/S0191-8869\(00\)00184-7](https://doi.org/10.1016/S0191-8869(00)00184-7)
- Tenny, S., Brannan, J.M., Brannan, G.D. (2022). Qualitative study. *Treasure Island (FL): StatPearls Publishing*. <https://www.ncbi.nlm.nih.gov/books/NBK470395/>
- Vergauwe, J., Wille, B., Feys, M., De Fruyt, F., & Anseel, F. (2015). Fear of being exposed: The trait-relatedness of the impostor phenomenon and its relevance in the work context. *Journal of Business and Psychology*, 30, 565–581.

- Want, J., & Kleitman, S. (2006). Imposter phenomenon and self-handicapping: Links with parenting styles and self-confidence. *Personality and Individual Differences*, 40(5), 961–971. <https://doi.org/10.1016/j.paid.2005.10.005>
- Young, S. S. & Karr, A. (2011). Deming, data and observational studies. *Royal Statistical Society*. <https://doi.org/10.1111/j.1740-9713.2011.00506.x>