

# Journal of Multidisciplinary Research

---

Vol. 13, No. 2

Fall 2021

# Journal of Multidisciplinary Research

ISSN 1947-2900 (print) • ISSN 1947-2919 (online)

|  |   |
|--|---|
| <b>Publisher &amp; Editor-in-Chief</b> | Hagai Gringarten, Ph.D.   |
| <b>Managing Editor</b>                 | The Reverend Raúl Fernández-Calienes, Ph.D.                           |
| <b>Associate Editor</b>                | Ya'akov M. Bayer, Ph.D., <i>Ben Gurion University of the Negev</i>    |
| <b>Assistant Editor Law</b>            | Anne-Marie Mitchell, J.D., <i>Kelley Drye &amp; Warren, LL.P., NY</i> |
| <b>Student Corner Editor</b>           | David Advent, <i>Florida State University</i>                         |
| <b>Book Review Editor</b>              | tba   |
| <b>Photo Editor</b>                    | Scott E. Gillig, Ph.D.  |
| <b>Technical Support</b>               | Manuel Canoura  |

## Contact Information

Professor Hagai Gringarten, Ph.D., Editor-in-Chief, *Journal of Multidisciplinary Research*  
c/o O'Mailia Hall, 16401 N.W. 37<sup>th</sup> Avenue, Miami Gardens, Florida 33054  
Telephone +1 (305) 628-6635 E-mail: [hgringarten@stu.edu](mailto:hgringarten@stu.edu)

**Journal Web Address** <http://www.jmrpublication.org>

## Journal Indexing & Listing

Indexed in [ProQuest](#), [Cabells](#), [EBSCO](#), [Gale-Cengage Learning](#), [CiteFactor](#), [Ulrich's](#), [de Gruyter](#) (Germany), [Elektronische Zeitschriftenbibliothek \(EZB\)](#) (Germany), [European Reference Index for the Humanities and the Social Sciences \(ERIH PLUS\)](#) (Norway); and [Directory of Open Access Journals \(DOAJ\)](#) and [Directory of Open Access Scholarly Resources \(ROAD\)](#).

Listed in [AcademicKeys](#), [Cision Directory](#), [EconPapers](#), [Gaudeamus](#), [Google Scholar](#), [Isis Current Bibliography](#), [JournalSeek](#), [Journals4Free](#), [The Linguist List](#), [MediaFinder](#), [Microsoft Academic](#), [NewJour](#), [Research Papers in Economics \(RePEc\)](#), [ACNP](#) (Italy), [BVB-Bibilotheeks Verbund Bayern FAST-Zugang](#) (Germany), [CIRC](#) (Spain), [COPAC](#) (England), [CORE](#) (UK), [CUFTS Journal Database](#) (Canada), [EconBiz](#) (Germany), [Edanz](#) (Japan), [Globethics](#), (Switzerland), [HEC Paris Journal Finder](#) (France), [Library Hub Discoverer](#) (UK), [MIAR](#) (Spain), [Mir@bel](#) (France), [NSD - Norwegian Register](#) (Norway), [PhilPapers](#) (Canada), [REBIUN-CRUE](#) (Spain), [SUDOC](#) (France), [ZeitschriftenDatenBank \(ZDB\)](#) (Germany), and the [Open University of Hong Kong Electronic Library](#) (Hong Kong).

Accessible via [BASE-Bielefeld Academic Search Engine](#) (Germany), and [NIST Research Library](#) (National Institute of Standards and Technology, part of the U.S. Department of Commerce).

## Mission Statement

The mission of the *Journal of Multidisciplinary Research* is to promote excellence by providing a venue for academics, students, and practitioners to publish current and significant empirical and conceptual research in the arts; humanities; applied, natural, and social sciences; and other areas that tests, extends, or builds theory.

# Journal of Multidisciplinary Research

---

**Vol. 13, No. 2**

**Fall 2021**

---

## Contents

Editorial Details...inside front cover  
Mission Statement...inside front cover  
Editorial Review Board...inside back cover

Editorial  
By Hagai Gringarten...3

## Articles

Government Assistance Programs and Tax Obedience in COVID-19 Times  
By Nellie Munin and Karnit Malka-Tiv...5

Effects of Leadership on an Organizational Culture Producing Quality  
Products and Services  
By Noah Dula and Herman Tang...21

Why Patients Lie: A Self-Discrepancy Theory Perspective of Patient  
By Gary Daniel Futrell...43

The Relative Age Effect in Higher Education  
By Michal Ben Eli, Maytal Shabat Simon, and Orr Levental...59

The Impossible Interview: A Two-Stage Interview Case for Auditing  
Students  
By J. L. Souza, Veronica Paz, Syed Zaidi, and Samantha Dzielski...75

## Life Forward

Kuty Meriden: Sports Management Expert and Administrator  
By Hagai Gringarten...109

## **Student Corner**

Power and Reward Processing

By Cady Ujvari...113

## **Book Review**

Mind and Matter Matter: Review of *Endure: Mind, Body, and the Curiously Elastic Limits of Human Performance*, by Alex Hutchinson.

By Will Murphy...123

## **Index to Volume 13**

Journal of Multidisciplinary Research: Index to Volume 13 (2021)

By Raúl Fernández-Calienes...125

About the Journal...129

*Journal of Multidisciplinary Research*, Vol. 13, No. 2, Fall 2021, 3.  
ISSN 1947-2900 (print) • ISSN 1947-2919 (online)  
Copyright © 2021 by St. Thomas University. All rights reserved.

## Editorial

Ray Dalio, an American investor and hedge fund manager, said that, “The greatest gift you can give someone is the power to be successful. Giving people the opportunity to struggle rather than giving them the things they are struggling for will make them stronger.” Here at the *Journal of Multidisciplinary Research* (JMR), we give the “opportunity to struggle,” by providing a global platform for researchers and practitioners.

This Volume 13, Number 2, edition of the JMR features interesting research from around the globe. A timely article from Zefat Academic College in Israel examines measures and potential link between government assistance programs and tax obedience in COVID-19 times. A study from Eastern Michigan University considers the aspects of management styles to evaluate how employee satisfaction would provide an organization with effective outcomes. A study from Valdosta State University enhances our understanding of patient deception by using self-discrepancy theory (SDT) to examine patient lying. A collaborative research study comes from the University of Haifa and Tel Hai Academic College in Israel, analyzing the magnitude and characteristics of the relative age effect and physical and mental advantages. Another collaborative effort by researchers from Louisiana State University, Saint Joseph University, and Indiana University of Pennsylvania focuses on risk assessment and critical evaluation of audit evidence, primarily through audit interviews.

We also have an interesting student article from the University of Dayton in our “Student Corner.” The student investigates how power and social status affect the neuronal processing of feedback on the gain or loss of incentives. In our “Life Forward” section, we feature an interesting interview with Kutty Meriden, a sports management expert and Chief Executive Officer of the Cosell Center for Physical Education at the Hebrew University of Jerusalem. In addition, we review the book *Endure: Mind, Body, and the Curiously Elastic Limits of Human Performance* by Hutchinson.

As we approach the end of 2021, I wish you Merry Christmas, Happy Chanukah, and a happy, productive, and successful 2022!

Always forward,

Hagai Gringarten, Ph.D.  
*Publisher and Editor-in-Chief*



“Pike Place Market in Seattle”  
2021

Photography by Scott E. Gillig

Image Copyright © by Scott E. Gillig.  
All rights reserved. Used with permission.

# **Government Assistance Programs and Tax Obedience in COVID-19 Times**

**Nellie Munin**

*Zefat Academic College, Israel*

and

**Karnit Malka-Tiv**

*Zefat Academic College, Israel*

## **Abstract**

Against the COVID-19 era, this article examines the potential link between tax obedience, economic crises, and the measures governments have taken to pull out of them. It sums up relevant literature, particularly addressing the lessons of tax avoidance in other countries during the 2008-2010 financial crisis. It compares the assistance the Israeli government has given to unemployed taxpayers during the COVID-19 crisis with OECD recommendations and other countries' practices, to establish a potential link between tax obedience and taxpayers' dissatisfaction from government assistance. An empirical analysis of Israeli taxpayers' replies to a questionnaire the authors disseminated reinforces these assumptions in practice.

*Keywords:* Tax obedience, tax avoidance, COVID-19

## **Introduction**

Tax payment is a major civil duty in a modern state. Israel was established in 1948. Its government immediately introduced taxes to finance its activity. The first taxes it imposed were basic, relying on the former British mandatory law. Until now, Israeli Income Tax Ordinance and Customs Ordinance are of these origins. In 1952, the Israeli government introduced a Luxury Tax, aiming to tax the rich who could afford luxuries such as cars and electrical appliances in times of severe austerity. This tax was later transformed into purchase tax, which still exists on particular products. Since 1965, taxes on purchases and sales of real estate exist in Israel. In



1975, Value Added Tax came into force. Its rate varied over the years, subject to government policy. Since 2015, it is 18%. Excise duty applies to fuel, alcoholic beverages, and cigarettes, aiming to reduce their consumption. While the indirect taxes (customs duty, value added tax on consumers, purchase tax, excise) and direct taxes on employed individuals are withheld, self employed individuals and corporations must actively report to the tax authority and pay their taxes (income tax, corporate tax, indirect taxes they collect from customers), respectively. While Israelis believe that the total effective tax burden in Israel is high in comparison to other countries, an OECD review revealed that the average composite effective tax rate in Israel in 2020, set at 21.6%, is not among the highest rates measured in the 77 countries to which this review (OECD, 2021a).

Broad tax avoidance undermines governance. Several factors affect tax obedience, including the overall tax burden and the ratio between it and income, enforcement effectiveness, and taxpayers' understanding and identification with tax-paying importance (Lesnik et al., 2014, p. 132).

In times of severe economic crises, the temptation to avoid tax payments grows. Such an act may involve protest against a government's perceived responsibility for the crisis or its failure to handle it.

The COVID-19 pandemic hit the global economy in early 2020. In Israel, it caused a sharp unemployment increase, from %3.8 in 2019 to 18.2% in 2020. A total of 75,000 businesses ceased to exist,<sup>1</sup> and others still struggle with the aftershock.

In the beginning, the International Monetary Fund (IMF) assessed that this crisis could lead to the greatest recession since the 1930s (Crustinger, 2020). The World Trade Organization considered it as the worst economic crisis since World War II (WTO, 2020).<sup>2</sup>

The scope of an economic crisis may affect the scope of tax avoidance. The COVID-19 effect on the Israeli economy was considerably severer than the effect of the global 2008-2010 financial crisis. Thus, the authors believed that this fact could adversely affect tax obedience.

This article describes an attempt by the authors to predict tax obedience during the COVID-19 pandemic in Israel, at its early stages. The first, theoretical section, overviews relevant literature, particularly addressing the lessons of tax avoidance in other countries during the 2008-2010 financial crisis. The authors tried to rely on such lessons to predict tax obedience in Israel during the pandemic. The second section compares the assistance the Israeli government has given to unemployed taxpayers during the crisis with Organization for Economic Cooperation and Development (OECD) recommendations and other countries' practices, suggesting that a link may exist between tax obedience and taxpayers' dissatisfaction from government assistance. Then, it analyzes Israeli taxpayers' replies to a questionnaire the authors disseminated, confirming these assumptions in practice. The third section concludes.

---

<sup>1</sup> Before the crisis, the recent decade in Israel, approximately 50,000 new businesses opened each year, and 40,000 ceased to exist, an annual addition of 10,000 new businesses. In 2020, only 40,000 new businesses opened, while 75,000 perished, namely the market shrunk by more than 30,000 businesses (Chen, 2020).

<sup>2</sup> This forecast was moderated later (WTO, 2020a). See later data on the pandemic's global effect: Statistica (2021), Maital and Brzani (2020), and Chudik et al. (2020).



## **Section 1: Tax Obedience in Times of Economic Crises**

Economic crises cause payments – including tax payments – delays. As businesses' economic challenges grow, sometimes leading to insolvency,<sup>3</sup> the odds for tax revenues decrease. Businesses experiencing cash flow difficulties may artificially enlarge their expenses to gain VAT refunds, or to avoid tax reports or payment, to enjoy the unpaid sums (Moscarini, 2017, p. 17). Despite the risk, some taxpayers may prefer tax avoidance over bankruptcy (Moscarini, 2017, p. 5).

Tax avoidance may serve as an alternative 'credit' source for businesses unable to raise credit. In China, some (Cai & Liu, 2009) have drawn a correlation between tax avoidance and recession, combined with a credit crunch.

Moreover, businesses stressed due to the crisis may accumulate losses. They may use them in future years to diminish their tax charges (Brondolo, 2009). While this practice is legal, it decreases tax revenues when they are necessary to pull out of the crisis.

### **Crisis Handling Approaches**

Two major schools examine businesses' behavior in economic crises:

*The neo-classic economic theory* suggests that policy decisions should assume that all players are rational and clean of any unreasonable effects. Thus, the best policy is the one helping economic players maximizing their wealth (Epstein, 2008, p. 804).

*The behavioral economy* (Thaler & Sunstein, 2009) contends that human beings are not always rational players. They make decisions based on emotions, imperfect knowledge or information, over-valuation of their assets, and over-confidence as to the correctness of their decisions.<sup>4</sup>

### **Tax Authority's Behavior in Times of Crises**

Some believe that during economic crises, tax authorities tend to avoid strict enforcement of tax laws. An increase in tax offenses in such times is more acceptable socially (Posner, 2009, p. 6). However, such reluctance could encourage ongoing tax avoidance (Borondolo, 2009, 7). Moreover, in the 2008-2010 financial crisis' context, the International Monetary Fund (IMF) indicated that despite the temporary relief offered to taxpayers, giving up tax enforcement in times of crisis is distortive, undermines equality, and harms the tax base establishment in the medium term.

The literature suggests that in such times, the tax authorities should change their approach. They should improve communication with taxpayers and focus enforcement in areas where disobedience implies the greatest risk to tax collection. A professional committee may be established, to define the major risks to state revenue and plan a strategy for effective tax collection (Borondolo, 2009, pp. 3, 8).

---

<sup>3</sup> Bankruptcy etc. could lead to a loss of knowledge, practices, and capabilities existing within a network involving entrepreneurs, employers, employees, and customers. Such a loss may harm future business' profitability and, consequently, its tax charges (Fujita & Moscarini, 2017).

<sup>4</sup> See examples in Posner (2009).

## **The COVID-19 Pandemic**

COVID-19 was announced as a global pandemic by the World Health Organization (WHO) on March 11<sup>th</sup>, 2020. Israel applied a lockdown, to diminish its spread (Dekel, 2020).

By the end of 2020, Israel experienced three waves of the pandemic. The Israeli government opened and closed the market subject to the illness rates. At the height of the pandemic, there were more than one million unemployed workers in Israel (out of some nine million citizens). By the end of 2020, Israel started to vaccinate its citizens. More than half are already vaccinated, and the market seems to return gradually to full capacity. However, unemployment rates are still high, and many businesses have not recovered.<sup>5</sup>

When the crisis burst, accountants appealed to the Israeli High Court of Justice to obtain a delay in businesses tax payments, e.g., VAT. The court dismissed the appeal providing that it would not interfere in economic policy issues, subject to government responsibility (Israeli High Court of Justice, 2020). At that time, economic policy in Israel focused on survival, i.e., help to households, businesses, and organizations by tax payments postponement and grants to enhance liquidity. As the crisis evolved, plans to rehabilitate businesses and create incentives for growth, e.g. by enhancing demand, became necessary (Kaplinski & Tzadik, 2020). During the crisis, the Israeli government initiated some financial schemes to support businesses (Israeli Ministry of Finance, 2020), but they are generally perceived insufficient.

## **Between the Financial Crisis and the COVID-19 Crisis**

Comparison between the 2008 global financial crisis and the current COVID-19 crisis reveals that both led to a downward swirl: lacking available financing, the financial and economic sectors could find themselves in a sellers' market, leading to price decreases. Those who could afford waiting waited, causing economic stagnation.

The longer the crisis lasts, the more severe its effects.

### *Tax Effects of the Crises*

Between 2007 and 2009, the tax collection in OECD countries diminished by 1.4% of the GDP. In non-OECD countries, tax collection diminished in lower rates; in Latin American and Caribbean countries by 0.6%, in Africa by 0.8%. Out of 98 countries monitored by OECD, 90 experienced a decrease in tax collection between 2007 and 2010. The global financial crisis and the measures governments took consequently explained it. Several years passed before tax revenues returned to their rates before the crisis (OECD, 2021).

When the COVID-19 crisis burst, the OECD predicted differences among countries in this respect, based on the different effects of the pandemic they could experience and their level of development (OECD, 2020).

### *The Israeli Market Before the Crises*

Comparison between the Israeli market before the two crises burst reflects inconsistent parameters:

---

<sup>5</sup> See vaccination effect on the global growth prospect (Oxford Economics, 2020).

- The growth rate before the 2008 crisis was higher than before the COVID-19 crisis.
- The deficit rate before the 2008 crisis was substantially lower than before the COVID-19 crisis.
- The low interest rate before the COVID-19 crisis did not enable the initiation of extending policies based on interest rate decrease that were initiated during the 2008 crisis (OECD, 2020, pp. 5-13).

However, the Debt-GDP ratio, interest payments from GDP, and the unemployment rate were better when the COVID-19 burst than in 2008.

### *The Public Opinion in Israel*

Due to the minor effect of the 2008 crisis on the Israeli market, the Israeli government avoided initiating any assistance scheme for the private sector.<sup>6</sup> The COVID-19 pandemic seriously challenged this approach.

However, a sociological survey taken in Israel during the early stages of the crisis reflects public frustration and disappointment regarding the insufficient 'economic safety net' the Israeli government offered to those who perceive themselves as productive citizens. During the crisis, these voices became more dominant, some calling for a tax revolt (Samocha, 2020). Such reactions did not follow the 2008 crisis, perhaps because it did not hit Israel severely.

## **Section 2: Tax Avoidance in Israel Due to the Pandemic**

### **OECD Recommendations Regarding Tax Policy following the Crisis**

The OECD (2021) distinguished emergency steps taken to stabilize economies in the short run, following the crisis burst, from measures that should be taken to rehabilitate national economies in the medium and long run. The latter should coordinate tax policies with health, trade, social, labor, financial, and monetary policies.

The OECD specified short-term measures countries took to handle the crisis. These measures include, among others, the extension of tax reporting deadlines, of tax payment deadlines and tax exemptions in certain circumstances, of tax debts payment deadlines, reliefs in depreciation calculations. In certain countries, these measures complement subsidization and government payments, to improving households' and businesses' cash flows and at encouraging investments (OECD, 2020a). The OECD recommended postponing tax payments as an alternative to low interest bank loans. Also, it recommended that countries consider giving temporary exemptions, or decrease specific taxes such as property taxes and turnover taxes. In cases in which states give direct financial assistance, the OECD suggested taxing as incomes such payments given to richer households, but not to low-income households. It stressed that the scope of assistance through the tax system should depend on the level of state development (OECD, 2021, pp. 24-25, 28; Mankiw, 2020; Marron, 2020), and its economic situation. The OECD warned that state assistance could trigger abuse. It urged tax authorities' awareness,

---

<sup>6</sup> According to the OECD (2021, p. 21), many countries took a similar choice following the 2008 crisis, even when they could afford supporting the private sector. Consequently, recovering from that crisis took longer than possible.

recommending them to handle such cases by enforcement, combined with public explanation and communication with taxpayers (OECD, 2021, pp. 29-30).

### **The Israeli Government's Policy**

The depth and length of the COVID-19 crisis forced Israeli government's interference. Like other governments, the Israeli government had to use financial reserves and take loans to finance this broad-scale interference. The inability to predict the length of the crisis assumed considerable pressure on the Israeli government. Israel's current financial deficit exceeds NIS 160 billion. Clearly, once the crisis is over, far-reaching economic and fiscal measures will be necessary to refill the state coffers.

#### ***First Stage: Government Assistance during the First Phase:<sup>7</sup>***

##### ***A. The First Pulse Grant***

Those whose annual taxable income for 2018 did not exceed NIS 240,000 (about \$72,700), and with their spouse's income did not exceed NIS 340,000 (about \$103,000) were eligible to the 'first pulse' grant, between March and June 2020, up to a ceiling of NIS 6,000 (about \$1,800). The grant was subject to additional conditions: the beneficiary's average monthly taxable income from business in 2018 exceeded NIS 2,000 (some \$600), and the turnover in March-April 2020 decreased, in comparison to the equivalent 2019 period, by more than 25%.

##### ***B. The Second Pulse Grant***

The Israeli government offered a 'second pulse' grant equivalent to 70% of business income, up to NIS 10,500 (about \$3,180), starting April 2020, to businesses that were active on February 29<sup>th</sup>, 2020. (This condition excluded many small businesses, which opened later.) Only businesses that earned at least an average of NIS 714 per month, subject to assessed 25% turnover decrease in March-June 2020, compared to the equivalent period in 2019, were eligible. This condition excluded yet another substantial group of potential beneficiaries. Individuals who conducted their businesses through small companies were eligible to a similar grant.

The small amounts of grants, paid only once per each applicant, and the excluding conditions, triggered severe public criticism.

##### ***C. Fixed Expenses Grant***

Another grant, which the Israeli government initiated in April 2020, up to NIS 400,000 (about \$121,000 per business), covered fixed expenses for small and medium-sized businesses, having an annual turnover of up to NIS 20 million (about \$6 million). Unlike the previous grants, this grant aimed to benefit businesses that have not outsourced employees, or fired or suspended a lower percentage of their employees.

However, critics contended that powerful employers – who were not in urgent need for assistance – assumed political pressure on the government to initiate it, threatening to fire more

---

<sup>7</sup> Granted according to the Executive Order of the Tax Authority (Israeli Tax Authority, 2021).

employees or close their businesses altogether during the pandemic, to save operational expenses.

### ***Second Stage: The Ministry of Finance's Economic Plan to deal with the Pandemic:*<sup>8</sup>**

After the initiation of the 'emergency measures' specified above, the Israeli government initiated a medium-term scheme to help employees, businesses, and self-employed individuals through the crisis. This scheme involved the following additional grants:

#### ***A. Aid Grant for the Self-employed and Employees who control some Companies during the COVID-19 Period***

This grant was given bi-monthly starting from May-June 2020 until March-April 2021 to businesses experiencing a decrease of at least 40% in the turnover during the "eligibility period," compared to equivalent months in 2019.

The maximum grant was NIS 7,500 (about \$2,100) per month, or NIS 15,000 (\$4,200) for two months during the eligibility period.

#### ***B. Participation in Fixed Expenses Grant***

The grant is given to companies or partnerships whose turnover in 2019 ranged from NIS 18,000 (some \$6,000) to NIS 400 million (about \$121,000), or to self-employed individual whose yearly turnover ranged from NIS 300,000 (about \$91,000) to NIS 400 million. The grant was given between May 1, 2020, and June 30, 2021. The grant was subject to decrease of 40% to 80% in business turnover during the pandemic, compared to previous year, depending on the volume of the business.

In addition, all businesses with a turnover of less than NIS 400 million are eligible for state-guaranteed loans.

Despite state guarantee, the banks are reluctant to give these loans, fearing that such small and medium businesses may not recover from the crisis, or alternatively, offer them on unfriendly terms. Moreover, owners of such small and medium businesses are afraid to take such loans for the same reason.

#### ***B. Grant for Continuous Economic Harm*<sup>9</sup>**

This is another potential grant for small businesses, ranging from NIS 3,000-9,000 (\$900-2,700), subject to a 25% turnover decrease. Larger businesses are entitled to similar grants if their turnover for March-December 2020, including the grants received from the state, did not exceed their turnover in the equivalent 2019 months.

Businesses with turnover ranging from NIS 300,000 to NIS 400 million are entitled to larger grants, from NIS 9,000 to NIS 50,000 (about \$15,000).

Public criticism on this entire mechanism contended it is not user-friendly, involving much bureaucracy (unlike the payment systems in the US and in the EU discussed below) and

---

<sup>8</sup> Granted according to the Law on Economic Assistance Program (Israeli Knesset, 2021).

<sup>9</sup> Granted according to Amendment No. 4 of the Law Economic Assistance Program (Israeli Knesset 2021a).

offers insufficient sums, particularly for small businesses. Moreover, as the OECD predicted, this assistance scheme triggered abuse, encouraging unreported work to officially maintain the decrease in business activity necessary to receive the grants. Consequently, those who engaged in unreported work avoided tax payment for it.

### *Unemployment Allowances*

Usually, in Israel, entitlement to unemployment allowances is subject to at least 12 months of sequential work and is given for a limited period of several months. To challenge the unusual rate of unemployment due to the pandemic, the Israeli government shortened the necessary working period and extended the eligibility period for unemployment allowances until June 2021. This benefit turned into an obstacle once the market started operating again, during April 2021: Many employees refuse to go back to work as long as they are eligible for these allowances.

### *State Comptroller's Criticism regarding Government Assistance to Businesses during the COVID-19 Crisis*

An interim report released by the Israeli State Comptroller (2020) regarding the functioning of the Israeli Tax Authority during the crisis indicates that it did not take effective action to encourage grant application among those who were legally entitled to the grants. It is possible, therefore, that due to the Authority's passive functioning and technical failures, eligible people did not receive grants. In 2,370 cases, eligible applicants did not receive the grants since the Tax Authority did not have their updated bank account details. The waiting time at the Tax Authority's call center was long, despairing over half of the callers. The report also notes a lack of synchronization with other authorities' computer systems, such as Social Security's system, which caused failures.

### *Comparison to Other Countries' Assistance*

During the COVID-19 crisis, Israeli citizens heard with envy detailed reports in the media regarding the generous financial support offered by the US's government to its citizens. It included, among other things the following:

- \$1,400 economic impact payments, directly paid to those eligible to their bank accounts, in a form of paper check or debit card. This convenient process was compared to the unfriendly bureaucracy involved with COVID-19 payments in Israel.
- Small businesses in the US were eligible to forgivable loans, designed to provide a direct incentive for small businesses to keep their workers on payroll (PPP); loans providing economic relief to small businesses and non-profit organizations currently experiencing a temporary loss of revenue (EIDL), up to loan amount of \$500,000, with increase potential in certain terms; the Restaurant Revitalization Fund (RRF) provides funding to help restaurants and other eligible businesses keep their doors open. This program provides restaurants with funding equal to their pandemic-related revenue loss up to \$10 million per business and no more than \$5 million per physical location. Recipients do not have to repay the funding as long as they use the funds for eligible uses no later than March 11, 2023; the Stuttered Venue

Operators Grant (SVOG) offers over \$16 billion in grants; the SBA debt relief provides a financial reprieve to existing borrowers during the pandemic (United States Small Business Administration, 2021).

The European Union was another source for comparison. It also offered varied support programs to its Member States and citizens; see, for example, the following:

- SURE (Support to mitigate **U**nemployment **R**isks in an **E**mergency) - a program that can provide financial assistance up to €100 billion in the form of loans from the EU to affected Member States to address sudden increases in public expenditure for the preservation of employment. It acts as a second line of defense, supporting short-time work schemes and similar measures, to help Member States protect jobs and thus employees and self-employed against the risk of unemployment and loss of income. Loans under this scheme are voluntarily guaranteed by EU Member States. 75.5 bn € have been disbursed to 17 Member States, and the scheme is still open for applications.
  - The EU enhanced its Youth Guarantee program, operating since 2013, to enhance youth employment (European Commission, 2021).
  - The EU invested billions of Euros to incentivize local banks to provide small and medium businesses immediate relief, to help them survive the crisis and is working out future mechanisms to enlarge this support (European Commission, 2021a).<sup>10</sup>
  - As early as April 2020, the EU adopted a banking package to help facilitate bank lending to households and businesses throughout the EU. It involves flexibility of EU's banking rules to meet the crisis' challenges.
  - The EU initiated a temporary state aid program, involving flexible rules, to allow its Member States to provide direct support for hard hit companies and small firms as they may risk closing down without support. Such support may include direct grants or tax advantages, subsidized state guarantees or bank loans, public or private loans with subsidized interest rates, etc. It also modified the rules to facilitate the availability of short-term export credit (European Commission, 2021c).
  - To support tourism, the EU undertook a series of measures, including Member States' encouragement to introduce vouchers and other liquidity schemes and 8bn€ EU funding for small and medium businesses in this sector (European Commission, 2021d).
- In total, the EU invested in this effort €3.7 trillion.

Naturally, stressed Israeli citizens did not pay too much attention to the difference in wealth and capacities between the small Israeli economy and these large economies. There was criticism that the Israeli scheme did not offer any unique compensation to sectors that the crisis particularly harmed, such as restaurants and tourism (to which the US's and EU's schemes respectively addressed) as well as the entertainment and ballrooms industries.

In particular, the lack of due compensation to self-employed workers, who are not entitled to unemployment allowances under the Israeli law, triggered public calls in the social networks to tax revolt. Already at the end of April 2020, these calls triggered some deeds.<sup>11</sup> In

---

<sup>10</sup> See specific financing programs in European Commission (2021b).

<sup>11</sup> During the night of April 28<sup>th</sup>, 2020, two Molotov Cocktails were thrown into the Tax Authority's office in Holon, a city in the center of Israel (Ravid, 2021).



July 2020, during the second ‘wave’ of the pandemic, these calls became louder.<sup>12</sup> Israeli courts determined before the crisis that economic difficulties are unacceptable excuses for tax avoidance (e.g., Israeli District Court, Jerusalem, 2005, 2006; Israeli Supreme Court, 2001) considered a criminal offense. This position is applicable, even in times of crisis.

## **Empirical Survey**

The authors of this study conducted an empirical survey between May 10<sup>th</sup> 2020 and August 15<sup>th</sup>, 2020, examining taxpayers’ positions and their willingness to commit tax offenses in times of the COVID-19 crisis, subject to their position regarding State assistance to businesses in general, and to their business in particular.

The survey examines *short-term* taxpayers’ positions.

**The hypothesis** underlying the survey held that tax obedience in the COVID-19 crisis would be affected by the way taxpayers perceive government reaction to the crisis.

To collect the data, the authors disseminated a questionnaire by Google Docs. A total of 46 participants filled it. It was difficult to find participants. Many hesitated to reply, due to the sensitive issue at stake. Thus, this survey is not a statistically representative sample, but rather an indication of public opinion and public spirit during the period it was taken.

The questionnaires consisted of several sections. *The first section* involved background details about the respondents and their economic activity. The respondents live in all regions of Israel: north, south, and center. More than 95% gained high school or academic education. A total of 63% are full-time self-employed, and another 21.7% are part-time self-employed and part time employees. Their average ages scaled between 40 and 60, and their average annual turnover scaled between NIS 1,000,000 and 5,000,000 (approximately \$300,000-1,500,000).

*The second section* examined the respondents’ moral positions regarding tax payment. *The third section* examined the status of the respondents’ businesses during the crisis, their positions regarding government’s financial assistance, and their consequential position regarding tax payment during the crisis.

Respondents’ answers regarding the impact of government activity during the COVID-19 crisis on their businesses indicate that many felt that government mal-functioning during the crisis damaged their businesses. They also felt that government assistance was insufficient. For example, 47.80% of the respondents strongly agreed with the statement that “it took the government too long to call off lockdowns and resume business activities.” Also, 73.9% strongly agreed with the statement that “the government could help business owners more during the COVID-19 crisis.” 71.7% strongly agreed that “aid to small/medium sized businesses is insufficient.”

A total of 45.6% of the respondents strongly agreed with the statement that the call by many to avoid tax payment during this period is legitimate.

The full questionnaire’s analysis draws a clear link between respondents’ positions regarding government’s malfunctioning, potentially enhancing their cash/credit shortage, and their unwillingness to pay the tax, as can be seen in the following table.

---

<sup>12</sup> E. G. Judy Shalom Nir Mozes (2020), a well-known publicist and the ex-wife of a former Israeli Minister of Finance, published an article titled: I call people to stop paying taxes.

**Table 1**  
***Respondents' Position***

| <b>Public positions regarding government functioning</b> | <b>N</b> | <b>Tax obedience</b> |            |
|--|----------|----------------------|------------|
|  |          | <b>Rp</b>            | <b>Sig</b> |
|  | 46       | -<br>**0.78          | 0.002      |

(sig<0.05=0.002). Correlation is negative (Rp=-0.78), namely: The more negative the public's position regarding government's functioning, the more they will tend to avoid tax payment.

### **Conclusion**

This article reflects correlation between positions in the literature and in reality. Both indicate a clear linkage between tax obedience in times of crisis with basic taxpayers' approaches towards it, affected by their cash/credit shortage, and perception of government's functioning.

Israel is a small country, which does not enjoy the wealth of giants like the US and the EU. Thus, its moderate financial support in times of crises is inevitable. Nevertheless, the Israeli government could have avoided functional failures that critics invoked, e.g., by improving coordination between relevant authorities and computer systems, by decreasing bureaucracy and establishing user-friendly mechanisms to obtain grants, and by taking a more active role to ensure that all eligible citizens would get the grants, etc. Such actions could have improved the public opinion regarding the government's handling of the crisis and – consequently – their willingness to pay taxes.

The link between dissatisfaction from government's functioning and willingness to pay taxes is well reflected by the survey, taken after the first lockdown in Israel, before the initiation of the medium-term assistance plan (the second stage of government assistance), drawing a short-term picture.

One encouraging detail it reflects is a substantial gap between those who indicate insufficient government assistance (over 70% of respondents) and those who explicitly support tax avoidance under the circumstances (45.6% of respondents).

During 2020, the Israeli Tax Authority collected 3.6% more income tax from employees, compared to 2019, while collection from self employed taxpayers and companies decreased by 4.7%. VAT collection decreased by 2%. To a certain extent, the fact that 90% of the taxes are paid by the three top deciles could explain these data. A total of 55% of Israeli citizens do not pay income tax at all, since they earn nothing or very low incomes, or do not report their earnings. Their firing or unemployment during the crisis made no difference in terms of tax collection.<sup>13</sup> The gap between income tax collection from employees and self-employed could reflect that the latter suffered more from the crisis. However, it may also support our survey's

---

<sup>13</sup> TheMarker (2021). How come Israeli employees paid more taxes during Corona year? [Hebrew], <https://www.themarker.com/hblocked?returnTo=https%3A%2F%2Fwww.themarker.com%2Fblogs%2F1.9531558>

findings, since income tax is withheld from employees' salaries, while self employed taxpayers are responsible for tax reporting and tax payment for their business.

The credit shortage, which is expected to last, despite the recent period, in which Israel seemed to pull out of the crisis due to intensive vaccination of its population, and the new pandemic wave that seems to currently evolve due the Delta variant, may trigger further tax avoidance.

### References

- Brondolo, J. (2009). Collecting taxes during an economic crisis: Challenges and policy options. IMF Fiscal Affairs Department, Staff Position Note, <http://www.imf.org/external/pubs/ft/spn/2009/spn0917.pdf>
- Cai, H., & Liu, Q. (2009). Competition and corporate tax avoidance: Evidence from Chinese industrial firms. *The Economic Journal*, 119, pp. 764–795.
- Chen, G. (2020). For the first time in a decade, more businesses closed than opened, [https://www.mako.co.il/news-money/2020\\_q4/Article-dbbac2e5c08b671026.htm](https://www.mako.co.il/news-money/2020_q4/Article-dbbac2e5c08b671026.htm) [Hebrew].
- Chudik, A., Mohaddes, K., Pesaran, M. H., Raissi, M., & Rebucci, A. (2020). Economic consequences of COVID-19: A counterfactual multi-country analysis. <https://voxeu.org/article/economic-consequences-covid-19-multi-country-analysis>
- Crutsinger, M. (2020, April 30). International Monetary Fund head predicts Coronavirus will trigger 'worst economic fallout since the Great Depression.' *Time*, <https://time.com/5818819/imf-coronaviruseconomic-collapse>
- Dekel, U. (2020). Handling the COVID-19 Crisis – A systematic approach. INSS, Tel Aviv University [Hebrew]. <https://www.inss.org.il/he/publication/coronavirus-special-publication/>
- Epstein, R. A. (2008). The neoclassical economics of consumer contracts. *Minnesota Law Review*, 92, 803.
- European Commission. (2021). Jobs and economy during the coronavirus pandemic. [https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/jobs-and-economy-during-coronavirus-pandemic\\_en](https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/jobs-and-economy-during-coronavirus-pandemic_en)
- European Commission. (2021a). Supporting European businesses during the pandemic. [https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/jobs-and-economy-during-coronavirus-pandemic/supporting-european-businesses-during-pandemic\\_en](https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/jobs-and-economy-during-coronavirus-pandemic/supporting-european-businesses-during-pandemic_en).
- European Commission. (2021b). Access to finance. [https://europa.eu/youreurope/business/finance-funding/getting-funding/access-finance/index\\_en.htm](https://europa.eu/youreurope/business/finance-funding/getting-funding/access-finance/index_en.htm)
- European Commission. (2021c). State Aid Cases. [https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/jobs-and-economy-during-coronavirus-pandemic/state-aid-cases\\_en](https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/jobs-and-economy-during-coronavirus-pandemic/state-aid-cases_en)
- European Commission. (2021d). Jobs and Economy During the Coronavirus Pandemic. [https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/jobs-and-economy-during-coronavirus-pandemic\\_en](https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/jobs-and-economy-during-coronavirus-pandemic_en)
- Fujita S., Moscarini, G. (2017). Recall and unemployment. *American Economic Review*, 107(12), 3875–3916, <http://dx.doi.org/10.1257/aer.20131496>

- Israeli District Court, Jerusalem. (2005). CC (Jlm) 5524/03 the State of Israel v. Parents Association Near the State Religious School (Taxes on Line 8.3.2005). [Hebrew].
- Israeli District Court, Jerusalem. (2006). CA (Jlm) 9902/05 The State of Israel vs. Etz Ben Abu and others, Missim 20/2 5-63 (April 2006). [Hebrew].
- Israeli High Court of Justice. (2001). PCA 4844/00 Arie Barkay v. the State of Israel – the Ministry of Finance – VAT and Purchase Tax Deptment, PD 56(2) 37 (2001). [Hebrew].
- Israeli High Court of Justice. (2020). HCJ 2589/20 Accountants Chambers of Israel v. The Government of Israel and others (30.4.2020).
- Israeli Knesset. (2021). The Law on Economic Assistance Program (the new corona virus) (Temporary Order), Ts"v -2020, SH 298.
- Israeli Knesset. (2021a). The Law Economic Assistance Program (the new corona virus) Temporary Provisions (Amendment No. 4), Htsf"a -2021, s.h 274.
- Israeli Ministry of Finance. (2020). Corona. <https://www.gov.il/he/departments/topics/corona-ministry-of-finance> [Hebrew].
- Israeli State Comptroller. (2020). Special Interim Report on the State of Israel's dealing with the Corona crisis: Aspects of the Tax Authority's activities during the Corona crisis [Hebrew]. [www.mevaker.gov.il/sites/DigitalLibrary/Documents/2020/COVID-19/2020-COVID-19-101-tax.pdf](http://www.mevaker.gov.il/sites/DigitalLibrary/Documents/2020/COVID-19/2020-COVID-19-101-tax.pdf)
- Israeli Tax Authority. (2021). Executive Order of the Tax Authority, in accordance with the Law on the Financial Assistance Program (the new corona virus), Temporary Hts"v -2020, 21 August 2021 [www.gov.il/BlobFolder/policy/hor270820/he/hor270820-1.pdf](http://www.gov.il/BlobFolder/policy/hor270820/he/hor270820-1.pdf)
- Hedva Kaplinski and Ami Tzadik. (2020). The Israeli Market's handling of the COVID-19 crisis compared to developed countries. The Israeli Knesset Information and Research Center [Hebrew]. [https://fs.knesset.gov.il/globaldocs/MMM/7102fc6f-db69-ea11-8104-00155d0aee38/2\\_7102fc6f-db69-ea11-8104-00155d0aee38\\_11\\_13782.pdf](https://fs.knesset.gov.il/globaldocs/MMM/7102fc6f-db69-ea11-8104-00155d0aee38/2_7102fc6f-db69-ea11-8104-00155d0aee38_11_13782.pdf)
- Lesnik, T., Kracun, D., & Jagric, T. (2014). Recession and tax compliance – The case of Slovenia. *Inzinerine Ekonomika-Engineering Economics*, 25(2), 130.
- Maital, S., & Brzani, E. (2020). The global economic impact of COVID-19: A summary of research, <https://www.neaman.org.il/EN/The-Global-Economic-Impact-of-COVID-19-A-Summary-of-Research>
- Mankiw, G. (2020). A proposal for social insurance during the pandemic, <http://gregmankiw.blogspot.com/2020/03/a-proposal-for-social-insurance-during.html>
- Marron, D. (2020). If we give everybody cash to boost the Coronavirus economy, let's tax it. Tax Policy Center, <https://www.taxpolicycenter.org/taxvox/if-we-give-everybody-cash-boost-coronavirus-economy-lets-tax-it>
- Organization for Economic Cooperation and Development [OECD]. (2020). Tax and Fiscal Policy in Response to the Coronavirus Crisis: Strengthening Confidence and Resilience. Updated 19 May 2020, 36-39, [https://read.oecd-ilibrary.org/view/?ref=128\\_128575-o6raktc0aa&title=Tax-and-Fiscal-Policy-in-Response-to-the-Coronavirus-Crisis](https://read.oecd-ilibrary.org/view/?ref=128_128575-o6raktc0aa&title=Tax-and-Fiscal-Policy-in-Response-to-the-Coronavirus-Crisis)
- OECD. (2020a). Tax policy responses to COVID-19, <https://www.oecd.org/tax/>
- OECD. (2021). Revenue statistics in Latin America and the Caribbean 2021, 29-59, <https://www.oecd.org/ctp/revenue-statistics-in-latin-america-and-the-caribbean-24104736.htm>
- OECD. (2021a). Effective tax rates. [https://stats.oecd.org/index.aspx?DataSetCode=CTS\\_ETR](https://stats.oecd.org/index.aspx?DataSetCode=CTS_ETR)

- Ravid, O. (2020). Ignition attempt and graffiti: The income tax building in Holon was damaged during the night. [https://www.mako.co.il/news-law/2020\\_q2/Article-6f4951efd95c171026.htm](https://www.mako.co.il/news-law/2020_q2/Article-6f4951efd95c171026.htm) [Hebrew].
- Oxford Economics. (2020, December 14). Featured : Coronavirus watch: Three key vaccine uncertainties, particularly: Coronavirus Research Briefings. <https://www.oxfordeconomics.com/coronavirus>
- Posner, R. A. (2009). *A failure of capitalism: The crisis of '08 and the descent into depression*, 75-112.
- Samocha, S. (2020, May 23). Fragile or stronger? The State of Israeli democracy in the day after. Shomrim – Center for Communication and Democracy. <https://www.hashomrim.org/p30> [Hebrew].
- Nir Mozes, J. S. (2020, June 26). I call people to stop paying taxes. 103 FM. <https://103fm.maariv.co.il/programs/media.aspx?ZrqvnVq=HMLFFJ&c41t4nzVQ=GHF>
- Statista. (2021). Impact of the Corovavirus Pandemic on the Global Economy – Statistics and Facts. <https://www.statista.com/topics/6139/covid-19-impact-on-the-global-economy/>
- Thaler, R. H., & Sunstein, C. R. (2009). Improving decisions about health, wealth, and happiness. *Economics and Philosophy*, 26(3), 369-376 .
- United States Small Business Administration [USSBA]. (2021). COVID-19 Relief Options. <https://www.sba.gov/funding-programs/loans/covid-19-relief-options>
- World Trade Organization [WTO]. (2020, April 8). Trade set to plunge as COVID-19 pandemic upends global economy, Press 855/Press release 8.4.2020, [https://www.wto.org/english/news\\_e/pres20\\_e/pr855\\_e.htm](https://www.wto.org/english/news_e/pres20_e/pr855_e.htm)
- WTO. (2020, June 22). Trade falls steeply in the first half of 2020. Press 858/Press release 22.6.2020, [https://www.wto.org/english/news\\_e/pres20\\_e/pr858\\_e.htm](https://www.wto.org/english/news_e/pres20_e/pr858_e.htm)

#### About the Authors

Nellie Munin (LL.D., advocate) is an associate professor and founding faculty member at the law school at Zefat Academic College, Israel. Formerly, she served as Minister of Economic Affairs in the Israeli Mission to the EU and as Chief legal advisor of the State Revenue Administration in the Israeli Ministry of Finance. Her research areas are international taxation, international trade law, and EU economic law.

Karnit Malka-Tiv (LL.B., LL.M., Ph.D., advocate) is an adjunct lecturer at the law school at Zefat Academic College, at the Human Resources and Multidisciplinary Programs at Kinneret Academic College, and at the School of Economy of the West Galilee College in Israel. Her research areas are VAT Law, Income Tax, Real Estate Taxation, International Taxation, and White-Collar Offenses.

#### Discussion Questions

1. Can government measures affect tax obedience in times of crises?
2. Which government measures might encourage tax obedience in times of crises?

3. Should governments ignore or forgive temporary tax avoidance in times of crises, or might such approach enhance long term disobedience?

To Cite this Article

Munin, N., & Malka-Tiv, K. (2021, Fall). Government assistance programs and tax obedience in COVID-19 times. *Journal of Multidisciplinary Research*, 13(2), 5-19.



“Nighttime at Pike Place Market in Seattle”  
2021

Photography by Scott E. Gillig

Image Copyright © by Scott E. Gillig.  
All rights reserved. Used with permission.



# **Effects of Leadership on an Organizational Culture Producing Quality Products and Services**

**Noah Dula**

*Eastern Michigan University*

**and**

**Herman Tang**

*Eastern Michigan University*

## **Abstract**

The study of culture and leadership in an organization has led the workforce community to delve into research on how the overall environment relates to producing quality products in the service and manufacturing industry. This study considered the aspects of management styles to evaluate how employee's satisfaction would provide an organization with effective outcomes. The study proposes hypotheses to understand leadership's effect on employee's ability to produce quality services. The study compared surveys of an organization over time to a smaller survey redesigned to focus on leadership's contributions and the perception of how organizational culture is from the employee's viewpoint. The data collected through surveys show the comparison drawn from a small portion of an agency to the overall organization. Results indicate transformational leadership has a positive influence on improving organization performance. With literature reviews and statistical results of the study shows possible direction for further research into organizational culture and different styles of leadership.

**Keywords:** leadership, organizational culture, quality, workforce, professional environment, training

## **Introduction**

As most young people transfer into the working environment from school, everyone wants to work for an organization that will inspire them to be productive and challenging in their

career. To challenge and inspire the workforce, an organization must have an established culture and supportive leadership. All industries have the same challenge, which is getting their workers to perform at their best to produce the most efficient and effective merchandise or service a company can yield. To achieve this type of goal, an organization needs to adapt to the changes in workforce, technology, and demands from customers. An organization must have strong leadership from managers on the floor to senior executives in the company's Chief Executive Office. Leadership's vision, guidance, and ability to adapt to change will be the foundation through which the company will thrive or fail. On the other hand, the employees at the lower level will be the driving force for whether the organization flourishes and thrives or hemorrhages until the company cannot compete in the industry.

In the global markets, every organization attempts to achieve a culture that will allow the company to have a competitive edge over the competition in their market. Energizing the workforce of an organization and allowing employees to feel an important part of the vision empowers personnel to produce at their best and be productive at a high level. When an organization has a poor culture, one that is not conducive to learning or change, the productivity can suffer due to emotional disparity and a plethora of other reasons of the workforce undermining long success in their prospective market. Adaptability in the global market means the ability to change. The only thing constant in the world is change. Without changes, organizations tend to not do well in the ever-growing industry, with new technology, and increasing customer demands. This study will show the overarching effect that leadership has on an organization's culture.

## **Problem Statement**

Organizations succeed or fail due to the quality of management and personnel in leadership positions. "Leadership is a somewhat nebulous term...it has many aspects...it is not black and white. Being a leader requires having many skills; it requires recognizing what skills they require for any given situation; it requires moving rapidly from one skill to another as the situation demands" (Neilson, 2010). Understanding an organization's culture can influence which leadership style can be effective in achieving organizational goals. The courses in a Business Management degree do not prepare future leaders to understand, create, or foster operational organizations. A leader can be a manager, but a manager is not necessarily a leader (Kotter, 1990). They prepare young leaders to identify and correct an organization that has become no longer efficient in battling its biggest challenge, low morale, and poor performance.

Therefore, this study seeks to address the question "Does leadership affect organizational culture and the production of a quality product or service?" By understanding the perceptions of the labor force, there is a chance to interpret how leadership characteristics shape an organization's culture and production of quality goods and services.

## **Background and Assumptions**

Throughout history, organizations have been looking for constant ways to transform themselves to suit the reality of their own atmosphere. Society, markets, client bases, and technology influence an organization's environment. The organization's perception of those factors defines the goal. Since these factors are constantly changing, it is important that an organization's environment be receptive to change, and training or educating the workforce is a

priority. It is, however, management's perception that is the reaction to the goal and the initiators of culture. The research gives a perspective to managers to renovate organizations in response to a constantly changing environment. As researchers look for the true definition of leadership, many vary with differing results, but most agree leaders impact organization members and the output of the organization.

Certain leadership styles, such as transactional (actions) and transformational (changes) are at the forefront of an organization's success in their respective industry. Transactional models of leadership style focus on charisma, while transformational leadership is a demonstration of charisma and vision that inspire followers to exceed their skill sets for the good of the organization. Our efforts will be on the situational exertions of the managers in this article.

Specific research hypotheses were to introduce information about the extent an organizational culture varies with purposes and the effects perceived by the culture of the employees. Answering these questions will provide a small investigation of how management perceives the organization's workforce and their efforts to provide cultural transformation to allow the organization to produce significantly diverse performance results.

Some researchers have suggested that transformational leadership and organizational culture contain the key to understanding organizational effectiveness (Bass & Avolio, 1990). It is important to be clear about the overall study and the research will add to the depth of knowledge that already exists on the topic of Leadership and Organizational Culture.

The study created a plan and timeline during the first week of the winter 2019 semester. On January 14<sup>th</sup>, we sent surveys and consent forms out to collect a data stream that enhanced and solidified the outcome of the hypotheses. February 2nd started the analysis and validated the results relating to the research question and hypotheses.

- Having a supportive supervisor increases employee performance
- All supervisors are fair in their assessment of employees equally
- The organization runs well with the appropriate employees in the workplace
- Supervisors hold all employees to the same standards
- Supervisors create a professional environment to foster a productive atmosphere
- They provide the same training to all employees across an organization

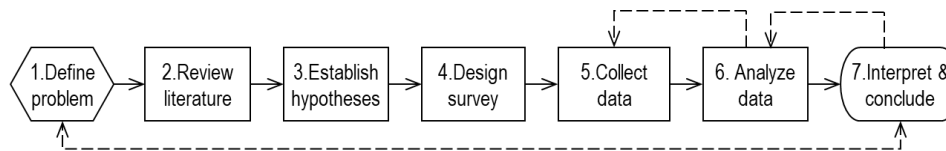
The study analyzed based on demographic information, reliability analysis, testing the hypotheses, and a comparative analysis of survey data.

## **Methodology**

This study designed to investigate the association with leadership, organizational culture with highlights of a learning organization in the business context. In the body of this article, we investigated only an assumption-relationship from previously written literature. In future endeavors for organizations, the information provided may be useful in attempting to create or sustain an organization's culture and improvement of performance. By interpreting the style of leadership in place and the style of organizational culture required to support a productive environment.

We discussed research methodology, research procedures employed for measuring leadership style, and organizational culture throughout the article. Research also considered the research question and hypotheses, the survey instruments and the target population and research sample. Figure 1 is a flow chart explaining the research process.

**Figure 1**  
***Flowchart of Research Process***



### **Literature Review**

We separated literature into three categories: Survey, Training, and Leadership. Previous research showed that across many industries and nations, leadership is a driving factor in an organization. This section provides theories on the survey research method, while some organizations lean on training to build strong foundations and others focus on leadership as a follower. Each review is unique, concentrating efforts toward their research question. This research focuses on leadership and culture. While leaders are the principal architects of culture, an established culture influences what kind of leadership is possible (Schein, 1990). Culture includes the organization's vision, values, norms, systems, symbols, language, assumptions, beliefs, and habits (Needle, 2015).

### **Survey**

#### *World Values Survey Data*

A study used a quantitative research method that studied the culture of the Arab World by a comparative opinion survey (Tausch, 2016). The article uses a survey and compares it to the organization's previous surveys relating the past analysis with the current employees at a single point of time. Throughout the article, charts and figures display the comparison of all the Arab countries and comparison of all the countries are different. This article will focus on a similar analysis and understanding of previous information presented for the organization at any state or time.

#### *An Empirical Investigation*

A study used a quantitative research method to evaluate leadership styles and specific types of organizational cultures (Schimmoeller, 2007). With the use of a questionnaire and survey, the most significant finding was a significant positive correlation among leaders and cultures. In closing, the author realized a study of this type can help achieve synergy by pairing leadership styles to an organizational culture.

## **Training**

### *Culture in Learning Organizations*

The study addressed the impact of transformational leadership and organizational culture on a learning organization through a quantitative research method (Rijal, 2016). They collected data from the pharmaceutical sector and a comparison was drawn between India and Nepal. Learning provides a competitive edge if lessons learned as failures occur and cause change, thus improving competitive edge. A learning organization leader brings out the best in people and is adaptable. The study concludes that there is a positive influence of transformational leadership and organizational culture on a learning organization.

### *Effectiveness of Workforce Diversity*

The article (Hanover & Cellar, 1998) used a quantitative research method, based on the education of the workforce, to change the perception of management practices. This article reflects on an educated workforce having a culture that is more understanding of why the company decides in production of products or services. Training in an organization helps a culture grow and share in middle management's responsibility to produce quality.

### *Leadership and Teamwork Cohesion*

This article studies the influence of leadership, teamwork, and organizational learning that affect innovation and performance using a quantitative research method. The authors found that there is a need for management to have a vision to sustain a competitive advantage using learning environments and proactive leadership. The authors concluded that to obtain a greater innovation gap and learning capability and to have a strong work environment that is characterized by teamwork.

## **Leadership**

### *Impact of Leadership Styles*

The study concluded by author Stein summed that the style of leadership to culture type impacts firm effectiveness. Using a quantitative research method, Stein used surveys to measure attitude and behavior indicators of leadership, culture, and effectiveness of the organization. The study determined that leadership variables have a significant impact on performance and satisfaction of followers. The study defined leadership as organizationally useful behavior by one member of an organizational family to other members of the family. The outcome is their "quality of service", derived from organizational culture and behavior norms.

### *Relationship: Culture and Leadership*

This study was a quantitative study to identify the relationship between cultures of organization and society and determine the leadership styles that achieve organizational goals.

The research included exploring the relationship between culture and leadership and the influences. By managing internal environments and the changes that need to occur, leaders develop the culture of an organization. The conclusion of the study provided the following recommendations: to encourage culture from the top down, recognition, clear delineated career path and fair treatment remain significant factors and several others.

#### *Nonprofit Serving Older Adults*

A study utilized bivariate correlation techniques in his quantitative research method (Snipes-Bennett, 2006). The findings fell into three sections: the first was an overview of descriptive data, the second was a focus on the research question, and the third addressed the relationship between leadership styles and organizational effectiveness results. In sum, a statistical significance existed between organizational culture and leadership styles as well as leadership styles and organizational effectiveness outputs. The study suggested a balance of leadership styles and training can effectively lead or manage employees in an organization.

#### *Middle Management*

A study on workforce education and development used both qualitative and quantitative methods of research (Kim, 2011). The author found different leadership styles affect organizations, different cultures have a moderating effect on transformational leadership and learning organization, as well as management components affect the organization. In summation, the author discovered middle management with transformational skills plays a vital role in making the change of the organization to a learning one and encouraging staff to embrace constant learning in a corporate environment.

#### *Leadership Future Directions*

This article focuses on leadership, followership and the theories, research and future directions of leadership. The authors use both qualitative and quantitative research investigative methods. Some findings through other literature reviews identified taking a more holistic view of the leadership field. Other observations consisted of understanding the interest of how leaders process information as well as followers and of how they affect each other. The leadership field has shown marvelous progress and can be an exciting time in the coming future.

#### *Shared Leadership in Teams*

The authors of this study concentrate on teams with a qualitative research method. Instead of focusing on individual leadership, they look into how team members influence the environment, the shared purpose, social support, and research coaching, which can predict development of leaders. The authors concluded shared leadership is a vital contributing factor that can improve group performance from the eyes of the customer. Leadership provided through team efforts is more effective when coming through team efforts.

### **Research Methods**

## **Purpose of the Study**

The primary objective of this study was to examine the relationship between leadership and the overall effect it has on an organizational culture. The leadership-management role has a comprehensive effect on the organization's culture that produces services or products. This has been an ongoing topic of studies for quite some time. The study designed a survey method to correlate the effects on leadership-management and the perception of how they affect the culture through the employee's point of view. The study seeks to answer the research question through "a qualitative research method, which was believed to be the best methods to study culture" (Schein, 1990).

The following section will show the study population for both the organization worldwide and the smaller subgroup of the organization at one specific location. The study measure used a small survey of a questionnaire the organization uses annually to assess the climate of the organization; the study used data analysis procedures to interpret the information it collected. It used a quantitative study approach instrument to address the problem statement to examine research objectives. The term culture refers to characteristics of behavior or attitudes of organizations or groups.

The depth and intensity of a culture in the business world starts with leadership and affects how rules are emphasized across all policies and procedures. A robust emphasis on education and self-improvement can be a powerful influence to aid in a learning environment, which can modify the way humans think of themselves and behave in the workplace. Previous studies on leadership have focused on people reflecting on a leader's behavior or interaction with leadership style with groups of employees. An organization's culture is based on worker's beliefs, values, and underlying assumptions brought from their race, religion, upbringing, or combinations of these. Leadership and culture come together and are the starting foundation of a group's management system and practices.

## **Research Settings**

The study uses a survey collection method to acquire information from employers at a government agency. The data for this survey came from several Federal Employee Viewpoint Surveys, commonly referred to as "Climate Surveys" or assessments. We referred to them as climate surveys for this study. The data was from annual assessments across the organization, which includes approximately 10,800 employees. That survey had roughly 4,400 employees respond. In addition, the study conducts the same climate survey at the small organization as the sample survey. 108 employees work at the smaller organization.

The initial climate survey used for analysis came from April 2017 and had 76 respondents from over 45 days. The sample survey for the assessment was out in January 2019 with an 18-day period to respond, which garnered 33 responses. The parent organization's most recent climate assessment was completed December 2018.

## **Survey Instrument**



Table 2 below lists the survey questions to comprise survey data we will analyze for this study. The questions have two categories: Leadership and Culture. The survey examines how leadership is performing and the culture from the employee's perspective across the small organization. This table shows the first 14 questions to the left focusing on Organizational Leadership. The questions to the right helped assess the culture of the organization.

Understanding the perspective of the employee's views through the first 14 questions looks to satisfy the second tier of Maslow's hierarchy of needs. As a leader-manager, the safety and security needs of an employee build on the ability to perform at a higher potential. Questions 15 through 28 focus on culture and the third tier of Maslow's hierarchy of love and belongingness. Both tiers are crucial to employees performing at a high rate.

**Table 1**  
***Survey Questions Used for Compilation of Survey Research***

| Leadership  | Culture   |
|---|---|
| Q1 I have enough information to do my job well.   | Q15 My immediate supervisor holds employees accountable for their performance.  |
| Q2 I know what is expected of me on the job.  | Q16 My work environment is free from unprofessional behavior.   |
| Q3 I have sufficient resources (people, materials, budget) to get my job done.                    | Q17 My contributions are respected in this unit.  |
| Q4 My performance appraisal is a fair reflection of my performance.                               | Q18 Effective communication issues exist within my command/directorate.   |
| Q5 My work is able to recruit people with the right skill sets.                                   | Q19 Discrimination with regard to race, color, gender, age, physical or mental disability, or national origin is not tolerated in my workplace. |
| Q6 In my work area, steps are taken to deal with a poor performer who cannot or will not improve. | Q20 I believe employees I interact with to accomplish my job, perform as a team.  |
| Q7 My supervisor supports my need to balance work and other life issues.                          | Q21 I receive the training needed to accomplish my job.   |
| Q8 My supervisor provides me with opportunities to demonstrate my leadership skills.              | Q22 I receive the counseling and mentoring needed to advance in my career.  |
| Q9 Discussion with my supervisor about my performance is worthwhile.                              | Q23 I receive adequate support from my immediate supervisor to accomplish my assigned duties.   |
| Q10 My supervisor provides me with constructive suggestions to improve my job performance.        | Q24 I believe the work I perform supports DCMA's organizational mission and vision.   |
| Q11 Supervisors in my unit support employee development.  | Q25 I am aware of the organizational culture and promote it.  |

| Leadership  | Culture  |
|---|--|
| Q12 I know how my work relates to the agency's goals and practices. | Q26 Change is good for an organization's growth and stability. |
| Q13 My supervisor listens to what I have to say.                    | Q27 Leadership promotes the organizational culture.            |
| Q14 My supervisor treats me with respect.                           | Q28 How many supervisors have you had in the past 3 years?     |

## Sample Population

To get a better comparison between the organization's 10,800 plus employees to the smaller organization's workforce, we took a ratio that made a comparison of 100:1 participants per the study. The analyzed percentages show the correlations between the two groups. With the study being anonymous, we grouped the participants into categories of an age range, based on generations. Out of the contributors who participated, the study relegated each into one of the following categories: Baby Boomers, Generation X, Xennials, and Millennials. The study collected this information upon receipt of the researcher's returned sample questionnaires. To further understand the age groupings, additional charts show the breakdown for each age group.

A Cross Tabulation Table below shows the diversity of the participants. To protect the identity of the contributors to the survey, an untraditional way to categorize the participants was to sort them by generations instead of age groups or organizational departments (Figure 2).

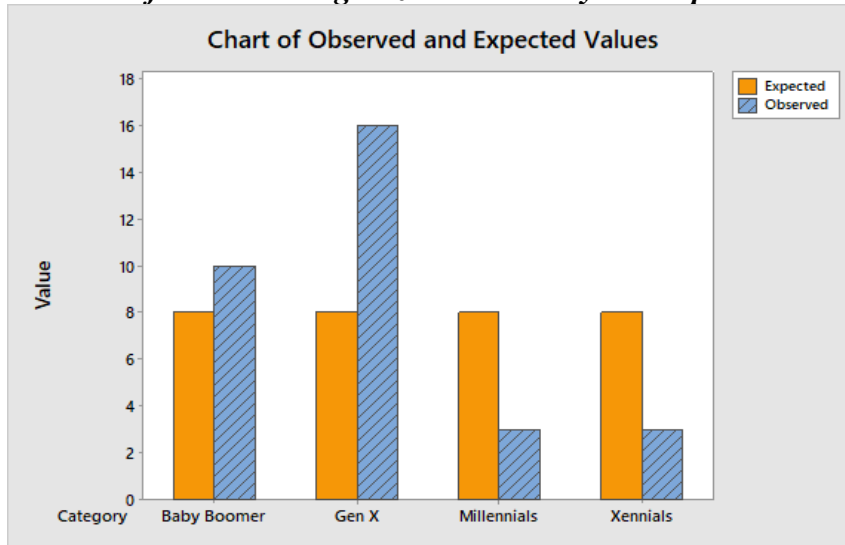
**Table 2**  
***Survey Population of the Federal Agency and the Smaller Organization Sampled***

|                                   | Employees | Returned Surveys | Return Rate |
|-----------------------------------|-----------|------------------|-------------|
| Organization (Climate Survey)     | 10,862    | 4410             | 40.6%       |
| Sub-Organization (Climate Survey) | 108       | 76               | 70.4%       |
| Sample Survey (Climate Survey)    | 108       | 33               | 30.6%       |

**Table 3**  
**Tabulated Statistics: Participants per Generation**

| Raining      | 1  | 2 | 3  | 4 | 5 | All |
|--------------|----|---|----|---|---|-----|
| Baby Boomer  | 2  | 3 | 3  | 0 | 2 | 10  |
| Generation X | 3  | 3 | 9  | 1 | 0 | 16  |
| Millennial   | 3  | 0 | 0  | 0 | 1 | 4   |
| Xennial      | 2  | 1 | 0  | 0 | 0 | 3   |
| All          | 10 | 7 | 12 | 1 | 3 | 33  |

**Figure 2**  
**Statistics of the Small Organization's Survey Participants**



## Procedures

We analyzed data through the two-tailed correlation test of hypothesis where a p-value will show the observed significance level of the testing. By using a correlation test, the p-value will provide a measure of the strength of the results of the test. The study rejected significance levels less than the chosen level ; otherwise, the research should accept the results due to not enough proof to reject the null hypothesis.

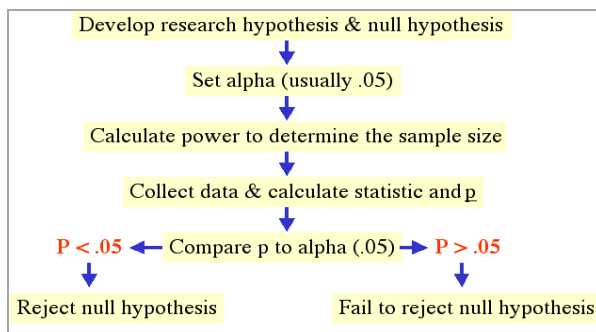
Correlation can be both positive and negative ( $\pm$ ) and does not necessarily mean causation. Correlation is also influenced heavily by outliers. We considered correlation strong when a coefficient  $> 0.7$ .

## Analysis of Data

### Introduction

The testing process used has five steps depicted in Figure 3 to assess the validity of hypotheses. We computed the data through StatKey for hypothesis 1 and Minitab for hypotheses 2 through 6 to do the analysis. Q1 through Q14 (leadership) were for hypothesis 1, to show correlations using a randomization test for proportion of the two surveys and results. This process tested each hypothesis. Data for the analysis resulted from the questions for the small survey and the large survey.

**Figure 3**  
***Five-step Process for Hypothesis Testing***



Note: Hypotheses tested are in bold. A hypothesis is usually tentative; it is an assumption or suggestion made strictly for the objective of being tested. A hypothesis is a statement of what you think is going to happen based on the facts and prior knowledge you already have. The problem is italics. Problem is the question and is what you ask to prove your hypothesis.

### Preliminary Analysis

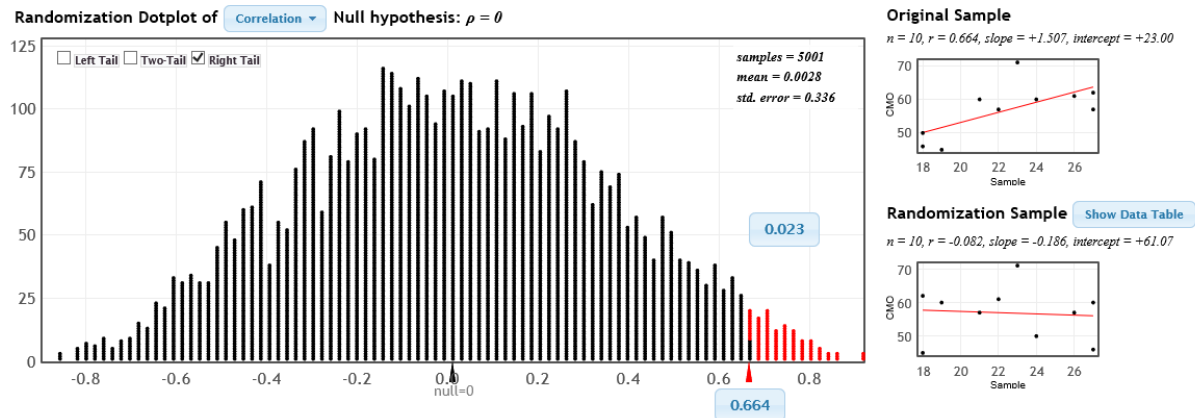
#### *Supportive Supervisor*

The first hypothesis addresses supervisors aiding to increase employee's performance across the organization.

Having a supportive supervisor will increase employee performance.

1.  $H_0=0$ ;  $H_a>0$
2. alpha level=0.05
3.  $P=0.023$
4.  $p < \alpha$  — Reject the null hypothesis
5. There is evidence that supportive supervisors increase employee performance. By using a randomization dot plot of correlation, the results show there is a strong correlation of a supportive supervisor increasing employee's work performance.

**Figure 4**  
**Randomization Dot plot of Correlation—Strong**



### *Fair & Equal Treatment of Employees*

The study combined the following two hypotheses due to their similarity in perceived assessment and fairness by employees.

All supervisors are fair in their assessment of employees throughout an organization

All employees are treated equally in the organization

To analyze these hypotheses, we computed the correlation through the results of the following questions using percentages of the survey.

Q4 My performance appraisal is a fair reflection of my performance.

Q9 Discussion with my supervisor about my performance is worthwhile.

Q13 My supervisor listens to what I have to say.

Q15 My immediate supervisor holds employees accountable for their performance.

Utilizing Minitab software, the results were the following:

- Check assumptions and write hypotheses— $H_0: p = 0$ ;  $H_a: p \neq 0$
- Calculate the test statistic—Pearson correlation = -0.639
- Fair Assessments of Employees—P-value = 0.361

After evaluating Pearson's  $r$  for correlation, there is a moderate to strong negative correlation with a P-value above the .05 standard. Therefore, fail to reject the null hypothesis. There is no evidence that there is a fair assessment of employees throughout the organization that is different in the population.

### *Qualified Personnel*

This next hypothesis deals with the perceptions of people's skill sets and teamwork, and the work being performed supports the organization's mission and vision.

The organization will run well with the appropriate employees in the workplace.

To analyze this hypothesis, we computed the correlation through the results of the following questions using percentages of the survey. Utilizing Minitab software, the results were as follows.

Q5 My work is able to recruit people with the right skill sets.

Q20 I believe employees I interact with to accomplish my job, perform as a team.

Q24 I believe the work I perform supports DCMA's organizational mission and vision.

Utilizing Minitab software, the results were the following:

- Check assumptions and write hypotheses  $H_0: p = 0$ ;  $H_a: p \neq 0$
- Calculate the test statistic—Pearson correlation = 0.988
- Determine the p-value—Appropriate Employees P-value = 0.099

After evaluating Pearson's  $r$  for correlation, there is a very strong positive correlation with a P-value above the .05 standard. Therefore, fail to reject the null hypothesis. The results are not statistically significant; there is no evidence of the organization having the appropriate employees in the population.

### *Standards*

This hypothesis purports that not all employees are held to the same standards.

Supervisors hold all employees to the same standards.

To analyze this hypothesis, we computed the correlation through the results of the following statements using percentages of the survey.

Q6 In my work area, steps are taken to deal with a poor performer who cannot or will not improve.

Q8 My supervisor provides me with opportunities to demonstrate my leadership skills.

Q10 My supervisor provides me with constructive suggestions to improve my job performance.

Q14 My supervisor treats me with respect.

Q18 Effective communication issues exist within my command/directorate.

Q19 Discrimination with regard to race, color, gender, age, physical or mental disability, or national origin is not tolerated in my workplace.

Q23 I receive adequate support from my immediate supervisor to accomplish my assigned duties.

Utilizing Minitab software, the results were the following:

- Check assumptions and write hypotheses  $H_0: p = 0$ ;  $H_a: p \neq 0$
- Calculate the test statistic—Pearson correlation = 0.939
- Determine the p-value—All Employees P-value = 0.002

After evaluating Pearson's  $r$  for correlation, there is a very strong positive correlation with a P-value below the .05 standard. Therefore, fail to reject the null hypothesis. The results are statistically significant; there is evidence of the organization's standards in the population.

### *Professional Environment*

This hypothesis contends that supervisors create a professional environment to foster a productive environment. Supervisors create a professional environment to foster a productive atmosphere.

To analyze this hypothesis, we computed the correlation through the results of the following questions using percentages of the survey.

- Q1 I have enough information to do my job well.
- Q2 I know what is expected of me on the job.
- Q3 I have sufficient resources (people, materials, budget) to get my job done.
- Q7 My supervisor supports my need to balance work and other life issues.
- Q12 I know how my work relates to the agency's goals and practices.
- Q17 My contributions are respected in this unit.
- Q22 I receive the counseling and mentoring needed to advance in my career.

Utilizing Minitab software, the results were the following:

- Check assumptions and write hypotheses  $H_0: p = 0$ ;  $H_a: p \neq 0$
- Calculate the test statistic—Pearson correlation = 0.661
- Determine the p-value—Professional Environment P-value = 0.106

After evaluating Pearson's  $r$  for correlation, there is a moderate to strong positive correlation with a P-value above the .05 standard. Therefore, fail to reject the null hypothesis. The results are not statistically significant; there is no evidence of a relationship between the organization's professional environments in the population.

### *Training*

The last hypothesis asserts that they provide the same training to all employees across an organization. To analyze this hypothesis, we computed the correlation through the results of the following questions using percentages of the survey.

- Q11 Supervisors in my unit support employee development.
- Q21 I receive the training needed to accomplish my job.

Utilizing Minitab software, the results were the following:

- Check assumptions and write hypotheses  $H_0: p = 0$ ;  $H_a: p \neq 0$
- Calculate the test statistic—Pearson correlation = 0.952
- Determine the p-value—Training P-value = 0.013

After evaluating Pearson's  $r$  for correlation, there is a very strong positive correlation with a P-value below the .05 standard. Therefore, reject the null hypothesis. The results are statistically significant; there is evidence of a relationship between training of the organization's population.



## **Summary of Analysis**

Testing the hypotheses provided the following results based on the six hypotheses above.

1. Results are statistically significant, there is evidence that supportive supervisors increase employee performance.
2. Results are statistically significant; there is evidence that the organization's standards are enforced fairly across the organization's population.
3. Results are statistically significant; there is evidence of a relationship between leadership and adequate training across the organization's population.
4. Results are not statistically significant; there is no evidence that there is a fair assessment of employees throughout the organization that are different in the population.
5. Results are not statistically significant; there is no evidence of the organization having the appropriate qualified employees across the population.
6. Results are not statistically significant; there is no evidence of a relationship between leadership and the organization's professional environments across the population.

The above information does not definitively prove leadership affects culture. Tied to the literature reviews, the data shows this is a topic that can further be researched and provide guidance into the corporate industry of dealing with leaders and cultures of an organization.

The results provide a glimpse into the organization's culture through leadership and culture based on survey inquiry input. There were several sections: fair assessment of employees; appropriate personnel in the workplace; and professional environment to work in, where the data did not statistically reflect from the small organization's view to the larger organization's perspective. However, several areas did, such as having a supportive supervisor, using the same standards throughout the organization, and having the same training afforded to all employees. There were mostly moderate to very strong correlations across each section, except for the fair assessment of employees and being treated equally. That section of the questionnaire reflected a moderately negative correlation.

As indicated earlier in this article, the primary objective of this study was to examine the relationship between leadership and the overall effect it has on an organizational culture. The leadership-management role has a comprehensive effect on the organization's culture that produces services or products. This chapter depicted the computations and analyses constructed on the research questions and hypotheses. Based upon the results of the analysis, we can conclude the following. First, transformational leadership has a moderate effect on how an organization's culture with vision and charismatic management succeeds in business. Second, educating the organization makes for a more effective and efficient company. Third, middle management with transformational leadership skills (vision, charisma and a focus on training) positively influences the culture in many industries. Finally, there were various matters identified from the analysis on leadership support, training and holding employees to the same standards across the organization. The subordinate's interpretation of what the culture should be to foster an environment capable of delivering quality products and services.

## **Results and Discussion**

### **Research Results**

This study used Climate Surveys from both the site-specific organization and compared them to the overall organization, which is global. The study conducted a test of the sample survey instrument and verified with a minimized test group. The study reviewed and approved data for use for the overall sample population. Reuse of a portion of an already established instrument initiated an extra step to validate the process. We completed statistical analyses on the information using Minitab and StatKey software programs to ensure the accurate and reliable information of analysis. The study collected data and stored them in an Excel database. We used a Cronbach's alpha reliability analysis to ensure the validity of the survey questionnaire.

Cronbach's Alpha = 0.9576. The results computed were well above the 0.7 standard Alpha and were acceptable to get the data between leadership and culture correlation implied in the sample survey.

With statistical data derived from the sample survey, the literature review findings, results of the analytics and relevant recommendations provide management and leadership an objective roadmap to how effective continuous training and transformational leadership can provide an environment for success.

We informed the participants in the sample survey before the survey that their responses would be anonymous and input would be categorized with no identifying characteristics. A group of 33 individuals returned their survey giving consent to utilize their data for the study out of 108 employees that received the sample survey. Upon receipt of the survey, each respondent provided information about his or her age group, via generations, to help identify respondent information without pinpointing specific individuals per department.

### **Result Discussion**

If we succeed in our efforts to build healthy sustainable organizations, we must continue to invest in the development of cultural leaders who understand and respect the people that are the heart of their success (Block, 2003). Investing in the training of supervisors and future leaders will allow managers to coordinate strategies to create positive impacts on employee's performance. Transformational leadership is a learned trait that transitions into the strength of a culture. Organizations that build transformational leaders encourage a culture of training, learning, and equality through standards.

Any good organization works toward the perfect balance of good leadership and developing a specific culture to attain the production it feels will fit its business model. Researchers have identified various models to put into effect to help find the perfect climate for specific organizations. The Strategy Business Katzenbach Center identifies 10 Principles for Mobilizing Your Organizational Culture. Ten Principles for mobilizing your organizational culture (Katzenbach, 2016):

1. Work with and within your current cultural situations.
2. Change behaviors and mind-sets will follow.
3. Focus on a critical few behaviors.
4. Deploy your authentic informal leaders.

5. Do not let your formal leaders off the hook.
6. Link behaviors to business objectives.
7. Demonstrate impact quickly.
8. Use cross-organizational methods to go viral.
9. Align programmatic efforts with behaviors.
10. Actively manage your cultural situation over time.

Every organization should strive for the climate of the organization that best meets their needs. Each type of culture has benefits that can help the organization excel in production. A Clan Culture uses trust, participation, and cohesion as the base of their core values. An Adhocracy Culture is a little more flexible or adaptable to changes with a focus on external customers or situations using creativity and variety. With a Hierarchy Culture, the emphasis is more internal, uniform with distinction on the organization's stability. In a Market Culture, well-defined objectives tend to the results of productivity, performance, goals, and achievement gratification, which come from competition leading to successful realizations or present conclusions.

### **Concluding Remarks**

#### **Conclusions**

The purpose of this study was to investigate leadership effects on organizational culture and the production of quality products and services. A better understanding of perceptions of the working force and affected through varying styles of leadership can open eyes to change in an organization, hence culture. Based upon the results of this research, a sound business recommendation advocating transformational leadership with an adhocracy type culture is one of the most effective factors to promote productivity, quality products, and services. Managers with transformational leadership will engage the workforce, inspire vision, and motivate employees to pursue a continuous learning environment and promote a positive culture, resulting in good business and growth for the company.

With the survey, data used in this study not all the questions used provided conclusive evidence. Using surveys has disadvantages, such as receiving honest input, lack of memory, or misinterpretation of the questions, as a bias may slip in. Surveys are simple, cost effective, and relatively easy to oversee. This study applied techniques other surveys used to increase validity and statistical significance.

In this study, we found significant evidence to support effective training across the population, supportive supervisors aided in increasing productivity, and enforcing standards consistently across the organization. The fair assessment of employees, qualified personnel in the organization and a professional environment did not provide significant evidence, however these results may have come from data errors incurred through obtaining the survey data. Despite the results of the study, positive or negative, the outcomes and other literature reviews with similar techniques lean toward leaders influencing an organization's culture.

#### **Future Work**

This research has shed only a glimpse into the effectiveness of leadership in an inspired organizational culture. As the world transitions into the next wave of mass production of

products, leadership will continue to be a major influence on how an organizational culture performs. Observing and studying leadership in various organizations around the world can yield varying results compared to what the organization's culture will bring to the new way to do business. Other predictors or criteria examined may produce different results that can inspire groups to change how they cultivate a culture in their organization. In order to effect change, we highly recommend more research, which can be fruitful for all organizations.

Knowing and understanding some limitations of this project aids in gathering more research on the leadership and organizational culture. It can also provide for some changes in the future of studies on leadership and organizational culture. "Lessons Learned" is always an opportunity for improvement.

### **Limitations**

There are limitations to any study or project. One limitation to this project was due to the sample being from the same organization that the survey data derived. Most likely, the data is skewed because the employees from that portion of the organization may have a different perspective compared to others in the entire organization. Due to anonymity, many of the responders from the small organization also may have had the same supervisors, which may have been a contributing factor to how they responded in the survey. The survey is unable to distinguish some factors that may have caused bias in the data responses.

External influences are also limitations that a survey study may not capture. The mission may not allow full participation of all employees. Trust factors prevent complete honesty or involvement. Even though the study is confidential, potential contributors resist the opportunity to add value to the project due to lack of trust. Time constraints and the same questions in the survey and the sample may have lessened the sample size for this project.

### **Acknowledgements**

With all the constant support from family, friends, and colleagues along this study journey, Noah Dula would like to thank Ms. Jeanette Jackson and Ms. Patricia Karels for their help.

## References

- Avolio, B. J., Walumbwa, F. O., & Weber, T. J. (2009). Leadership: Current theories, research, and future directions. *Annual Review of Psychology*, 60(1), 421-449. <https://doi.org/10.1146/annurev.psych.60.110707.163621>
- Bass, B. M., & Avolio, B. J. (1990). Transformational leadership development: Manual for the Multifactor leadership questionnaire. Palo Alto, CA: Consulting Psychologist Press.
- Block, L. (2003). The leadership-culture connection: An exploratory investigation. *Leadership and Organization Development Journal*, 24(6), 318-334. <https://doi.org/10.1108/01437730310494293>
- Bohn, J. G., & Grafton, D. (2002). The relationship of perceived leadership behaviors to organizational efficacy. *Journal of Leadership & Organizational Studies*, 9(2), 65-79. <https://doi.org/10.1177/107179190200900206>
- Carson, J. B., Tesluk, P. E., & Marrone, J. A. (2007). Shared leadership in teams: An investigation of antecedent conditions and performance. *The Academy of Management Journal*, 50(5), 1217-1234. <https://doi.org/10.2307/20159921>
- Dyregang, S., Hanlon, M., & Maydew, E. L. (2010). The effects of executives on corporate tax avoidance. *The Accounting Review*, 85(4), 1163-1189. <https://doi.org/10.2308/accr.2010.85.4.1163>
- Hanover, J., & Cellar, D. (1998). Environmental factors and the effectiveness of workforce diversity training. *Human Resource Development Quarterly*, 9(2), 105-124.
- Kathrins, R. (2007). The relationship of leadership style and types of organizational culture to the effectiveness and employee satisfaction in acute care hospital. Unpublished dissertation, Touro University International, Cypress, California.
- Katzenbach, J., Oelschlegel, C., & Thomas, J. (2016). 10 Principles of Organizational Culture. <https://www.strategy-business.com/article/10-Principles-of-Organizational-Culture>
- Klein, A. S., Wallis, J., & Cooke, R. A. (2013). The impact of leadership styles on organizational culture and firm effectiveness: An empirical study. *Journal of Management and Organization*, 19(3), 241-254. <https://doi.org/10.1017/jmo.2013.34>
- Kim, J. Y. (2011, August). The relationship among leadership style, organizational culture and the learning organization: The moderating effects of organizational culture at the middle management level. Ph.D. Dissertation, Pennsylvania State University, State College, Pennsylvania.
- Kotter, J. (1990). A force for change: How leadership differs from management. New York, NY: The Free Press.
- Lloréns Montes, F. J., Ruiz Moreno, A., & García Morales, V. (2005). Influence of support leadership and teamwork cohesion on organizational learning, innovation and performance: An empirical examination. *Technovation*, 25(10), 1159-1172. <https://doi.org/10.1016/j.technovation.2004.05.002>
- Needle, D. (2015). Business in context: An introduction to business and its environment. London, UK: Cengage Learning.
- Neilson, S. (2010). The common cause of organization failure. <http://www.scottneilson.com/?p=200>
- Rijal, S. (2016). Leadership style and organizational culture in learning organization: A comparative study. *International Journal of Management & Information Systems (Online)*, 20(2), 17-25. <https://doi.org/10.19030/ijmis.v20i2.9642>

- Schein, E. H. (1990). Organizational culture. *American Psychologist*, 45(2), 109-119. <https://doi.org/10.1037/0003-066X.45.2.109>
- Schimmoeller, L. J. (2007). An empirical investigation of the relationship between organizational culture and leadership styles. D.B.A. Dissertation, Nova Southeastern University, Fort Lauderdale, Florida.
- Smith, E. E. (2009). The relationship between organizational culture, societal culture, and leadership styles. Available from Business Premium Collection, ProQuest Dissertations & Theses Global (305161800).
- Snipes-Bennett, V. J. (2006). A study of the effectiveness of a diverse workforce within nonprofit organizations serving older adults: An analysis of the impact of leadership styles and organizational culture. Ph.D. Dissertation, Capella University, Minneapolis, Minnesota.
- Tausch, A. (2016). The civic culture of the Arab world: A comparative analysis based on world values survey data. *Middle East Review of International Affairs (Online)*, 20(1), 35-59. <https://doi.org/10.2139/ssrn.2827232>
- Troy, L. C., Hirunyawipada, T., & Paswan, A. K. (2008). Cross-functional integration and new product success: An empirical investigation of the findings. *Journal of Marketing*, 72(6), 132-146. <https://doi.org/10.1509/jmkg.72.6.132>

#### About the Authors

Noah Dula (pianoman2272@yahoo.com) is a Quality Assurance Specialist who recently graduated from Eastern Michigan University with a Master's Degree in Quality Management. He is a government servant trying to protect national tax dollars. He currently lives just outside of Baltimore. As writing is only one of his passions, Noah has received various awards from writing accomplishments to employee of the quarter.

Herman Tang is an associate professor and is responsible for the Master of Science in Quality Management program. He serves as an associate editor for several scholarly journals and conferences, and as a panelist for the National Science Foundation. Dr. Tang has published four technical books and two book chapters. His latest book is *Quality Planning and Assurance – Principles, Approaches, and Methods for Product and Service Development*, published by Wiley. Dr. Tang earned his doctoral degree of Mechanical Engineering from the University of Michigan–Ann Arbor and an M.B.A. in Industrial Management from Baker College.

#### Discussion Questions

1. What is the relationship between the leadership effects on an organizational culture and the quality of products and services?
2. What are the elements of transformational leadership in organizational culture and healthy development?
3. What are additional questions for a further study on this subject?

To Cite this Article

Dula, N., & Tang, H. (2021, Fall). Effects of leadership on an organizational culture producing quality products and services. *Journal of Multidisciplinary Research*, 13(2), 21-41.



“Seattle Great Wheel at Pier 57”  
2021

Photography by Scott E. Gillig

Image Copyright © by Scott E. Gillig.  
All rights reserved. Used with permission.



## **Why Patients Lie: A Self-Discrepancy Theory Perspective of Patient Deception**

**Gary Daniel Futrell**  
*Valdosta State University*

### **Abstract**

Lying is considered a part of everyday life, and anecdotal evidence in the popular press suggests that patients often knowingly lie, mislead, and deceive health care professionals who work to help them. Such communication inefficiencies not only result in the loss of thousands of lives each year but also contribute to the waste of billions of dollars and create a poor experience for both patients and health care providers. This research deepens our understanding of patient deception by using self-discrepancy theory (SDT) to examine patient lying. In this article, I provide a theoretical justification for the application of SDT to patient deception and use Critical Incident Technique (CIT) to collect and analyze qualitative data from a nationwide consumer panel. The results show that 92 percent of the 625 critical incidences I analyzed were a type of self-discrepancy – thus, providing strong evidence for the application of SDT.

*Keywords:* communication, deception, self-discrepancy theory, Critical Incident Technique, self-presentation, consumer behavior

### **Introduction**

Anecdotal evidence in the popular press suggests that patients often knowingly lie, mislead, and deceive health care professionals working in their favor (Reddy, 2013). The health and wellness website WebMD found that nearly 45% of survey respondents admitted to deceiving their physician, with more than 30% lying about their diet and exercise and about 40% lying about following a doctor's treatment plan (Raymond, 2009; Reddy, 2013). Similarly, research by Levy et al. (2018) suggests that some 60 to 80 percent of patients knowingly withhold relevant information from their doctors. Patient deception regarding socially sensitive topics such as drinking, smoking, drug use, and sexual activity is particularly rampant. When asking patients about alcohol consumption, for example, physicians in training often are taught to double whatever patients say (Downs, 2004). While physicians do their best to provide patients with quality care, patient deception can affect not only service quality and patient

satisfaction but also physician effectiveness and medical outcomes (Li et al., 2017; Zhong et al., 2019).

Patients play a vital role in this important co-production experience and maintain a significant portion of responsibility for the service outcome (Colmenares-Roa et al., 2015). The physician must rely on the patient to provide information regarding medical history, symptoms, treatment adherence, and treatment effects or reactions (Levy et al., 2018; Li et al., 2017). Inaccurate information can confuse the doctor and “lead to misinterpreted symptoms, overlooked warning signs, flawed diagnoses and treatments—potentially endangering a patient's health, even life” (Ravn, 2009, p. E1).

Open and honest communication between the patient and physician is critical to a successful co-production experience and patient-centered care (Colmenares-Roa et al., 2015; Li et al., 2017). Extant research finds that when there is reciprocal communication in the patient-provider relationship, patient evaluation of service quality (Chang et al., 2013) and satisfaction is higher (Talen et al., 2008), and more favorable outcomes are likely (Talen et al., 2008). Research also has shown that a patient's poor or deceptive communication can adversely affect the physician's attitude toward the patient (Talen et al., 2008). Doctors may even seek to retaliate against patients who lie by withholding treatment, which can, in turn, lead to a patient seeking financial or legal retribution (Palmieri & Stern, 2009).

The majority of extant research on patient lying either confirms the prevalence of the problem (Castelo-Branco et al., 2010), considers ethical implications of lying (Palmieri & Stern, 2009), or investigates relationship dimensions such as power (Fainzang, 2002) and trust (Hall et al., 2002). A number of industry studies and popular press articles have reported patient reasoning for such deception (Finnegan, 2020; Morgan, 2012), but in a review of the academic literature on the doctor-patient relationship, I found no research that investigates the psychological mechanisms that may prompt an individual to lie. The current research deepens our understanding of patient deception using self-discrepancy theory (SDT) to examine possible motives behind patient deception.

Specifically, in this article, the present research results establish a connection between self-discrepancy and patient lying. Using Critical Incident Technique (CIT), I classify the different reasons patients provide for deceiving a health care provider. In this article, I provide theoretical background for self-discrepancy theory and self-presentation, explain the use of CIT, and conclude with the study results and discussion.

## **Theoretical Background**

### **Self-discrepancy Theory**

Self-discrepancy theory (SDT) seeks to explain how conflicting beliefs about one's self can cause emotional discomfort (Higgins, 1987). SDT postulates three basic domains of the self—the actual self, ideal self, and ought self. The actual self consists of the attributes that one believes one genuinely possesses. The ideal self is the representation of the attributes that one would like, ideally, to possess. The ought self is the representation of attributes that one believes one should or ought to possess—these attributes are often a factor of role, culture, and society. Higgins (1987) suggests that unlike attributes of the ideal self, which are optional or desired, attributes of the ought self are viewed as obligatory. SDT further posits that the self can be viewed from one's own personal standpoint (i.e., self-reflection) and the standpoint of some

significant other (e.g., father, mother, spouse, friend). Thus, six separate self-states can exist: actual-own, actual-other, ideal-own, ideal-other, ought-own, ought-other (see Table 1). The actual self-states (actual-own and actual-other) constitute one's "true" self-concept. The remaining self-states are self-directive standards or self-guides by which an individual compares him- or herself. SDT hypothesizes that people are motivated to reach a state in which the self-concept aligns with a relevant self-guide and that people differ as to which self-guide they are motivated to meet. The current research focuses on the four discrepancies possible from the actual-own perspective: (1) actual-own versus ideal-own discrepancy, (2) actual-own versus ideal-other discrepancy, (3) actual-own versus ought-other discrepancy, and (4) actual-own versus ought-own discrepancy.

**Table 1**  
*Self-discrepancy theory (SDT) self-states*

| Domain      | Own standpoint            | Other standpoint            |
|-------------|---------------------------|-----------------------------|
| Actual self | actual-own (self-concept) | actual-other (self-concept) |
| Ideal self  | ideal-own (self-guide)    | ideal-other (self-guide)    |
| Ought self  | ought-own (self-guide)    | ought-other (self-guide)    |

Note: The scope of this research includes only the self-guides

When one views one's actual self differently from one's ideal or ought self, a discrepancy arises, and there is emotional discomfort. SDT holds that discrepancies between one's actual and ideal self (A-I discrepancy)—inconsistent beliefs about one's actual characteristics and those one would like to possess—represents a psychological state in which there is an absence of positive outcomes—that is, the nonobtainment of hopes and desires or the failure to meet personal goals or wishes. As a result, individuals experiencing an A-I discrepancy are likely to experience dejection-related emotions, such as dissatisfaction, disappointment, embarrassment, or shame (Higgins, 1987). Discrepancies between one's actual self and ought self (A-O discrepancy) are uniquely related to agitation-related emotions. Individuals experiencing this type of discrepancy believe that they are not living up to their duties, responsibilities, or obligations. This creates a psychological state of anticipated negative outcomes that result from the association of punishment and the believed violation of prescribed duties and obligations. This is likely to result in feelings of guilt, uneasiness, fear, or anxiety. SDT predicts that the "greater the magnitude of a particular type of self-discrepancy..., the more strongly the person will experience the emotion associated with the discrepancy" (Higgins, 1999, p. 1314). These discrepancies lead to negative emotional-motivational states. This, in turn, can lead to emotional distress as well as self-defeating behavior (Strauman et al., 1991).

The emotional discomfort that accompanies a self-discrepancy is consistent with popular press articles that suggest health care consumers deceive health care professionals because they do not want to feel judged (Morgan, 2012) or want to avoid embarrassment, blame, lectures, and feelings of alienation (Castelo-Branco et al., 2010; Reddy, 2013). Others fear diagnosis or invasive treatment plans (Reddy, 2013); embarrassment (Castelo-Branco et al., 2010); disappointing a health care provider (Fainzang, 2002); or that their medical information might be communicated to loved ones, employers, insurance companies, or the authorities (Ravn, 2009). Further, Schwartz (2010) found that patients lie in an effort to present themselves in a positive light.

## **Self-presentation**

Goffman (1959) posited self-presentation as the manner in which individuals attempt to manage how others perceive them. Often used synonymously with impression management, many researchers suggest that this is not accurate, given that individuals can manage the impression of other entities (e.g., organizations, brands, other individuals, etc.). Self-presentation, however, is exclusively about the actions one takes to manage one's own image and, thus, it is not synonymous with impression management (Schlenker & Leary, 1982; Vohs et al., 2005). Schlenker and Leary (1982, p. 643) define self-presentation as "the attempt to control images of self before real or imagined audiences.... It is a goal-directed act designed, at least in part, to generate particular images of self and thereby influence how audiences perceive and treat the actor." An individual is successful at self-presentation when "others respond in a manner commensurate with the intended impression." While one may argue that all behavior can reveal something about one's self, self-presentation differs from other behaviors in that the actor has a conscious goal of controlling how others to whom the actions are directed perceive the actor.

Both verbal and nonverbal actions can be of use in self-presentation (Feldman et al., 2002). Verbal self-presentation by lying is so pervasive in social interactions that Depaulo et al. (1996, p. 979) suggest it is a fact of daily life and "an everyday social interaction process." Most of these lies serve to facilitate social relationships and can, as Goffman (1959) suggests, be considered *benign* fabrications. These lies often include altruistic or compassionate lies told to spare another's feelings, or sociable lies that allow the actor to adhere to rules of etiquette and politeness. However, patients who lie to their physician, either by commission or omission, can negatively affect the health care co-production process. In addition to potential adverse medical outcomes resulting from incorrect data a patient provides to the physician, the patient may experience lower satisfaction and service quality.

The following examples illustrate how the connection between self-discrepancy and self-presentation might manifest in a doctor-patient interaction: A relatively healthy patient may believe in the importance of diet and have every intention of adhering to a healthy diet plan but fail to do so. The fact that the patient believes that a healthy diet is ideal, but the reality of his actual diet is less than ideal (and more like "typical") represents a discrepancy between the individual's actual and ideal self (A-I discrepancy). This discrepancy likely will cause the patient to experience emotions such as shame or embarrassment when asked about his diet (Boldero & Francis, 2000; Higgins, 1999). If the discrepancy is significant enough, as a result, the patient may lie in an effort to manage the doctor's perception of him. In the case of an A-O discrepancy, a patient that has undergone heart surgery after a life-threatening episode likely will receive post-surgical counseling on diet and exercise. Research suggests that a proper diet is vital to managing heart disease, and most patients understand that it is their responsibility to maintain such a diet (Salisbury et al., 2011). Research by Salisbury et al. (2011), however, suggests that only about 20% of those who undergo such a procedure do, in fact, adopt a new diet. The discrepancy between the patient's actual diet and the diet that they ought to maintain to manage their heart condition likely will lead to agitation-related emotions (Boldero & Francis, 2000; Higgins, 1999). Such agitation-related emotions, in turn, can lead the patient to lie about or otherwise attempt to deceive the physician about his diet to avoid a negative reaction.

## **Method**

### **Critical Incident Technique**

I specifically chose critical incident technique as the data collection method for this study because it allows respondents to use their own words to describe the phenomenon of interest—deception—from their own perspective. Thus, the researcher can analyze the data to uncover naturally occurring patterns, or events, which affect the outcome of the scenario under investigation. CIT has the flexibility to support data collection through various means such as self-administered questionnaires, interviews, workshops, and direct observation (Flanagan, 1954; Kemppainen, 2000). I used self-administered questionnaires because they allow for efficient data collection through distribution across a broad sample (Ruth et al., 1999; Schluter et al., 2008). Further, self-administered questionnaires allow respondents to work through the questions in private and at their own pace, thus encouraging free expression and more honest responses with a more detailed recall of the situation (Ruth et al., 1999; Schluter et al., 2008).

Introduced in the 1950s, CIT is a qualitative classification technique (Flanagan, 1954), and it has become a popular research method in the fields of services marketing (Bitner et al., 1990; Gremler, 2004), management (Bott & Tourish, 2016; Ross & Altmaier, 1990), health care (Kemppainen, 2000; Schluter et al., 2008; Viergever, 2019), and communication and mass media (Kelly et al., 2020; Zwijze-Koning et al., 2015). The technique consists of a set of precisely defined procedures to collect, analyze, and classify observations of human behavior or “critical incidents” (Bitner et al., 1990; Gremler, 2004; Viergever, 2019). An incident is defined as “an observable human activity that is complete enough in itself to permit inferences and predictions to be made about the person performing the act” (Bitner et al., 1990, p. 73). An act is a critical incident when the incident impacts the general aim of the activity in a significant way—either positively or negatively (Bitner et al., 1990). Schluter et al. (2008, p. 112) suggests an “everyday definition” of an incident as “any event which is not part of the standard operation of a service and which causes, or may cause, an interruption to, or a reduction in, the quality of that service.”

The objective of CIT is to gain an understanding of the incident from the perspective of the respondent. CIT is especially effective in doing this because it requires respondents to tell their own story about an actual event with significant specificity. This allows the respondents to select the incidents most relevant to them (Kelly et al., 2020) and allows room for them to reveal attitudes and behaviors (Greer, 2015; Kelly et al., 2020), thus increasing the reliability of the data (Greer, 2015). The verbatim stories generated by CIT can provide rich data with powerful insight into the phenomenon (Gremler, 2004) and provide an empirical starting point for generating new evidence about the phenomenon of interest (Gremler, 2004; Zhang et al., 2010). Because the context is developed entirely from the respondent’s perspective with no a priori determination of what will be important, CIT is relatively culturally neutral (Bott & Tourish, 2016; Gremler, 2004) and especially useful when researchers do not understand the phenomenon very well (Bitner et al., 1990; Gremler, 2004; Zhang et al., 2010).

### **Participants and procedures**

I recruited respondents through a national consumer panel, and used an online survey software program to administer the semi-structured self-administered questionnaire. Respondents were informed of the nature of the study and asked to exit the survey if their deception involved

fraud for external gain (i.e., illegally obtain medication, workers' compensation, etc.). Deception for the purpose of fraud or illegal activity is outside the scope of this research, and the software directed individuals who fell into this category to a secondary survey unrelated to this study. I provided respondents who continued with the survey a brief definition of deception and an example of various forms of deception.

Deception is defined here as knowingly misleading others by a false appearance, statement, or action. Deception can come in the form of telling lies; omitting information; making false statements; exaggerating or stretching the truth; misrepresenting, manipulating, distorting, or falsifying facts; or otherwise knowingly allowing others to believe something that is not true.

A factual manipulation check was then conducted by asking respondents to choose the statement from among three options consistent with the definition of deception (Kane & Barabas, 2019; Oppenheimer et al., 2009). The information regarding deception was displayed again for those who responded to the manipulation check incorrectly and respondents who failed to choose the correct statement after three attempts were not allowed to continue the survey and automatically ejected (Hauser & Schwarz, 2015). Consistent with Hauser & Schwarz (2015), 91% of the participants passed the manipulation check, resulting in the ejection of 53 participants from the study.

Respondents were encouraged to report incidents that occurred in the 12 months prior to the survey to minimize recall bias (Greer, 2015). The survey then asked a series of questions to focus their attention on one specific incident (i.e., "How long ago did this occur?" "What type of health care provider was involved?" and "In what type of facility did this occur?"). Respondents were subsequently instructed to describe in as much detail as possible and, in their own words, the situation in which they "knowingly misled or deceived the health care provider referred to on the previous screen." Additional open-ended questions asked respondents to (if they had not done so in the previous question) explain why they knowingly deceived or misled the health care provider; and describe "what (if anything) could the health care provider have done to get you to be more honest and forthcoming?" The survey concluded by asking for descriptive information about the respondent.

Consistent with Keaveney (1995), incidents were removed if the responses were too vague or not within the scope of the research. Responses that lack detail or vague in nature tend to suggest that the incident is not well remembered and that some data may be inaccurate (Flanagan, 1954; Keaveney, 1995; Kemppainen, 2000). I then excluded incidents recalling experiences unrelated to the scope regarding the deception of health care professionals for non-fraudulent reasons. This resulted in eliminating nine questionnaires and the inclusion of 625 critical incidences in the analysis.

Respondents range in age from 19 to 83 (mean=34) and 47.3% are male and 52.7% female. Roughly mirroring the racial make-up of the United States, nearly 76 percent identified themselves as White or Caucasian, followed by 13% Black or African American, 8% Hispanic or Latino, and 3% who identified as other or chose not to identify their race or ethnicity. The majority, 60%, reported having at least a 2-year college degree.

## Analysis

To categorize the experiences, research assistants repeatedly read and sorted the incidents consistent with the process Bitner et al. (1990) described. I addressed coding issues Kolb and Burnett (1991) cited in the design of the coding process to increase accuracy, objectivity, and reliability. I defined the coding categories and coding rules based on the self-discrepancy theory constructs and the individual definition of each type of discrepancy: (1) Actual-own versus ideal-own discrepancy, (2) Actual-own versus ideal-other discrepancy, (3) Actual-own versus ought-other discrepancy, and (4) Actual-own versus ought-own discrepancy (see Table 2). An additional “other” category was included for those responses that do not fall into the four discrepancy categories. The author and two independent coders pre-tested categories using a holdout sample of 50 incidents. This process not only helped to ensure a more reliable coding scheme but also provided a significant level of training for the coders. I then refined the category definitions, and the coders received enhanced instruction. All coders worked independently from one another, and except where explicitly noted, all references to coders indicate that the coder and the author were not the same person. I evaluated intra-rater and inter-rater reliability during the pretest and category confirmation phases.

**Table 2**  
*Self-discrepancy coding categories*

| Coding categories<br>(results)                           | Type of discrepancy<br>(results) | Description   |
|--|----------------------------------|---|
| 1) Actual-own versus<br>ideal-own discrepancy<br>(4.5%)  | A-I discrepancy (59.5%)          | Consist of discrepancies in how one sees their actual self and their ideal self (whether the ideal self is from their own perspective or the perspective of others). Results in dejection-related emotions.             |
| 2) Actual-own versus<br>ideal-other discrepancy<br>(55%) |                                  |   |
| 3) Actual-own versus<br>ought-other discrepancy<br>(29%) | A/-O discrepancy (32.5%)         | Consist of discrepancies in how one sees their actual self and their ought self (whether the ought self is from their own perspective or the perspective of others). Results in negative emotional-motivational states. |
| 4) Actual-own versus<br>ought-own discrepancy<br>(3.5%)  |                                  |   |
| 5) Uncategorized (8%)                                    | Not Applicable                   | Not Applicable  |

I used the proportional reduction in loss (PRL) measure to assess intercoder reliability. (Rust & Cooil, 1994). Three independent coders sorting across five categories yielded a proportion of intercoder agreement of .72 with associated reliability of .94. This reliability is well above the minimum standard of .70 for exploratory research and .90 for advanced practice (Nunnally 1978, Rust and Cooil 1994). Having each coder recode the incidents after a period of one month (Weber 1990) assessed intracoder reliability (the rate at which the same coder classifies the same incident in the same manner over time). Intracoder reliability was assessed at .88.

## **Results**

The coders were not able to classify 46 of the 625 critical incidences as a type of self-discrepancy (see Table 2). They classified nearly 92% (579 critical incidences) as a type of self-discrepancy, thus making a strong case for the application of self-discrepancy theory in the investigation of patient deception. Among those classified as a self-discrepancy, 64.25% (59.5% overall) are an A-I discrepancy and 35.75% (32.5% overall) are an A-O discrepancy. I was able to classify 55% of all incidences as a actual-own versus ideal-other discrepancy. Feeling that they had failed to meet the standards others hoped or wished they would attain likely caused respondents in this category to display dejection-related emotions. The following examples reflect the types of responses in this category:

“I didn't state the correct amount of how much I really smoked at the time. I was trying to quit and making some progress but not as much as had been advised. I was not pleased with myself, embarrassed that I was still smoking as much. I desired to make her feel I was doing better than I really was.”

“I made it seem like I walk and exercise more than I actually did. We had discussed the need to exercise more at a previous visit but I had not started exercising more yet. I did not want the doctor to know I had not started. I did not want the doctor to be upset and have to tell me about how not exercising was a bad thing.”

“Misled about consistency in taking medication and amount of exercise that I had done since our last visit. I did this, I suppose, due to my embarrassment at not following through on what was prescribed for me.”

Actual-own versus ought-other discrepancy was the second most coded discrepancy at 29% of the responses. Individuals here often feel they have failed to meet the standards others believe they are required or obligated to attain. Sample responses include the following:

“I was prescribed Chantix to quit smoking. I was supposed to stop smoking 7 days after my initial dose. I continued to smoke cigarettes for a few months after taking my initial dose. When I went to my doctor's appointment and was asked if I had quit on the 7th day I told her that I had in fact quit, when I had not. I did not want to get fussed at for not quitting yet.”



“I am a diabetic and supposed to monitor my sugar readings but I do not always write down the right number. I am afraid that I would disappoint my doctor and he would stop being my doctor.”

Actual-own versus ideal-own discrepancy constituted just 4.5% (28) of the critical incidences. Here, dejection-related emotions result from the individual feeling that they have not lived up to their own standards.

“I am sure that I exaggerated the extent, number of days that I exercise to reflect earlier years where I did indeed exercise that much. I suspect I also thought that if I said I exercised "x" days a week that I would feel motivated to make the statement true and exercise more often.”

“I was afraid of what might really be wrong with me when I was experiencing swallowing difficulties. I was hoping and wanted to believe that I was suffering from something that an antibiotic prescription would take care of and wanted the doctor to agree with me and write the prescription. I was really trying to deceive myself rather than the physician. I did not want to admit to myself that I might have a serious condition.”

We were able to code just over 3.5% of the incidences as an actual-own versus ought-own discrepancy. In this category, individuals feel that they have not lived up to the duties and obligations that they have set for themselves, which leads to agitation-related emotions. Responses in this category are typical of those below:

“I just did not mention how much I still smoked after having heart surgery and feeling guilty and stupid about not quitting smoking when I know it is not good for me.”

“I said that I was going to quit smoking and that I had completely switched from smoking regular cigarettes to smoking e-cigarettes when I hadn't completely given up smoking regular cigarettes. I had honestly tried to, and had stopped smoking regular cigarettes completely for about 5 days but just couldn't resist the craving for a real one for longer than that. I felt guilty that I hadn't given up regular cigarettes completely.”

## **Discussion**

The patient-provider relationship is central to the delivery of high-quality medical care and can affect medical outcomes, patient's psychological state, and patient satisfaction (Colmenares-Roa et al., 2015; Paul et al., 2002). The relation is a fundamental tenet of patient-centered care (Yedidia, 2007), which the Institute of Medicine's "quality chasm" report extols as one of six key elements of high-quality care. Open communication between the health care provider and the patient is essential in building and maintaining an effective relationship and achieving positive medical outcomes (Shore, 2003). Still, patients practice deception often (Reddy, 2013). Conservative estimates suggest that communication inefficiencies throughout the U.S. health care system lead to the loss of thousands of lives each year and waste \$12 billion annually (Agarwal et al., 2010). Some 55% of these communication inefficiencies occur between patients and health care providers (CRICO Strategies, 2015). The current research suggests the

use of SDT to better understand communication inefficiencies in the form of patient deception. While patient deception cannot account for all communication inefficiencies that occur between patients and health care providers, the knowledge from this research gives us a better understanding of issues related to these inefficiencies.

Nearly 92%, or 597 out of 625, critical incidences in this study classified as a type of self-discrepancy, providing compelling evidence that self-discrepancy plays a role in patient deception. As this research suggests, self-discrepancy (whether an A-I discrepancy or an A-O discrepancy) leads to self-presentation in the form of patient deception. In short, a patient's discrepancy within him- or herself likely will trigger a compulsion to deceive a health care provider in an effort to manage the provider's image and opinion of the patient.

We categorized the majority of the incidences (59.5%) as an A-I discrepancy. SDT states that A-I discrepancies produce dejection-related emotions stemming from the perceived absence of positive outcomes and the nonattainment of goals. Further analysis shows that just over half (55%) of all incidences classified specifically in the A-I discrepancy subcategory of actual-own versus ideal-other discrepancy. The results suggest these patients do not just possess a discrepancy between their actual state and ideal state; but the discrepancy lies more specifically between their actual state and the ideal state that the individual believes some significant other hopes or wishes that she would attain. Thus, individuals with this specific discrepancy are vulnerable to dejection-related emotions such as shame, embarrassment, or feeling downcast because these emotions are associated with people believing they have lost standing or esteem in the opinion of others.

We found A-O discrepancies in 32.5% of incidences collected. These discrepancies promote agitation-related emotions (e.g., guilt, uneasiness, fear, or anxiety) from the belief that they are not living up to their duties, responsibilities, or obligations. The actual-own versus ought-other discrepancy was the second most populous subcategory overall, with 29% of the incidences. The results show that while A-I discrepancies were dominant, it is the standpoint of the *other* (rather than the *own*) that is important. Together, discrepancies that involve the standpoint of *others* (actual-own versus ideal-other and actual-own versus ought-other) constitute 84% of all critical incidences collected.

The prevalence of discrepancies from the standpoint of *others* supports the need to treat patients holistically and take into account social ties that may influence the individual's health behaviors and mental state. Extant research shows that social relationships have significant effects on health (Umberson & Montez, 2010). Social connections and close relationships affect health through behavioral, psychosocial, and physiological pathways outside the health care provider's office (Holt-Lunstad, 2018). Still, as the results suggest here, they may negatively affect the patient-provider relationship by hampering open and honest communication.

## **Conclusion**

Understanding the factors that motivate patient deception can significantly impact medical outcomes for the patient, health care cost, medical examination techniques, and patient-provider relationships. With a better understanding of patient motives, health care professionals may be able to identify who will be more likely to engage in deceptive practices and when they might do so. If, for example, a physician knows that a patient has a significant A-I discrepancy (which likely will cause the patient to experience shame or disappointment) then the physician could address these issues, take action to put the patient at ease, and create an environment where

the patient feels less pressure to engage in self-presentation. As a result, the patient may be more willing to provide accurate and honest information and subsequently enable the development of a more effective patient-provider relationship. Empirical investigation, however, is necessary to support this position.

Future research should test the relationship between self-discrepancy theory and self-presentation (lying), as well as the effect self-presentation has on the parties individually and together—that is, the effect self-presentation has on the patient (e.g., perceptions of service quality and satisfaction), the doctor (e.g., empathy and responsiveness), and the relationship between the doctor and patient (e.g., relationship quality).

The focus on the actual-own self-concept, that is, one's own personal standpoint or self-reflection, limits this study. SDT suggests that discrepancies also can emanate from the actual-other self-concept—the standpoint of some significant other (e.g., father, mother, spouse, friend). The actual-other self-concept involves comparing an individual's actual self and his or her beliefs about others' beliefs for him or her. Additionally, the sample for this research consists of a panel of consumers representative of the population of the United States. I do not address the role of national culture here; this may be an area for future investigation.

#### Funding

The Valdosta State University Faculty Research Seed Grant program provided financial support for this research.

#### References

- Agarwal, R., Sands, D. Z., & Schneider, J. D. (2010). Quantifying the economic impact of communication inefficiencies in U.S. hospitals. *Journal of Healthcare Management*, 55(4), 265–282.
- Bitner, M. J., Booms, B. H., & Tetreault, M. S. (1990). The service encounter: Diagnosing favorable and unfavorable incidents. *Journal of Marketing*, 54(1), 71–84.
- Boldero, J., & Francis, J. (2000). The relation between self-discrepancies and emotion: The moderating roles of self-guide importance, location relevance, and social self-domain centrality. *Journal of Personality and Social Psychology*, 78(1), 38–52. <https://doi.org/10.1037/0022-3514.78.1.38>
- Bott, G., & Tourish, D. (2016). The critical incident technique reappraised: Using critical incidents to illuminate organizational practices and build theory. *Qualitative Research in Organizations and Management: An International Journal*, 11(4), 276–300. <https://doi.org/10.1108/QROM-01-2016-1351>
- Castelo-Branco, C., Palacios, S., Ferrer-Barriendos, J., & Alberich, X. (2010). Do patients lie? An open interview vs. a blind questionnaire on sexuality. *Journal of Sexual Medicine*, 7(2), 873–880.
- Chang, C.-S., Chen, S.-Y., & Lan, Y.-T. (2013). Service quality, trust, and patient satisfaction in interpersonal-based medical service encounters. *BMC Health Services Research*, 13, 22–22. <https://doi.org/10.1186/1472-6963-13-22>
- Colmenares-Roa, T., Huerta-Sil, G., Infante-Castañeda, C., Lino-Pérez, L., Alvarez-Hernández, E., & Peláez-Ballestas, I. (2015). Doctor–patient relationship between individuals with

- fibromyalgia and rheumatologists in public and private health care in Mexico. *Qualitative Health Research*, 26(12), 1674–1688. <https://doi.org/10.1177/1049732315588742>
- CRICO Strategies. (2015). *Malpractice Risks in Communication Failures: 2015 Annual Benchmarking Report*. The Risk Management Foundation of the Harvard Medical Institutions Incorporated. <https://www.rmhf.harvard.edu/cbsreport>
- DePaulo, B. M., Kashy, D. A., Kirkendol, S. E., Wyer, M. M., & Epstein, J. A. (1996). Lying in everyday life. *Journal of Personality and Social Psychology*, 70(5), 979–995.
- Downs, M. (2004, April 26). Lie to your doctor, fool yourself. *WebMD Feature: Men's Health*. <http://men.webmd.com/features/lie-to-your-doctor-fool-yourself>
- Fainzang, S. (2002). Lying, secrecy, and power within the doctor–patient relationship. *Anthropology & Medicine*, 9(2), 117–133.
- Feldman, R. S., Forrest, J. A., & Happ, B. R. (2002). Self-presentation and verbal deception: Do self-presenters lie more? *Basic & Applied Social Psychology*, 24(2), 163–170.
- Finnegan, J. (2020). What do patients lie to their doctors about? Plus, tips to encourage them to tell the truth. *FierceHealthcare*, N.PAG.
- Flanagan, J. C. (1954). The critical incident technique. *Psychological Bulletin*, 51(4), 327–358.
- Goffman, E. (1959). *The presentation of self in everyday life*. Doubleday/Anchor Books.
- Greer, D. A. (2015). Defective co-creation: Developing a typology of consumer dysfunction in professional services. *European Journal of Marketing*, 49(1–2), 238–261. <https://doi.org/10.1108/EJM-07-2012-0411>
- Gremler, D. D. (2004). The critical incident technique in service research. *Journal of Service Research*, 7(1), 65–89.
- Hall, M. A., Zheng, B., Dugan, E., Camacho, F., Kidd, K. E., Mishra, A., & Balkrishnan, R. (2002). Measuring patients' trust in their primary care providers. *Medical Care Research and Review*, 59(3), 293–318. <https://doi.org/10.1177/1077558702059003004>
- Hauser, D. J., & Schwarz, N. (2015). It's a trap! Instructional manipulation checks prompt systematic thinking on “tricky” tasks. *SAGE Open*, 5. Directory of Open Access Journals. <https://doi.org/10.1177/2158244015584617>
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, 94(3), 319–340. <https://doi.org/10.1037/0033-295X.94.3.319>
- Higgins, E. T. (1999). When do self-discrepancies have specific relations to emotions? The second-generation question of Tangney, Niedenthal, Covert, and Barlow (1998). *Journal of Personality and Social Psychology*, 77(6), 1313–1317. <https://doi.org/10.1037/0022-3514.77.6.1313>
- Holt-Lunstad, J. (2018). Why social relationships are important for physical health: A systems approach to understanding and modifying risk and protection. *Annual Review of Psychology*, 69(1), 437–458. <https://doi.org/10.1146/annurev-psych-122216-011902>
- Kane, J. V., & Barabas, J. (2019). No harm in checking: using factual manipulation checks to assess attentiveness in experiments. *American Journal of Political Science (John Wiley & Sons, Inc.)*, 63(1), 234.
- Keaveney, S. M. (1995). Customer switching behavior in service industries: An exploratory study. *Journal of Marketing*, 59(2), 71.
- Kelly, L., Kerr, G., & Drennan, J. (2020). Triggers of engagement and avoidance: Applying approach-avoid theory. *Journal of Marketing Communications*, 26(5), 488–508.
- Kemppainen, J. K. (2000). The critical incident technique and nursing care quality research. *Journal of Advanced Nursing*, 32(5), 1264–1271.

- Levy, A. G., Scherer, A. M., Zikmund-Fisher, B. J., Larkin, K., Barnes, G. D., & Fagerlin, A. (2018). Prevalence of and factors associated with patient nondisclosure of medically relevant information to clinicians. *JAMA Network Open*, 1(7), e185293–e185293. <https://doi.org/10.1001/jamanetworkopen.2018.5293>
- Li, C.-C., Matthews, A. K., Dossaji, M., & Fullam, F. (2017). The relationship of patient-provider communication on quality of life among african-american and white cancer survivors. *Journal of Health Communication*, 22(7), 584–592.
- Morgan, W. (2012). Why do patients lie to their doctors? *ACA News (American Chiropractic Association)*, 8(5), 24–24.
- Oppenheimer, D. M., Meyvis, T., & Davidenko, N. (2009). Instructional manipulation checks: Detecting satisficing to increase statistical power. *Journal of Experimental Social Psychology*, 45(4), 867–872.
- Palmieri, J., & Stern, T. (2009). Lies in the doctor-patient relationship. *Primary Care Companion to the Journal of Clinical Psychiatry*, 11(4), 163–168. <https://doi.org/10.4088/PCC.09r00780>
- Paul, H., Dains, J. E., Paterniti, D. A., Hechtel, L., Chang, T., Tseng, E., & Rogers, J. C. (2002). Medical student attitudes toward the doctor-patient relationship. *Medical Education*, 36(6), 568–574.
- Ravn, K. (2009, June 8). A body of lies; It's tempting to fib to the doctor at times. But even a seemingly minor mistruth might lead to a wrong diagnosis or treatment. *Los Angeles Times*, E1.
- Raymond, J. (2009, January 7). Little white-coat lies. *The Daily Beast: Health*. <http://www.thedailybeast.com/newsweek/2009/01/07/little-white-coat-lies.html>
- Reddy, S. (2013, February 18). "I don't smoke, doc," and other patient lies [The Wall Street Journal]. *The Wall Street Journal: Your Health*. <http://online.wsj.com/article/SB10001424127887323478004578306510461212692.html>
- Ross, R. R., & Altmaier, E. M. (1990). Job analysis of psychology internships in counseling center settings. *Journal of Counseling Psychology*, 37(4), 459–464. <https://doi.org/10.1037/0022-0167.37.4.459>
- Rust, R. T., & Cooil, B. (1994). Reliability measures for qualitative data: Theory and implications. *Journal of Marketing Research*, 31(1), 1–14.
- Ruth, J. A., Otnes, C. C., & Brunel, F. F. (1999). Gift receipt and the reformulation of interpersonal relationships. *Journal of Consumer Research*, 25(4), 385–402.
- Salisbury, A. C., Chan, P. S., Gosch, K. L., Buchanan, D. M., & Spertus, J. A. (2011). Patterns and predictors of fast food consumption after acute myocardial infarction. *The American Journal of Cardiology*, 107(8), 1105–1110.
- Schlenker, B. R., & Leary, M. R. (1982). Social anxiety and self-presentation: A conceptualization model. *Psychological Bulletin*, 92(3), 641–669.
- Schluter, J., Seaton, P., & Chaboyer, W. (2008). Critical incident technique: A user's guide for nurse researchers. *Journal of Advanced Nursing*, 61(1), 107–114.
- Shore, D. A. (2003). Communicating in times of uncertainty: The need for trust. *Journal of Health Communication*, 8, 13.
- Strauman, T. J., Vookles, J., Berenstein, V., Chaiken, S., & Higgins, E. T. (1991). Self-discrepancies and vulnerability to body dissatisfaction and disordered eating. *Journal of Personality and Social Psychology*, 61(6), 946–956. <https://doi.org/10.1037/0022-3514.61.6.946>

- Talen, M. R., Grampp, K., Tucker, A., & Schultz, J. (2008). What physicians want from their patients: Identifying what makes good patient communication. *Families, Systems, & Health*, 26(1), 58–66.
- Umberson, D., & Montez, J. K. (2010). Social relationships and health: A flashpoint for health policy. *Journal of Health and Social Behavior*, 51 Suppl(Suppl), S54–S66. <https://doi.org/10.1177/0022146510383501>
- Viergever, R. F. (2019). The critical incident technique: Method or methodology? *Qualitative Health Research*, 29(7), 1065–1079. <https://doi.org/10.1177/1049732318813112>
- Vohs, K. D., Baumeister, R. F., & Ciarocco, N. J. (2005). Self-regulation and self-presentation: regulatory resource depletion impairs impression management and effortful self-presentation depletes regulatory resources. *Journal of Personality and Social Psychology*, 88(4), 632–657.
- Yedidia, M. J. (2007). Transforming doctor-patient relationships to promote patient-centered care: Lessons from palliative care. *Journal of Pain and Symptom Management*, 33(1), 40–57.
- Zhang, J., Beatty, S. E., & Mothersbaugh, D. (2010). A CIT investigation of other customers' influence in services. *The Journal of Services Marketing*, 24(5), 389–399. <https://doi.org/10.1108/08876041011060495>
- Zhong, Z.-J., Nie, J., Xie, X., & Liu, K. (2019). How medic-patient communication and relationship influence chinese patients' treatment adherence. *Journal of Health Communication*, 24(1), 29–37.
- Zwijze-Koning, K. H., De Jong, M. D. T., & Van Vuuren, M. (2015). Evaluating internal public relations using the critical incident technique. *Journal of Public Relations Research*, 27(1), 46–62. <https://doi.org/10.1080/1062726X.2014.924840>

#### About the Author

Gary Daniel Futrell (gdfutrell@valdosta.edu) is an associate professor of marketing at The Langdale College of Business at Valdosta State University, where he teaches health care marketing, the marketing of services, and sales management. His research interests focus on the marketing of health care services and the service encounter.

#### Discussion Questions

1. This article focuses on the health care provider-patient relationship. How can you apply the findings of this research to other consumer relationships?
2. Could the knowledge of one's self-discrepancy affect one's behavior (e.g., reduce attempts to control images of self)?
3. Are there any potential positive outcomes of self-discrepancy?
4. How might culture affect how self-discrepancies manifest themselves?

To Cite this Article

Futrell, G. D. (2021, Fall). Why patients lie: A self-discrepancy theory perspective of patient deception. *Journal of Multidisciplinary Research*, 13(2), 43-57.





# **The Relative Age Effect in Higher Education**

**Michal Ben-Eli**  
*University of Haifa*

**Maytal Shabat Simon**  
*Tel Hai Academic College*

and

**Orr Levental**  
*Tel Hai Academic College*

## **Abstract**

The relative age effect (hereafter RAE) is a phenomenon causing individuals born in the first months of each year to have physical and mental advantages over those born in the last months. This effect has been the subject of wide research in the context of sports but has received less interest in the field of education, especially higher education. The present article analyzes the magnitude and characteristics of the relative age effect in one teacher training college in Northern Israel. The linear regression analysis included matriculation and graduation scores of 569 college students as well as other variables such as gender and field of study. The findings indicate that the RAE does not exist within higher education. These findings contradict prior studies conducted in higher education settings but are consistent with similar studies about RAE in Israeli sports. The article discusses explanations of the results and their significance in the educational context.

*Keywords:* relative age effect, higher education, Israel, education

## **Introduction**

In his best-selling book *Outliers: The Story of Success*, Gladwell (2008) argues that successful individuals do not merely possess a unique set of traits but rather: “(they) are invariably the beneficiaries of hidden advantages and extraordinary opportunities and cultural legacies that allow them to learn and make sense of the world in ways others cannot” (p. 18). Thus, the social circumstances of one's life, such as the place of birth, can alter his life course. One aspect, which we discuss in this article, is the physical and mental maturity of individuals within their peer group.

In order to avoid significant differences between children, educational institutions, extracurricular activities, and sports teams classify participants by age, usually divided into cohorts of 12 months. In sports, institutions typically determine an age ‘cut-off’ according to a calendar year in the Gregorian calendar or according to school grades, which usually divides accordingly. Therefore, one age group usually includes children born between January 1 and December 31 of a given year. The result of these cut-offs is that in the same age group, there are significant differences between the children. For instance, in the age group of 6, the age at which they start first grade, there may be a maximum difference of 17% between two children. This relative difference in age contributes to the gap between children, who also maintain in adulthood and, therefore, the term ‘relative age effect’ (hereafter RAE) (Musch & Grondin, 2001). The difference can manifest in height and weight (Freeman et al., 1995), and cognitive abilities (Morrison, Smith, & Dow-Ehrensberger, 1995). The physical and cognitive differences might cause bias in perceiving those older children as more talented than the younger ones by age group. This preferential ratio at young ages, though, increases the rate of competitive athletes born in the first months of the year (Helsen, Van Winckel, & Williams, 2005). This situation has the potential to discriminate widespread groups in the population and could possibly prevent people from having an equal chance in sport participation. Therefore, some studies in the field seek ways to correct the existing bias (Delorme & Raspaud, 2009). The present study examines the existence and characteristics of RAE in higher education. It is expedient due to the paucity of studies on RAE and cultural differences that may affect the effect. To this end, we conducted quantitative research on one teaching college in northern Israel.

## **Theoretical Background**

### **The Relative Age Effect and the Studies in Sports**

A little more than a decade ago, Coblev et al. (2009) conducted a meta-analysis of more than 38 articles in the RAE field in sports since 1984. They found that the effect did exist but more strongly among young men, in representative teams and popular sports. Most of the studies on RAE in sports examined soccer (Helsen et al., 2005) and ice hockey (Nolan & Howell 2010). RAE also is found in group and individual sports (Smith et al. 2018) and has been the subject of measurement in different regions of the world, including Europe (González-Víllora, Pastor-Vicedo, & Cordente, 2015), the U.S.A. (Glamser & Vincent, 2004), Africa (Grobler, Shaw, & Coopoo, 2016), and Asia (Liu & Liu, 2008). Several studies found no evidence of the RAE and even found an opposite effect (Gibbs, Jarvis, & Dufur, 2012; Fumarco et al., 2017). One explanation for this is the motivation of the young players in the group to deal with the other players who are physically bigger and stronger.

Lidor and others (2010, 2014) have conducted two studies in the context of Israeli sports. The former look at the RAE of 521 athletes from the top leagues in a variety of sports. Because most studies use samples from countries with a large population, Lidor et al.'s research aimed at examining whether the relative age effect also exists in small countries. Their rationale was that since there are not a large number of children to choose from and not many competition options, the coaches would show more flexibility in the opportunities they gave to the weaker children. The studies found no significant difference among the players who were born in the first quarter of the year, compared to those born in the last. This, according to the authors, was due to a lack of flexibility when choosing athletes in the children's groups. The second study (Lidor et al., 2014) sought to examine RAE among 389 senior league athletes in Israel. This study also found no significant difference in the proportion of players who were born in the first quarter, compared to those who were born in the fourth quarter. In this case, too, the authors claim the reason for these results was smaller numbers of young athletes and the lack of flexibility when selecting players. In both cases, due to the division into different sports, the number of participants in each type of sport was low, compared to other similar studies in the field.

### **Relative Age Effect and Academic Achievements**

Most of the research in the field of RAE focus on sports but has lately received attention from other disciplines and social fields as well. For example, Thompson, Barnsley, and Battle (2004) found that older children in their age group are more likely to have high self-esteem and have a competitive personality (Page, Sarkar, & Silva-Goncalves, 2017). RAE also has a negative effect on life satisfaction in adolescents. So, the younger teens in that year, from a variety of countries, were less satisfied than about 3% than the older ones (Fumarco & Baert, 2018). Apart from adopting personal characteristics, RAE also influences seemingly objective diagnostic rates. In an Israeli study on the prevalence of treatment prescribed for people with ADHD, the researchers analyzed data from over one million children (Hoshen et al., 2016). The study found that the doctors prescribed more medication to younger children in the classroom (defined in the study as born in the last trimester of the year – August to November) than to the children born on the middle third of the year. Furthermore, those children received treatment more frequently than the children born in the first trimester of the year. In other words, the chance for diagnosis and treatment for ADHD of young children in the age group was greater than 19% of older children in the same age group. Researchers found similar results in other countries such as Norway (Karlstad et al., 2017) and Finland (Sayal et al., 2017).

Over the past half-century, several authors examined academic success, which is at the center of the present study. Regarding RAE and success in formal education, researchers found that older students in the classroom were more likely to succeed in school (Thompson, 1971; Allen & Barnsley, 1993). Peña (2016) also found that older students in the class have higher test scores than their younger classmates. Even if researchers conduct identical age tests for all students, there is an advantage to those born in the last months of the year. Another study conducted in Israel (Attar & Cohen-Zada, 2018) found that waiting for one year to enter school increases the eighth-grade scores in both language and mathematics. Relying on test scores on the PIRLS (2006) TIMSS (2007) and PISA (2009), Ponzo and Scoppa (2011) found that REA also was present among students in Italy from age 9 to 15. One of the implications of this discrepancy is evident according to a study in France (Bernardi, 2014) that younger students, by their relative age, are more likely to repeat the same grade for another year. The gap is due to

differences in the physical and cognitive levels at an early age but remains for years. Navarro's Garcia-Rubio and Olivers (2015) found RAE among eighth-grade students. Another study found that RAE existed in high school students (Cobley et al., 2009). This manifestation also crosses cultures, as Sprietsma's article (2010) article found, examining the relationship between RAE and student achievement of five-year-old students across sixteen different countries. The advantages of RAE also exist beyond school age and in the lives of adults. For example, in Japan, beyond the better grades, the older individuals in their age group also have, on average, more years of formal education, compared to their younger classmates (Kawaguchi, 2011). Du, Gao, and Levi's study (2012) also demonstrated the long-term impact of RAE by showing a correlation between RAE and success in the business world during adulthood. This, due to differences in social and emotional abilities (Dixon, Horton, & Weir, 2011).

RAE has received little research interest in the context of success in higher education. Russell and Startup (1986) early paper is one of the few that examined the effect of relative age and student performance in higher education. An examination of universities in England has shown that the relatively older students start with an advantage, but this trend reverses by the time they complete their degree. That is, those who are relatively young in the same year achieve better grades at graduation. The authors explained that the skills required for success in learning probably peak at the age of 18, the typical age of entry into higher education in England. These skills then fade, and the gap narrows by the end of the undergraduate degree. Benito and Soria-Espin (2020) found similar results, showing differences in university entrance grades in Spain so that the relatively older students achieved better results than their younger counterparts. However, they point out that this gap narrows over the years and is mainly relevant to women and not men. The authors explained the gap by the complexities of the higher education environment compared to school. Pellizzari and Billari (2012) also point to the opposite trend whereby the relatively younger students succeed better in the higher education environment. One of the explanations for this phenomenon, according to the authors, is that younger students tend to have more limited social lives (see Patalay et al., 2015), lack romantic relationships and are freer to invest themselves in learning.

Another point to note is that RAE may also influence the choice of the major field in higher education. For example, researchers have found that among men, there is a higher incidence of relatively older students in the field of sports sciences. This is likely due to their early advantage in sport derived from the effect (Boccia, Rainoldi, & Brustio, 2017).

## **Methods**

### **Data Collection and Analysis**

The researchers collected anonymous data via Ohalo College in Northern Israel from 569 Ohalo students (457 females and 88 males). All procedures complied with the safety guidelines for behavioral research, and the College Committee on Activities Involving Human Participants approved them.

We used STATA v15 to analyze the data. Specifically, modeling the relationship between dependent variables (two different sets of grades, e.g., Graduation Grades and High School Graduation Grades) and an independent variable (birth month represented in quadrants, cluster of 3 months for each quadrant) using linear regression.

## Results

### All Sectors Data

**Figure 1**  
*Students' distribution by quadrants of birth*

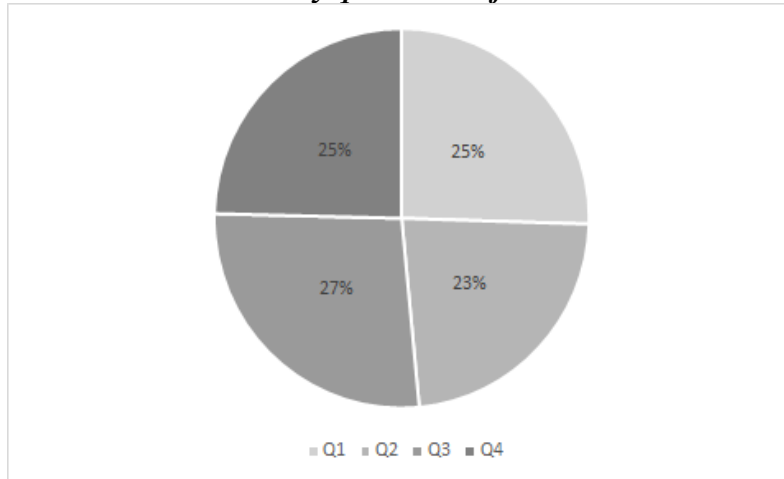


Figure 1 depicts the distribution of all students across four quadrants (N=569). Each quadrant represents a cluster of 3 months. There are no significant differences between quadrants.

**Figure 2**  
*Students' grades by quadrants of birth*

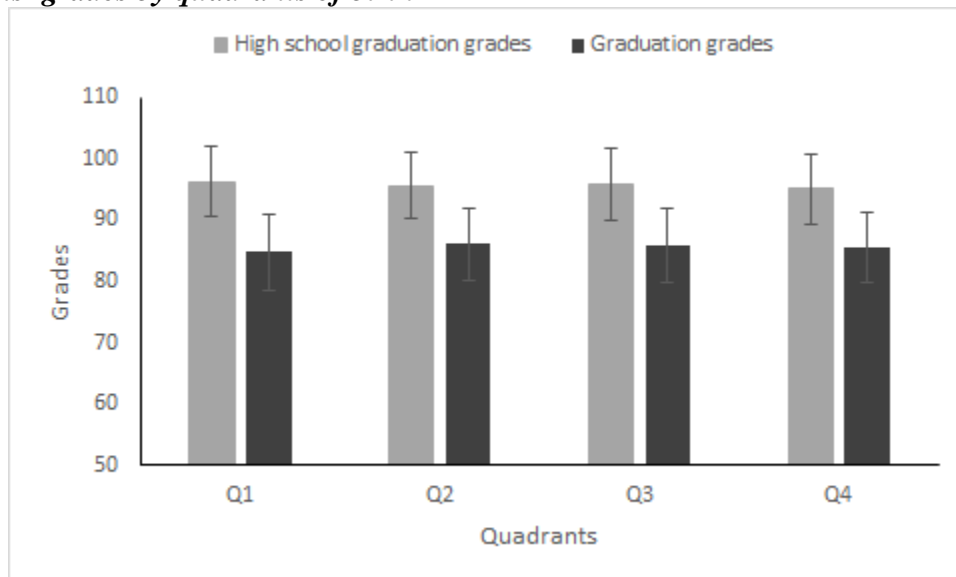


Figure 2 depicts the distribution of high school graduation grades and graduation grades for all students, across four quadrants. Each quadrant represents a cluster of 3 months. We present data as Mean±SD. There are no significant differences between quadrants for each type of grade.

**Figure 3**  
*Students' high school grades by gender and quadrants of birth*

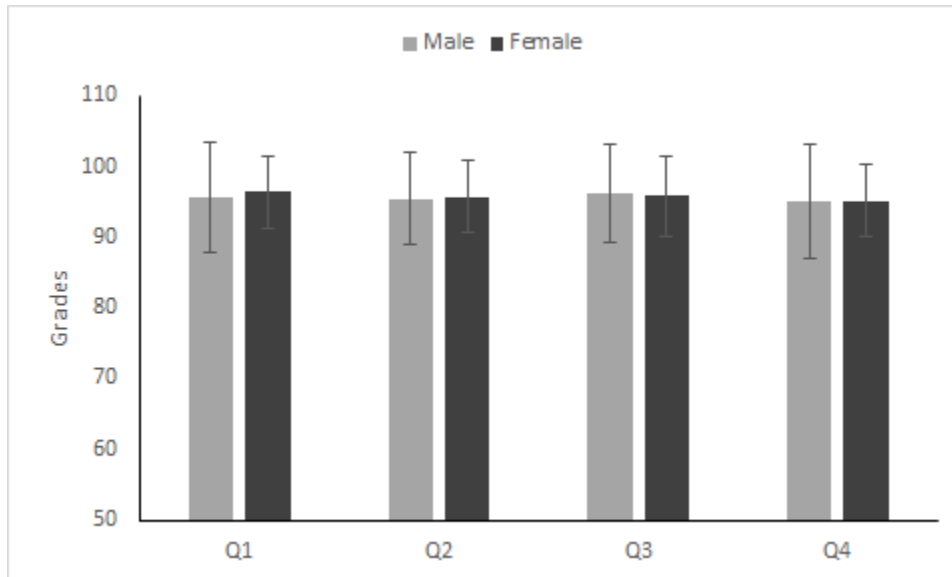


Figure 3 depicts the distribution of high school graduation grades across gender and four quadrants. Data is presented as Mean±SD (Male:112, Female:457). There are no significant differences between genders across quadrants.

**Figure 4**  
*Students' graduation grades by gender and quadrants of birth*

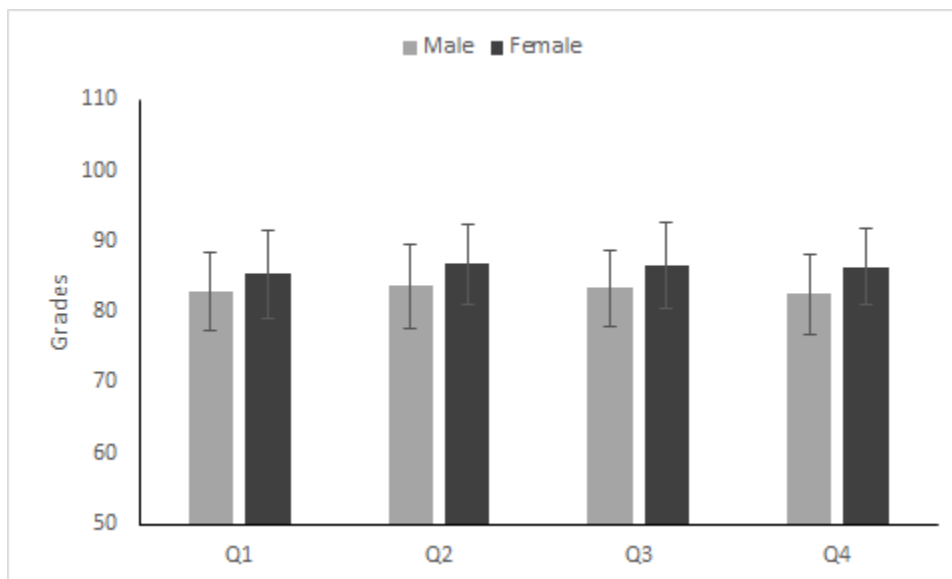


Figure 4 depicts the distribution of graduation grades across gender and four quadrants. Data is presented as Mean±SD (Male:112, Female: 457). There are no significant differences between genders across quadrants.

## Physical Education Data

**Figure 5**

*PE Students' distribution by quadrants of birth*

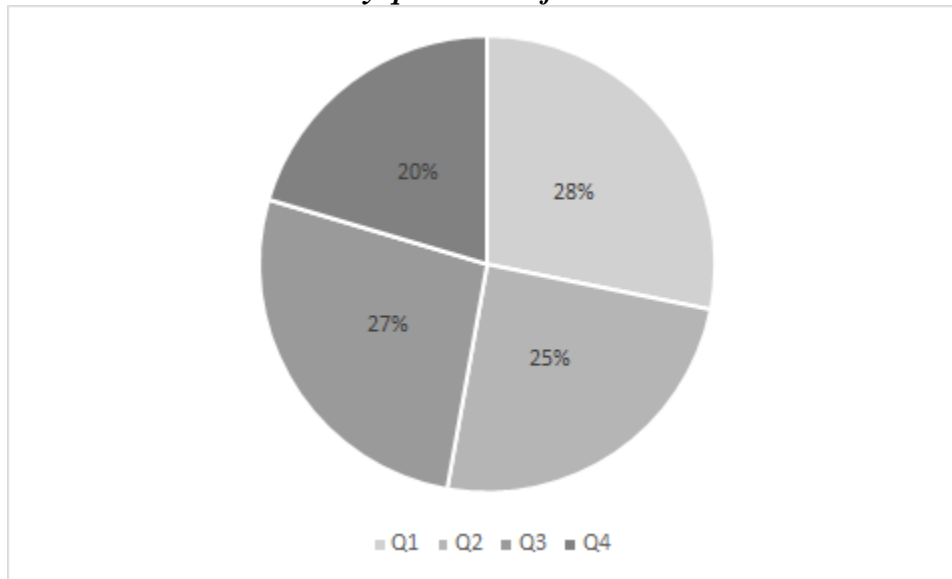


Figure 5 depicts the distribution of physical education students across four quadrants (N=142). Each quadrant represents a cluster of 3 months. There are no significant differences between quadrants.

**Figure 6**

*PE Students' grades by quadrants of birth*

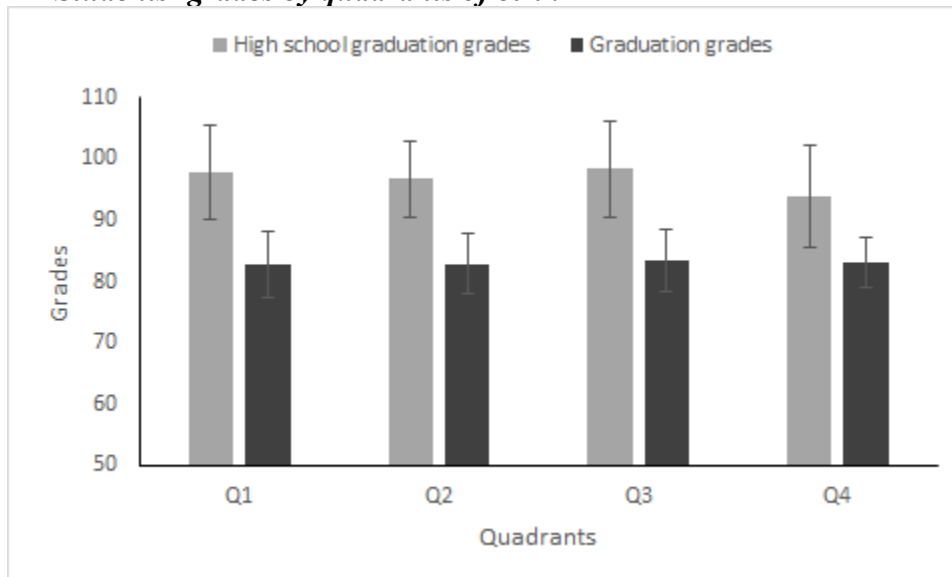


Figure 6 depicts the distribution of high school graduation grades and graduation grades for all PE students, across four quadrants. Each quadrant represents a cluster of 3 months. We present data as Mean±SD. There are no significant differences between quadrants for each type of grade.

**Figure 7**  
**Students' grades by gender and quadrants of birth**

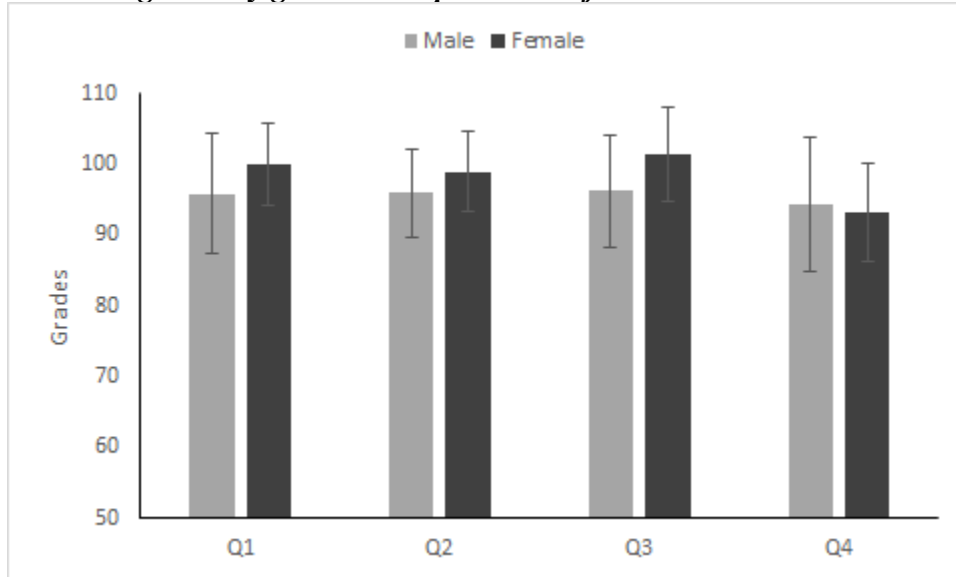


Figure 7 depicts the distribution of high school graduation grades and graduation grades across gender. We presented data as Mean $\pm$ SD (Male:86, Female:56). There are significant differences between genders across quadrants. Further analysis revealed a significant difference for the fourth quadrant only in the female group.

**Table 2**  
**Linear regression fit model for high school grades (quadrants over gender)**

| Parameters                                       | # quadrant | Mean  | STD  | <i>t</i> | <i>P</i><br>value | DF | N   |
|--|------------|-------|------|----------|-------------------|----|-----|
| High school graduation grades (for both genders) | 4          | -3.88 | 1.82 | -2.12    | 0.035             | 3  | 142 |
| High school graduation grades (Females only)     | 4          | -6.83 | 2.32 | -2.94    | 0.005             | 3  | 56  |

Table 1 depicts results from the linear regression fit model between high school graduation grades and four quadrants over both genders and females only. The fourth quadrant is significantly different from the others ( $p=0.035$  and  $p=0.038$ ).



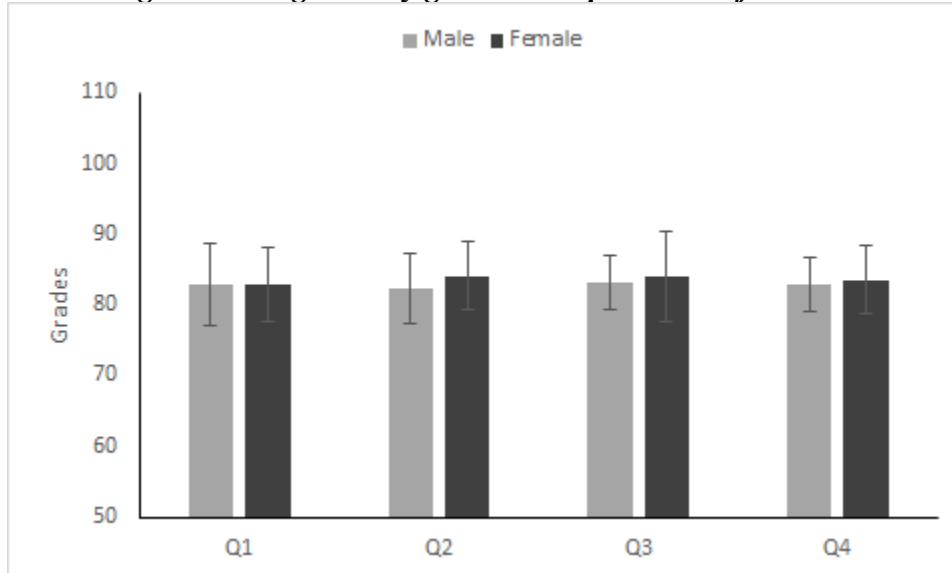
**Figure 8*****Students' graduation grades by gender and quadrants of birth***

Figure 8 depicts the distribution of graduation grades across gender and four quadrants. We presented data as Mean $\pm$ SD (Male:86, Female:56). There are no significant differences between genders across quadrants.

### Discussion

The relative age effect (RAE) is the product of an arbitrary distribution for age groups, most often upon entering kindergarten and school. The difference in chronological age creates differences in the physical and mental abilities of the children and consequently, in the attitude towards them. This prioritization, along with the gaps in abilities, produces an advantage for older children of any age group. This gap affects achievements in both schools (Peña, 2016) and sports (Helsen, Van Winckel, & Williams, 2005). This study focused on RAE in higher education and thus differed in two essential points from the above cases. First, unlike the early learning environment, higher education students actively choose their entry into the system and field of study and, therefore, a broader range of factors drives them. Some of these factors relate to the process itself, such as pleasure, experiences, difficulties, and interest; some relate to future economic and professional goals. It is important to emphasize that the choice itself does not necessarily mean the academic environment is homogeneous in terms of the students' age composition. Nonetheless, the set of abilities and shared goals are relatively similar. Second, sports, especially at a young age, constitute an environment that has no predetermined period or a defined goal. In other words, while children and adolescents choose to participate in sports, they do so primarily for pleasure. This is in contrast with higher education, in which students aim to obtain a specific qualification after a certain period. Additionally, over the years, the cognitive and physiological gaps are naturally narrowing, and thus, the gap may become negligible. Even though the higher education environment presents a unique setting, only a relatively small number of studies have examined RAE among students in higher education (Beneito & Soria-Espin, 2020).

The purpose of this study was to examine whether RAE also was present at the undergraduate level and was significant in obtaining grades: general academic grades and field experience specifically. This is to see if the effect relates to both educational and actual behavioral aspects. Likewise, we did complementary analyses to examine the impact of demographic variables and the importance of the chosen major. This is in addition to examining the composition of students in physical education. Focusing on the selected case thus allows illumination of the unique characteristics of the Israeli context; differences according to gender, religion, and ethnic affiliation. Moreover, in this study, we sampled pre-service teachers who would be responsible for providing equal opportunity, reinvention for, or avoiding the creation of, RAE in another generation.

The previous three studies in higher education on this topic have found that the gap remains upon admission (Russell & Startup, 1986; Beneito & Soria-Espin, 2020) but narrows and even reverses until graduation (Pellizzari & Billari, 2012). The relatively older students begin their studies with better grades but graduate with lower scores on average than their younger peers do. In the current study, however, we discovered contradictory findings. As we discuss above, we found no significant correlation between the months of the year in which the students were born and their grades across all three metrics we examined: the average matriculation grade, the field experience during the study, and the final degree classification. Furthermore, we found no significant correlation even when we considered all other variables, such as gender, sector, and academic fields. The findings indicate that RAE is not maintained until the end of high school. It is important to note that studies researchers have conducted in Israel have found that, in the context of sports, there is no evidence of RAE (Lidor et al., 2014; Lidor et al., 2010), but it does exist in the academic context up to the eighth grade (Attar & Cohen-Zada, 2018). Because admission grades are based on the matriculation exams, which begin in the tenth grade, the narrowing of the gap probably occurs in the last years of high school, even before the students enroll in higher education.

We can provide three explanations for this phenomenon. First is the relatively high threshold for acceptance for teaching colleges in Israel, compared to general academic colleges. The high requirements pre-screen for the best potential candidates. As a result, student teachers may have benefited from RAE and, therefore, only the outstanding students who were born in the last months of the year. However, analyzing student prevalence by month shows there is no difference in the number of registrants in each year. The second possible explanation is the age of admission to institutes of higher education in Israel, which is higher on average than in Europe, could be mainly due to compulsory military service for the Jewish, Druze, and Circassian citizens. Earlier findings (Russell & Startup, 1986) show that the closing of cognitive gaps between the ages of 18 and may reduce the disparity. Therefore, the average age of entrance to the academy in Israel can account for the lack of effect in the current case. However, even in this case, we found no differences in the student age of entry, or between the Jewish and Muslim or Christian students who do not serve in the army and, therefore, start their study at a younger age. Moreover, we found no differences between male and female students who serve a year less than men do. The third explanation is that students improve their entrance grades by attending academic prep school or by retaking matriculation exams after graduating school. Therefore, it is crucial to examine further the differences between the matriculation scores and the actual entrance grades of teaching students. Another finding that emerged from the study and contradicted previous ones is that there was no significant difference in students' final grades. That is, in current cases, there is no advantage for relatively younger students when it comes to

academic achievement in higher education. One possible explanation for this is that RAE is not present at the time of admission, and thus, it has no effect on the dynamics of learning or success (Patalay et al., 2015).

Inconsistent with previous results by Boccia, Rainoldi, and Brustio (2017), our findings do not indicate a higher prevalence of relatively older students in physical education studies. We found, though, that for female students born in the last quarter of the year and studying physical education, there are significantly lower matriculation scores than the other students. One possible explanation for this is that the college entrance score for physical education studies consists of, among other things, sports proficiency tests that are in the overall score. Due to RAE, throughout the years, teachers and coaches gave less attention to this population that did not excel in sports. Therefore, this is likely to reflect in the overall entry score that is a requirement for this field of study and that is not a factor within other fields.

Similar to two previous studies on RAE that showed the effect did not exist in Israeli adult athletes (Lidor et al., 2014; Lidor et al., 2010), the current study also indicated the absence of the effect in adulthood in Israel, in contrast to studies in other countries (Kawaguchi, 2011; Du, Gao, & Levi, 2012). This shows that there is minimal bias in opportunities and access to higher education. However, we conducted the study in one college in northern Israel that specializes in teacher training. Due to the sectoral nature of Israeli geography, and the low social status of the teaching profession, other outcomes may exist among other educational institutions, especially those in the geographical, social, and economic center of Israel.

### **Conclusion**

The present study examined RAE in higher education. Previous research has shown that the effect manifests in sports, academic achievements in school, and various aspects of adulthood. However, in higher education, researchers previously have found that the effect exists only at the entry-level of higher education and the choice of field of study. Our results indicated that this effect is not apparent in the Israeli context. It is important to note that we conducted the study at a single teacher training college in northern Israel, and this sampling may have had an effect on either the cultural or peripheral aspects. Therefore, future research should include a broader sampling of other institutions in Israel and other countries. These studies will contribute to deepening theoretical knowledge as it emerged in this study and will help to highlight the importance of specific aspects such as the size of the institution, population composition, field of study, and more.

## References

- Allen, J., & Barnsley, R. H. (1993). Streams and tiers: The interaction of ability, maturity, and training in systems with age-dependent recursive selection. *Journal of Human Resources*, 28(3), 649-659. <https://doi.org/10.2307/146164>
- Attar, I., & Cohen-Zada, D. (2018). The effect of school entrance age on educational outcomes: Evidence using multiple cutoff dates and exact date of birth. *Journal of Economic Behavior & Organization*, 153, 38-57. <https://doi.org/10.1016/j.jebo.2018.06.007>
- Beneito, P., & Soria-Espin, P. J. (2020). Month of birth and academic performance: Differences by gender and educational stage, *No 0120, Discussion Papers in Economic Behaviour*, University of Valencia, ERI-CES.
- Bernardi, F. (2014). Compensatory advantage as a mechanism of educational inequality: A regression discontinuity based on month of birth. *Sociology of Education*, 87(2), 74-88. <https://doi.org/10.1177/0038040714524258>
- Boccia, G., Rainoldi, A., & Brustio, P. R. (2017). Relative age effect in males, but not females, undergraduate students of sport science. *Sport Sciences for Health*, 13(2), 349-353. <https://doi.org/10.1007/s11332-017-0364-7>
- Cobley, S., Baker, J., Wattie, N., & McKenna, J. (2009). Annual age-grouping and athlete development. *Sports Medicine*, 39(3), 235-256. <https://doi.org/10.2165/00007256-200939030-00005>
- Cobley, S., McKenna, J., Baker, J., & Wattie, N. (2009). How pervasive are relative age effects in secondary school education? *Journal of Educational Psychology*, 101(2), 520-528. <https://doi.org/10.1037/a0013845>
- Delorme, N., & Raspaud, M. (2009). The relative age effect in young French basketball players: A study on the whole population. *Scandinavian Journal of Medicine & Science in Sports*, 19(2), 235-242. <https://doi.org/10.1111/j.1600-0838.2008.00781.x>
- Dixon, J., Horton, S., & Weir, P. (2011). Relative age effects: Implications for leadership development. *The International Journal of Sport and Society*, 2(2), 16-1. <https://doi.org/10.18848/2152-7857/cgp/v02i02/54068>
- Du, Q., Gao, H., & Levi, M. D. (2012). The relative-age effect and career success: Evidence from corporate CEOs. *Economics Letters*, 117(3), 660-662. <https://doi.org/10.1016/j.econlet.2012.08.017>
- Freeman, J. V., Cole, T. J., Chinn, S., Jones, P., White, E. M., & Preece, M. A. (1995). Cross-sectional stature and weight reference curves for the UK, 1990. *Archives of Disease in Childhood*, 73(1), 17-24. <https://doi.org/10.1136/ad.73.1.17>
- Fumarco, L., & Baert, S. (2018). Younger and dissatisfied? Relative age and life-satisfaction in adolescence. *IZA Discussion Paper*, 11990.
- Fumarco, L., Gibbs, B. G., Jarvis, J. A., & Rossi, G. (2017). The relative age effect reversal among the National Hockey League elite. *PloS One*, 12(8), e0182827. <https://doi.org/10.1371/journal.pone.0182827>
- Gibbs, B. G., Jarvis, J. A., & Dufur, M. J. (2012). The rise of the underdog? The relative age effect reversal among Canadian-born NHL hockey players: A reply to Nolan and Howell. *International Review for the Sociology of Sport*, 47(5), 644-649. <https://doi.org/10.1177/1012690211414343>
- Gladwell, M. (2008). *Outliers: The story of success*. New York: Little, Brown. <https://doi.org/10.5465/amp.2010.52842954>

- Glamser, F. D., & Vincent, J. (2004). The relative age effect among elite American youth soccer players. *Journal of Sport Behavior*, 27(1), 31-38. <https://doi.org/10.26773/smj.181007>
- González-Víllora, S., Pastor-Vicedo, J. C., & Cordente, D. (2015). Relative age effect in UEFA championship soccer players. *Journal of Human Kinetics*, 47(1), 237-248. <https://doi.org/10.1515/hukin-2015-0079>
- Grobler, T. D. T., Shaw, B. S., & Coopoo, Y. (2016). Relative Age Effect (RAE) in male school-aged rugby union players from Gauteng, South Africa. *African Journal for Physical Activity and Health Sciences (AJPHEs)*, 22(2.2), 626-634.
- Helsen, W. F., Van Winckel, J., & Williams, A. M. (2005). The relative age effect in youth soccer across Europe. *Journal of Sports Sciences*, 23(6), 629-636. <https://doi.org/10.1080/02640410400021310>
- Hoshen, M. B., Benis, A., Keyes, K. M., & Zoëga, H. (2016). Stimulant use for ADHD and relative age in class among children in Israel. *Pharmacoepidemiology and Drug Safety*, 25(6), 652-660.
- Karlstad, Ø., Furu, K., Stoltenberg, C., Håberg, S. E., & Bakken, I. J. (2017). ADHD treatment and diagnosis in relation to children's birth month: Nationwide cohort study from Norway. *Scandinavian Journal of Public Health*, 45(4), 343-349.
- Kawaguchi, D. (2011). Actual age at school entry, educational outcomes, and earnings. *Journal of the Japanese and International Economies*, 25(2), 64-80. <https://doi.org/10.1016/j.jjie.2009.02.002>
- Lidor, R., Arnon, M., Maayan, Z., Gershon, T., & Côté, J. (2014). Relative age effect and birthplace effect in Division 1 female ballgame players—The relevance of sport-specific factors. *International Journal of Sport and Exercise Psychology*, 12(1), 19-33. <https://doi.org/10.1080/1612197x.2012.756232>
- Lidor, R., Côté, J., Arnon, M., Zeev, A., & Cohen-Maoz, S. (2010). Relative age and birthplace effects in division 1 players—Do they exist in a small country. *Talent Development & Excellence*, 2(2), 181-192.
- Liu, W. M., & Liu, D. (2008). A research on the Relative Age Effect among excellent youth female football players in China [J]. *Journal of Beijing Sport University*, 31(1), 135-137.
- Morrison, F. J., Smith, L., & Dow-Ehrensberger, M. (1995). Education and cognitive development: A natural experiment. *Developmental Psychology*, 31(5), 789-799. <https://doi.org/10.1037/0012-1649.31.5.789>
- Musch, J., & Grondin, S. (2001). Unequal competition as an impediment to personal development: A review of the relative age effect in sport. *Developmental Review*, 21(2), 147-167. <https://doi.org/10.1006/drev.2000.0516>
- Navarro, J. J., García-Rubio, J., & Olivares, P. R. (2015). The relative age effect and its influence on academic performance. *PloS One*, 10(10), e0141895. <https://doi.org/10.1371/journal.pone.0141895>
- Nolan, J. E., & Howell, G. (2010). Hockey success and birth date: The relative age effect revisited. *International Review for the Sociology of Sport*, 45(4), 507-512. <https://doi.org/10.1177/1012690210371560>
- Page, L., Sarkar, D., & Silva-Goncalves, J. (2017). The older the bolder: Does relative age among peers influence children's preference for competition? *Journal of Economic Psychology*, 6e, 43-81. <https://doi.org/10.1016/j.joep.2017.10.002>
- Patalay, P., Belsky, J., Fonagy, P., Vostanis, P., Humphrey, N., Deighton, J., & Wolpert, M. (2015). The extent and specificity of relative age effects on mental health and functioning

- in early adolescence. *Journal of Adolescent Health*, 57(5), 475-481. <https://doi.org/10.1016/j.jadohealth.2015.07.012>
- Pellizzari, M., & Billari, F. C. (2012). The younger, the better? Age-related differences in academic performance at university. *Journal of Population Economics*, 25(2), 697-739. <https://doi.org/10.1007/s00148-011-0379-3>
- Peña, A. P. (2016). Creating winners and losers: Date of birth, relative age in school, and outcomes in childhood and adulthood. *Economics of Education Review*, 56(C), 152-176. <https://doi.org/10.1016/j.econedurev.2016.12.001>
- Ponzo, M., & Scoppa, V. (2014). The long-lasting effects of school entry age: Evidence from Italian students. *Journal of Policy Modeling*, 36(3), 578-599. <https://doi.org/10.1016/j.jpolmod.2014.04.001>
- Russell, R. J. H., & Startup, M. J. (1986). Month of birth and academic achievement. *Personality and Individual Differences*, 7(6), 839-846. [https://doi.org/10.1016/0191-8869\(86\)90082-6](https://doi.org/10.1016/0191-8869(86)90082-6)
- Sayal, K., Chudal, R., Hinkka-Yli-Salomäki, S., Joelsson, P., & Sourander, A. (2017). Relative age within the school year and diagnosis of attention-deficit hyperactivity disorder: A nationwide population-based study. *The Lancet Psychiatry*, 4(11), 868-875. [https://doi.org/10.1016/s2215-0366\(17\)30394-2](https://doi.org/10.1016/s2215-0366(17)30394-2)
- Smith, K. L., Weir, P. L., Till, K., Romann, M., & Cobley, S. (2018). Relative age effects across and within female sport contexts: A systematic review and meta-analysis. *Sports Medicine*, 48(6), 1451-1478. <https://doi.org/10.1007/s40279-018-0915-3>
- Sprietsma, M. (2010). Effect of relative age in the first grade of primary school on long-term scholastic results: International comparative evidence using PISA 2003. *Education Economics*, 18(1), 1-32. <https://doi.org/10.2139/ssrn.997221>
- Thompson, A. H., Barnsley, R. H., & Battle, J. (2004). The relative age effect and the development of self-esteem. *Educational Research*, 46(3), 313-320. <https://doi.org/10.1080/0013188042000277368>
- Thompson, D. (1971). Season of birth and success in the secondary school, *Educational Research*, 14, 56-60. <https://doi.org/10.1080/0013188710140107>

#### About the Authors

Michal Ben-Eli is a Ph.D. student at the Department of Special Education at the University of Haifa in Israel. Her primary research expertise is autism, suicidality, and special education.

Maytal Shabat Simon is the head of the Science and Biology Department at Tel Hai Academic College in Israel. Her research expertise is in the fields of neurobiology, decision-making, and cancer.

Orr Levental teaches at the Department of Physical Education at Tel Hai Academic College in Israel. He is the Head of the Research Center for Sports and Physical Activity and the Head of the Leisure and Recreation Studies Program. His research expertise is in the fields of Geography and Sports.

### Discussion Questions

1. How is it that the relative age effect is not universal but cultural-based?
2. What are the implications of installing wider or narrower cut-offs in schools and sports?
3. In what fields other than education and sports are we expected to find the effects of relative age?

### To Cite this Article

Ben-Eli, M., Simon, M. S., & Levental, O. (2021, Fall). The relative age effect in higher education. *Journal of Multidisciplinary Research*, 13(2), 59-73.



“Nighttime Seattle Great Wheel at Pier 57”  
2021

Photography by Scott E. Gillig

Image Copyright © by Scott E. Gillig.  
All rights reserved. Used with permission.



# **The Impossible Interview: A Two-Stage Interview Case for Auditing Students**

**J. L. Souza**

*Saint Joseph University*

**Veronica Paz**

*Indiana University of Pennsylvania*

**Syed Zaidi**

*Louisiana State University*

and

**Samantha Dzielski**

*Indiana University of Pennsylvania*

## **Abstract**

Professional skepticism is a critical component of the auditor's skill set. Developing this component takes time for accounting students and new auditors. Rather than waiting until they have an internship or a full-time auditing position, students can begin practicing this essential skill earlier in their academic careers. The case presents students in their first undergraduate auditing course an introduction to the need for more complex thinking and professional skepticism in the auditing and forensic accounting areas. The case focuses on risk assessment and critical evaluation of audit evidence, primarily through audit interviews. In addition, the case allows students to learn the value of preparation and strategy uniquely: their first attempt at the case is almost impossible to solve.

*Keywords:* audit inquiry, risk assessment, audit evidence, fraud risk, audit interviews, critical thinking, case

## **Introduction**

The PCAOB defines, examines and tests professional skepticism tested in auditing standards and related literature. Both the United States and international standards provide definitions described as requiring a “neutral” mindset for many aspects of an audit. For example, the PCAOB (2015) standards define professional skepticism as “an attitude that includes a questioning mind and a critical assessment of audit evidence.” For areas with higher risks of fraud, standards suggest a mindset of “presumptive doubt.” IAASB (2013) standards note, “[m]aintaining professional skepticism requires an ongoing questioning of whether the information and audit evidence obtained suggests that a material misstatement due to fraud may exist.” The lack of appropriate levels of professional skepticism increases the risks of accepting false or incomplete evidence as fact, which in turn can lead to an overall failure to identify material misstatements in financial statements or material weaknesses in the internal controls. Such failures can be exceedingly costly for the auditor and the audit firm, both reputationally and financially, via litigation or censure. These risks increase when auditors fail to find material fraud. Therefore, training new auditors and auditing students to evaluate audit evidence critically is vital. However, this is a skill that requires time and practice to develop well. Rather than wait until a forensic accounting course or the first day on the job, this case helps begin the process earlier in future auditors’ and forensic accountants’ academic careers.

Asare, Wright, and Zimbelman (2015) find that auditors lack training in effectively detecting fraud and exercising adequate professional skepticism. They note that newer, less experienced auditors are often most exposed to fraud evidence but lack the understanding to recognize it. Given the costs of audit failures concerning fraud, a combination of inexperience with informative evidence may seem cost-efficient but can be the opposite. The authors recommend including more fraud knowledge in accounting curricula to limit the potential of missing vital red flags (Asare et al., 2015). Carpenter, Durtschi, and Milici Gaynor (2011) describe the benefits of a forensic accounting course in improving professional skepticism. The experience provides value in both fraud and error situations and strengthens students’ ability to discern valuable information to improve the effectiveness and efficiency of an audit. They find that a forensic accounting course improves students’ ability to recognize the relevance of facts gathered and that the benefit persists after the course has ended. In their study, students spend an entire semester course with textbook readings and hands-on projects to develop a level of skepticism approaching that required of fraud experts.

Understandably, developing appropriate professional skepticism is a skill that takes time to nurture. Not all students have an opportunity to take a forensic accounting course. However, this skill is necessary for all auditors to possess, not just forensic accountants. One option is to incorporate forensic accounting requirements into more accounting curricula. While this has support from some academics (Albrecht & Sack, 2000; Melancon, 2002; Seda & Peterson Kramer, 2014), it is not practical for all accounting programs.

Fortunately, most introductory audit courses address the concept of professional skepticism. Students learn the basic structure of an audit, including audit risk assessment and fraud risk evaluation. Auditing students learn about the variety of evidence types they may gather during an audit. Most will have some assignments that will require them to choose the

best combination of audit tests for a given situation. Many will even be required to perform some audit tests during their coursework and learn to evaluate the findings. Instructors may use end-of-chapter problems (e.g., the search for unrecorded liabilities or analytical procedures), incorporate audit testing into classroom discussions or activities, or require students to learn the use of computer software to perform data and statistical analyses.

One of the most important types of evidence gathered during an audit is information obtained through inquiry. While many other types of evidence are appropriate for specific audit areas, inquiry is a valid option in almost any area and at almost any stage of an audit. Rarely relied upon solely, an inquiry is the starting point to determine what additional evidence is required. Also, it can identify potential red flags or contradictions that may indicate fraud. Comparing evidence gathered via inquiry to documentary or observational evidence allows auditors to assess the interviewee's reliability or completeness. PCAOB (2015) standards for fraud explicitly note that when "exercising professional skepticism in gathering and evaluating evidence, the auditor should not be satisfied with less-than-persuasive evidence because of a belief that management is honest." Using multiple sources of evidence to evaluate overall persuasiveness requires a quantity of evidence and quality of consistency in the evidence. Therefore, effective inquiry at all stages of an audit is a component of an effective audit. Developing strong inquiry skills is vital to good auditing.

Investigative interviews, as a form of inquiry, require practice and evaluation to be effective. Berez, Metrejean, and Thompson (2017) note that the goal of an audit interview is to have the interviewee reliably confirm information already known and identify potential errors not yet identified. As experienced audit and forensic professionals can attest, this is not a simple skill to master. Prior literature has considered what is necessary to be effective. Walsh and Bull (2010) studied the components of effective interviews. They note that successful interviewers plan better, including considering contingency responses and developing interview strategies. These skills require the interviewers to look at the interview in its entirety before it begins. They must consider what potential answers are reasonable given the existing evidence. They must imagine alternatives to their expectations to prepare for them. They must exercise sufficient professional skepticism in considering the information received. Other characteristics noted in the study included demonstrating flexibility in the interview and managing the conversation (Walsh & Bull, 2010).

Again, these skills require preparation and the ability to compare the information they receive to existing facts. Such skills are challenging for students or new auditors to practice. They require, at a minimum, two parties: one with experience and one that is learning. They also require a realistic setting to ensure the students cannot anticipate the practice interviewees' reactions. This case intends to provide such a setting to practice effectively.

Adding to the difficulty, current students and new auditors are generally of the millennial generation. Their learning preferences do not necessarily match those required to become a good interviewer. Giambatista, Hoover, and Tribble (2017) use the term "complexity avoidance" to describe younger generations' trends to prefer simplicity in gathering and processing information. They explain the root of the concept as the following:

millennials represent the first generation that, from childhood, has learned to expect quick fixes and easy access to solutions. That expectation is in turn likely to result in impatience or discomfort with matters that involve processes requiring patience, reflection, or perseverance. Millennials have spent their intellectual lives in informational

processing patterns that produce an effect of being “delivered to” as opposed to “seeking out” patterns characterized by diligent and patient research. (Giambatista et al., 2017)

This approach makes it easy for untrained or poorly trained new auditors to miss critical details identifying contradictory interview answers. Vrij, Granhag, and Porter (2010) note that even experienced interviewers misread verbal and nonverbal deception cues. Among the pitfalls noted was an over-reliance on simplistic rules of thumb. Given their generalized preference for less complicated problem-solving methods, developing appropriate interview skills could be an even more significant issue for the next generations of auditors and forensic accountants. One means of countering this preference is to begin the exposure to complex problem solving earlier in the academic curricula.

To provide students with interview practice, the authors developed a case in which the focus is not primarily on potential fraud (although red flags abound), nor does it require outside volunteers for the interviews, unlike other popular interview cases (Dee & Durtschi, 2010; Durtschi, 2003; Matson, Sharockman, & Raffield, 2015). The purpose is to challenge students in their first auditing course to think critically within the auditing and forensic accounting areas. In addition, it allows students to learn the value of preparation and strategy uniquely: Their first attempt at the case is almost impossible to solve.

This case has two stages. Stage 1 provides students with an opportunity to experiment with interviewing styles and strategies by taking part in a series of 2-minute “speed dating”-style interviews with their chosen characters. The faculty member plays all characters. After each round, students must consider the veracity and completeness of the answers they received within a small team. This reflection period challenges the students to apply professional skepticism to the information and compare it with previous interview answers and existing evidence. At the end of the first round, teams provide their assessment of what areas pose the most significant risk of misstatement, or fraud, or both. In stage 2, the students again work with their teams to develop a more extended interview of one character. They then conduct a 10-minute team interview with that character, incorporating what they learned in stage 1. This setting illustrates the difficulties with auditor interviews and allows students to enhance their professional skepticism, work as a team to develop more productive strategies, and eventually move on to the next audit steps.

## **Case Information and Implementation**

### **Overview**

Professors can choose to implement the case using either stage 1 or both stages. The authors noted that students often want a second chance after completing the initial interviews. If using both stages, it is helpful (but not necessary) to split them on separate class days to allow teams the time to consider and evaluate the interview responses.

In stage 1 of the case, professors provide students with the background information on a fictional company and assign students to work in teams to assess the risk of fraud or misstatement in the company’s specific functions. They then take part in a series of interviews with the characters of their choice. At the end of this process, they provide their assessment of what areas pose the most significant risk of misstatement, or fraud, or both. Students provide conclusions regarding the possibility (or absence) and likely location of any fraud in summary form or via a class discussion.

In stage 2, the professor provides student teams the information in stage 1, the results of their interviews, and added information to develop a revised risk assessment. From here, the teams select one functional area they feel poses the most significant risk of material misstatement or fraud and interview the character responsible. After the interview, the teams evaluate the new interview information and incorporate it into a risk assessment memo, including steps to address the new risks.

## **Stage 1**

In preparation for stage 1 of the case, the instructor assigns teams based on class size and the amount of information the instructor wants each team to access. There are seven characters in the case. Assigning students to teams of seven would ensure that all teams have access to all characters. Assigning students to smaller teams would require teams to prioritize characters to interview as they would likely not have an opportunity to interview all characters.

Each interview lasts 2 minutes. Therefore, instructors should consider the class size and class period length. A second instructor may be necessary to act as an interviewee for large classes with short class periods. In this case, the two instructors would divide the characters and tasks. An Excel spreadsheet helps instructors to determine the number of rounds and determine the start time. The sample below shows a completed input sheet. Instructors can manually type the number of existing teams or let the spreadsheet calculate the number of teams needed based on size.

**Figure 1**  
***Sample Interview Input Sheet***

|   |            |
|---|------------|
| Date of Stage 1 Interviews:                                       | 10/20/2018 |
| Length of Class Period:   | 75 minutes |
| Start Time for Class:   | 4:15 PM    |
| Number of Students:   | 26         |
| If students are already in teams, note the number of teams here.  |            |
| Number of Existing Teams:   |            |
| If teams have not been established, enter the size of teams here. |            |
| Maximum Students per Team:  | 5 (max 7)  |

The Excel spreadsheet provided includes a single-page handout for students to explain the interview process. Refer to Appendix A for the case materials. Instructors explain the interview process and case materials to students at least one class period before the interview day. It helps to walk through this handout to ensure students understand what they are preparing to do. If not discussed in class, students need to ensure they read it and prepare accordingly. The authors have found that introducing the case, quite literally, as “the impossible interviews” helps demonstrate to students the challenge.

They should be assigned to teams and encouraged to prepare thoroughly for the interviews. This case presumes that students understand the concepts of risk assessments, the risk of material misstatement, and basic fraud risk. Students do not need to be proficient with various

types of audit testing or evidence, but it helps students plan for their interviews. For example, they may wish to request supporting documents or consider calculating estimates. The teams should read the material and develop a strategy of whom to interview, which order to interview, and questions to ask in the interviews. After the interview day has concluded, students should meet with their teams to evaluate the information gathered and put it into context with the case materials.

On the day of the interviews, students should sit together in their teams for discussion purposes. If possible, the teams can spread out so that other teams do not easily overhear them. The authors have reserved oversized rooms for the class period for this purpose, but it is not necessary. The professor names or numbers the teams so the group can anticipate their turn to interview. The professor posts a schedule of interviews by team on the screen so the students know when they must be ready. When each team is due up, they send one member to pose the questions to one employee. The member then takes the information back to the team to evaluate before the following interview is due. All teams must send each member up at least once and may only interview an employee once.

The Excel spreadsheet also provides a schedule for the actual interview day, based on the inputs above, allowing both instructors and teams to track their progress and completed interviews. Below is a sample progress page. Excel will automatically generate the number of teams, time, and round information from the inputs above. As each team interviews a character, the instructor can simply check off the name, and teams can see the availability at the top of the page.

**Figure 2**  
***Sample Interview Day Progress Page***

| Team 1       | Team 2       | Team 3       | Team 4       | Team 5       | Team 6       |
|--------------|--------------|--------------|--------------|--------------|--------------|
| Steve Weimer | Steve Weimer | Steve Weimer | Steve Weimer | Steve Weimer | Steve Weimer |
| Deb Lasher   | Deb Lasher   | Deb Lasher   | Deb Lasher   | Deb Lasher   | Deb Lasher   |
| Marcus Scott | Marcus Scott | Marcus Scott | Marcus Scott | Marcus Scott | Marcus Scott |
| Ben Farmer   | Ben Farmer   | Ben Farmer   | Ben Farmer   | Ben Farmer   | Ben Farmer   |
| Jo Morgan    | Jo Morgan    | Jo Morgan    | Jo Morgan    | Jo Morgan    | Jo Morgan    |
| Andy Madison | Andy Madison | Andy Madison | Andy Madison | Andy Madison | Andy Madison |
| Ellie Warren | Ellie Warren | Ellie Warren | Ellie Warren | Ellie Warren | Ellie Warren |

| Round | Team | Time    | Steve Weimer | Deb Lasher | Marcus Scott | Ben Farmer | Jo Morgan | Andy Madison | Ellie Warren |
|-------|------|---------|--------------|------------|--------------|------------|-----------|--------------|--------------|
| 1     | 1    | 4:17 PM |              | ✓          |              |            |           |              |              |
| 1     | 2    | 4:19 PM | ✓            |            |              |            |           |              |              |
| 1     | 3    | 4:21 PM |              |            | ✓            |            |           |              |              |
| 1     | 4    | 4:23 PM |              |            | ✓            |            |           |              |              |
| 1     | 5    | 4:25 PM | ✓            |            |              |            |           |              |              |
| 1     | 6    | 4:27 PM |              |            |              | ✓          |           |              |              |
| 2     | 1    | 4:29 PM | ✓            |            |              |            |           |              |              |

After stage 1, teams should evaluate the information received in light of the case material questions. The instructor can either use three questions as discussion topics or require a written response.

- For each functional area, what are the key risk factors of a material misstatement? Do you think a material misstatement is likely to have occurred?
- In one functional area, is there evidence of potential fraud? Which area and what is the evidence? How would you adapt the audit to determine fraud did take place?

- For each of the remaining functional areas, how would you rate the risk of fraud? What support do you have for this conclusion?

## **Stage 2**

When using both stages, we recommend reviewing the case over two class periods to allow students to process the information gathered from the initial interviews and develop a plan for the final interview. It can be held soon after stage 1 or after another class discussion related to audit evidence. Since the stage 1 interviews can be completed relatively quickly, depending on class size, longer classes may split the case across multiple class periods by introducing the case during the latter half of one class and allowing the second interview to occur during the first part of the second class. Teams should be allowed class time or time between class sessions to synthesize their understanding of the client's risk profile. The final interviews may occur in class, during office hours, or online based on the instructor's preference and time considerations. Since this stage is more analytical than stage 1, the students work primarily with their group to plan the final interview. Unlike stage 1, this stage requires minimal work on the part of the instructor.

In stage 2, the professor provides the teams further information from preliminary interviews with all the employees. Refer to Appendix B for additional case material. At this point, the goal of each team is to identify one specific area to investigate further. The teams may choose any functional area in the case. Students should identify an area based on their perception of the highest assessed risk of material misstatement or fraud. Once the teams have selected an area, they will need to develop an interview strategy to elicit key information. As this is a financial statement audit, the interview's goal is not a confession but enough information to develop an effectively revised audit plan or justify a forensic specialist.

The interviews for stage 2 are different in that they are both longer and allow the team to work together. All members of the team are present and involved in the interview. These interviews should be at least 10 minutes in length to allow more exploration into lines of inquiry. Interviews can be scheduled either in or out of class due to their nature and the time limit. For out-of-class interviews, the number of teams and faculty time constraints are the only limiting factors. The authors have scheduled them separately during office hours, providing more time for feedback and discussion.

At the end of the interviews, teams should have enough information to prepare a more detailed risk assessment. This risk assessment allows students to focus on the one functional area highlighted in stage 2 and the other areas of the case examined in stage 1. It should provide support for the decision to highlight the functional area the team chose. It should also provide a reasoned assessment of the risks found and recommend steps to address the risks. Refer to Appendix D for a helpful grading rubric.

## **Teaching Notes**

### **Case Learning Objectives**

The objectives of this case focus on introducing students to the complexities of auditing risk assessment and fraud considerations. In conjunction with the case materials, the interviews provide students with a more realistic setting to learn the importance and difficulty of developing

effective professional skepticism. Upon completion of the case, students should be able to do the following:

1. Identify factors indicating a high risk of material misstatement.
2. Identify fraud risk factors in a financial statement audit.
3. Brainstorm with teammates regarding the risks in an audit and appropriate steps to take.
4. Understand the potential difficulty of effectively interviewing client personnel and strategies to improve success.
5. Analyze information from multiple sources for consistency or confirmation.
6. Discuss the implication of audit findings for the remainder of the audit.
7. Consider the necessity of fraud or forensic specialists.

This case allows students to work together to evaluate an intentionally high-risk case. It provides an opportunity for students to learn for themselves the difficulties of interviewing client personnel, particularly in a higher-risk setting. The stage 1 structure also allows students to receive immediate feedback and share it with their classmates, thus supporting each other's learning. The added information provided in stage 2 encourages students to exercise their professional skepticism, as it partially addresses the original information questionably. Finally, the case prompts students to consider the impact of fraud risk on a financial statement audit.

### **Case Solutions**

This case, by design, has a limited structure. As such, students may identify various risk factors, red flags for fraud, and recommendations to address them. To aid instructors in grading the case or leading a class discussion, Appendix C includes suggested answers to the questions asked in each stage's case materials. These are by no means an exhaustive list of the potential recommendations or risk factors students may identify. It is sufficient to provide guidance and lead students to further analysis.

### **Experiment Design**

A quasi-experimental research design applies to students registered in an introductory auditing course over two semesters using a pre and post-test survey design to test the case's efficacy. To obtain a high degree of internal validity and achieve close comparison between the courses, the same instructor taught both classes, used the same syllabus, course content, and exams. All classes meet for 50 minutes three times per week. The authors compare student performance using exams and total points for the two stages of the case as different learning measures, consisting of Exam1, Exam 2, and total case points.

### **Sample**

An AACSB university, part of a 14-State University System in the USA, provides the sample. The System's mission is to teach most state-university students, which translates to relatively low admission requirements compared to higher-tier universities. Students vary widely in education interests, academic ability, and aptitude for the course subject – from excellent and



well motivated to less capable. The University resides in a small-sized rural area where students are traditional and live mainly on campus. Many students have part-time jobs and are active in student life and organizations. Students can attend the class as required or individually needed. Attendance is not mandatory but was mandatory for the class dates of the interviews.

This study tested the two stages of the case in an introductory auditing class in a public university's business school. The course is a requirement for all students majoring in accounting or pursuing an accounting minor. Forty-five students enrolled in two introductory auditing course sections at a public university in the US participated in the study.

A 1,000-point total grade consists of 175 points both for Exam 1 and 2. The case assignment is worth 30 points. The first exam tests the audit process and concepts of professional skepticism. Exam two is more application-oriented, testing the same concepts. Exam 2 includes questions from the case. Exam 1 consists of multiple choice and short essay questions. Exam 2 is more problem-based with short answers, fill-in-the-blank, and essay questions. A correct answer is determinable for each question. Both sections receive the same exam questions scrambled.

## **Methodology**

This study uses the independent samples t-test to measure the differences between samples, exams, and case grade distributions. An independent samples t-test compares the variables (exams and case grade) between the two semesters, fall and spring 2020. The one-tailed test appropriately measures whether one sample's grade distribution has more students with higher grades on exams and higher case grades than another sample's distribution.

The survey asked students about their understanding of risk factors from fraud, comparing multiple sources, and interviewing clients. The survey asked about those same topics as a result of classroom activities. We administered the survey before any work on the case (pre) and immediately after students submitted their case assignment (post).

## **Results**

The authors tested the case as a supplemental learning aid in the introductory audit course with 12 students in the Fall 2020 semester and 33 students in the Spring 2020 semester. Table 1 shows the mean responses for several questions intended to provide different measures of the student's understanding of risk factors and fraud, client interviews, and comparing sources for consistency. Students responded to each item on a five-point scale from 1 (strongly disagree) to 5 (strongly agree). Forty-five students responded to the pre-survey before administering the case, and 21 students responded to the post-survey after administering the case.

The results support the hypothesis that students improved their understanding in identifying risk factors for material fraud with the post-survey mean at 4.08 and the mean of pre-survey at 3.65. Additionally, the post-survey results suggest that students' understanding of identifying risk factors from fraud improved with the case's administration (post 4.16, pre 3.59). Students felt more confident participating in fraud brainstorming as part of audit planning post case (post 4.16 vs. pre 3.59) and interviewing client personnel (post 3.84 vs. 3.27).

**Table 1**  
***Comparative Pre and Post Survey***

|   | Mean and Standard Deviation |             |                          |             |
|---|-----------------------------|-------------|--------------------------|-------------|
|   | Pre                         |             | Post                     |             |
| Item  | Mean<br>App<br>(n=45)       | Std.<br>Dev | Mean<br>No-App<br>(n=21) | Std.<br>Dev |
| <b>I understand how to:</b>   |                             |             |                          |             |
| identify risk factors for material fraud.   | 3.65                        | .716        | 4.08                     | .493        |
| identify risk factors from fraud.   | 3.59                        | .804        | 4.16                     | .554        |
| participate in fraud brainstorming as part of the audit planning.                           | 3.59                        | .853        | 4.16                     | .554        |
| interview client personnel regarding fraud and financial misstatement risks.                | 3.27                        | .918        | 3.84                     | .746        |
| compare multiple sources of information to find consistency.                                | 3.78                        | .702        | 4.12                     | .526        |
| identify risk factors that will affect the remainder of the audit.                          | 3.76                        | .681        | 4.24                     | .436        |
| identify how and when it is necessary to bring in fraud specialists.                        | 3.61                        | .802        | 3.92                     | .702        |
| <b>As a result of the classroom lectures, activities, and homework from prior chapters,</b> |                             |             |                          |             |
| I feel I have a strong foundation for understanding risk factors.                           | 3.90                        | .608        | 4.08                     | .640        |
| I feel that I can use that information to develop my own audit test.                        | 3.45                        | .808        | 3.84                     | .688        |
| I feel that I can work well with a team to brainstorm and evaluate ideas.                   | 4.20                        | .566        | 4.28                     | .542        |
| I feel that I am better prepared to participate in complex problem-solving activities.      | 3.84                        | .644        | 4.24                     | .523        |
| I feel that I am learning the course materials better than I would in a different format.   | 3.73                        | .802        | 4.16                     | .800        |

The results suggest that utilization of the case and classroom activities, including lectures and homework, improved students' brainstorming and evaluation of ideas (post 4.28 vs. pre 4.20). Students felt better prepared to participate in complex problem-solving activities (post 4.24 vs. pre 3.84). Students also felt they learned the course materials better than in a different

format (post 4.16 vs. pre 3.73). Students' understanding of risk factors improved after the case (post 4.08 vs. pre 3.90). Students also were more confident in using the information to develop audit tests with a post case mean of 3.84 and a pre case mean of 3.45.

The independent sample t-test reveals significant improvement in Exam 2 and the Interview Case grades. Students in the Spring 2020 class perform better in Exam 2 and the interview case than in the Fall 2020 semester. Students only performed higher on exam two and the case for the Spring term. Student's test scores were greater for a student who used the case only in the Spring term. In the Fall term, the students scored better on the first exam than in the second exam.

**Table 2**  
***Results of t-tests and Descriptive Statistics Exam 1, Exam 2, and Interview Case Grade***

| Outcome        | Group  |       |    |       |       |    | Significance |       |    |
|----------------|--------|-------|----|-------|-------|----|--------------|-------|----|
|                | Spring |       |    | Fall  |       |    |              |       |    |
|                | M      | SD    | n  | M     | SD    | n  | F-Value      | Level | df |
| Exam 1         | 60.36  | 23.21 | 12 | 72.00 | 15.35 | 33 | 1.634        | .208  | 43 |
| Exam 2         | 87.39  | 17.43 | 12 | 65.67 | 24.16 | 33 | 4.622        | .037* | 43 |
| Interview Case | 90.51  | 24.23 | 12 | 65.28 | 48.44 | 33 | 21.576       | .000* | 43 |

\* indicates  $p < .05$ .

t(df) is t(degrees of freedom).

t(df)=43,  $p=0.115$

t(df)=43,  $p=0.002$

t(df)=43,  $p=0.025$

## Conclusion

Professional skepticism is a critical component of the auditor's skill set; a vital tool for financial statement auditing, compliance and control testing, forensic accounting, and fraud investigation. Professional skepticism is a focus of professional standards for auditors and forensic specialists. However, this skill requires practice and exposure to develop properly. Previous papers have discussed the value of a forensic accounting course for fraud training for all accounting students. Previously developed cases provide real-world scenarios to allow students to develop this skill in a more realistic setting. This case takes a different approach by focusing on students in their first undergraduate auditing course as they learn about professional standards, evidence, testing, and risk assessment. It sets up a situation where students, even in teams, are unlikely to succeed on the first try. Students must individually work out how to approach audit interviews and evidence gathering while providing nearly immediate feedback on the attempt.

The value of this case is fourfold. First, it provides a realistic setting: a growing small business that is yet to reach the size to incorporate many ideal internal controls. This activity allows students to take the textbook concepts into a less "clean" environment. Second, it includes

interview practice with minimal setup by the instructor. Because the initial interviews are intentionally short, one instructor can serve as the interviewee for everyone. A smaller case provides a practical alternative to larger fraud cases that require the instructor to recruit volunteers. Third, while it addresses the heightened risk of fraud, the primary focus is on general risk assessments. Students often see fraud everywhere when first exposed to it. This case pushes students to gather information to distinguish between a potential fraud and a poor control environment, allowing them to recognize fraud signs better. Finally, this case helps students learn how to direct their training, analyzing what is successful. As all accounting professionals need to develop a habit of lifetime learning, empowering students to initiate learning is essential.

### References

- Albrecht, W. S., & Sack, R. J. (2000). Accounting education: Charting the course through a perilous future. Institute of Management Accountants. <https://www.imanet.org/-/media/bb96d6c56cef4433a72e37f6f49e7e9c.ashx>
- Asare, S. K., Wright, A., & Zimbelman, M. F. (2015). Challenges facing auditors in detecting financial statement fraud: Insights from fraud investigations. *Journal of Forensic & Investigative Accounting*, 7(2), 63-112. [http://web.nacva.com/JFIA/Issues/JFIA-2015-2\\_4.pdf](http://web.nacva.com/JFIA/Issues/JFIA-2015-2_4.pdf)
- Berecz, D., Metrejean, E., & Thompson, D. (2017). Conducting interviews: An auditor's guide to getting to the truth. *Journal of Forensic & Investigative Accounting*, 9(3), 929-935. <https://s3.amazonaws.com/web.nacva.com/JFIA/Issues/JFIA-2017-No3-6.pdf>
- Carpenter, T., Durtschi, C., & Gaynor, L. (2011). The incremental benefits of a forensic accounting course on skepticism and fraud-related judgments. *Issues in Accounting Education*, 26(1), 1-21. <https://doi.org/10.2308/iace.2011.26.1.1>
- Dee, C. C., & Durtschi, C. (2010). Return of the Tallahassee BeanCounters: A case in forensic accounting. *Issues in Accounting Education*, 25(2), 279-321. <https://doi.org/10.2308/iace.2010.25.2.279>
- Durtschi, C. (2003). The Tallahassee Bean Counters: A problem - based learning case in forensic auditing. *Issues in Accounting Education*, 18(2), 137-173. <https://doi.org/10.2308/iace.2003.18.2.137>
- Giambatista, R. C., Hoover, J. D., & Tribble, L. (2017). Millennials, learning, and development: Managing complexity avoidance and narcissism. *The Psychologist-Manager Journal*, 20(3), 176-193. <https://doi.org/10.1037/mgr0000056>
- International Auditing and Assurance Standards Board (IAASB). (2013). ISA 240, The Auditor's Responsibilities Relating to Fraud in an Audit of Financial Statements. In *Handbook of international quality control, auditing, review, other assurance, and related services pronouncements: Part I*. New York, NY: International Federation of Accountants.
- Matson, D. M., Sharockman, K. M., & Raffield, J. M. (2015). The fraud at High Flying Corporation: Developing audit interview skills. *Journal of Forensic & Investigative Accounting*, 7(2), 263-306. [https://s3.amazonaws.com/web.nacva.com/JFIA/Issues/JFIA-2015-2\\_9.pdf](https://s3.amazonaws.com/web.nacva.com/JFIA/Issues/JFIA-2015-2_9.pdf)
- Melancon, B. C. (2002). A new accounting culture. *Journal of Accountancy*, 194(4), 27-30. <https://www.journalofaccountancy.com/issues/2002/oct/anewaccountingculture.html>
- Public Company Accounting Oversight Board (PCAOB). (2015a). *AS 1015: Due professional care in the performance of work*. <https://pcaobus.org/Standards/Auditing/Pages/AS1015.aspx>

- Public Company Accounting Oversight Board (PCAOB). (2015b). *AS 2401: Consideration of fraud in a financial statement audit*. <https://pcaobus.org/Standards/Auditing/Pages/AS2401.aspx>
- Seda, M., & Peterson Kramer, B. K. (2014). An examination of the availability and composition of forensic accounting education in the United States and other countries. *Journal of Forensic & Investigative Accounting*, 6(1), 1-46. [https://s3.amazonaws.com/web.nacva.com/JFIA/Issues/JFIA-2014-1\\_1.pdf](https://s3.amazonaws.com/web.nacva.com/JFIA/Issues/JFIA-2014-1_1.pdf)
- Vrij, A., Granhag, P. A., & Porter, S. (2010). Pitfalls and opportunities in nonverbal and verbal lie detection. *Psychological Science in the Public Interest*, 11(3), 89-121. <https://doi.org/10.1177/1529100610390861>
- Walsh, D., & Bull, R. (2010). What really is effective in interviews with suspects? A study comparing interviewing skills against interviewing outcomes. *Legal & Criminological Psychology*, 15(2), 305-321. <https://doi.org/10.1348/135532509X463356>

#### Authors' Note

The authors wish to thank Christine Cheng and Jim Izzo for their support.

Appendix A  
Deanna's Delights: An Interview Exercise in Risk Assessment

In the spring of 2010, Deanna Long graduated from culinary school and considered her future. She had an offer to be a junior pastry chef at a large hotel, but it just sounded so dull. After talking with friends and family, Deanna decided to start her own business called Deanna's Delights (DDI). She teaches baking classes to small groups, grade schools, and private customers at their locations. Her business was an immediate success, and within six months, Deanna had expanded to a bakery with fresh-baked goods for sale, a regular schedule of baking classes, and baking equipment sales.

Now, DDI has grown even more prominent. It has four full-service locations, online sales, class schedules, and baking class contracts with several retirement communities and other organizations. DDI owns the building next to the original store, which serves as both headquarters and main warehouse. To achieve this growth, Deanna brought in three additional investors and borrowed from her local bank. Even though DDI is privately held, the bank and investors would like an audit to ensure reliable financial reporting.

Braun, Ellis, Garibaldi (BEG) is a regional accounting firm with eight offices in the tri-state area. It performs audit and tax services for local businesses and consults on a variety of business solutions. Most of BEG's clients are privately held. Many have multiple locations throughout the area. BEG services industries ranging from service and technology to light manufacturing to hospitality and entertainment. As a result of BEG's commitment to providing high-quality service, all BEG staff are well trained and focus on one industry or service after their second year at the firm.

It is BEG's first year auditing DDI and the partner in charge is Nate Braun. The audit manager is Carolyn Montgomery. She assigned you to work on this with Casey Peters, the audit senior. Casey has just begun specializing in the restaurant and hospitality area and is eager to work with DDI. To help begin the process, Casey has summarized information about DDI in the memos below. Note that since this is a new client for BEG, there is still much information to gather.

**Assignment**

You are part of an audit team. You need to review with your team the memos Casey has prepared to identify potential risk areas (either risk of material misstatement or fraud risk). You will then develop a strategy to interview the seven DDI headquarters staff during the next class period. Each member of your team will be allowed to ask questions to one DDI employee for 2 minutes. Plan some questions that you will ask the various personnel. The interview schedule will be provided in class. When finished with the interviews, answer each of the following questions to the best of your ability.

1. For each functional area, what are the key risk factors of a material misstatement? Do you think a material misstatement is likely to occur?
2. In one functional area, there is evidence of potential fraud. Which area and what is the evidence? How would you adapt the audit to determine if fraud did take place?

For each of the remaining functional areas, how would you rate the risk of fraud? High, Moderate, or Low. What support do you have for this conclusion?

## Ownership

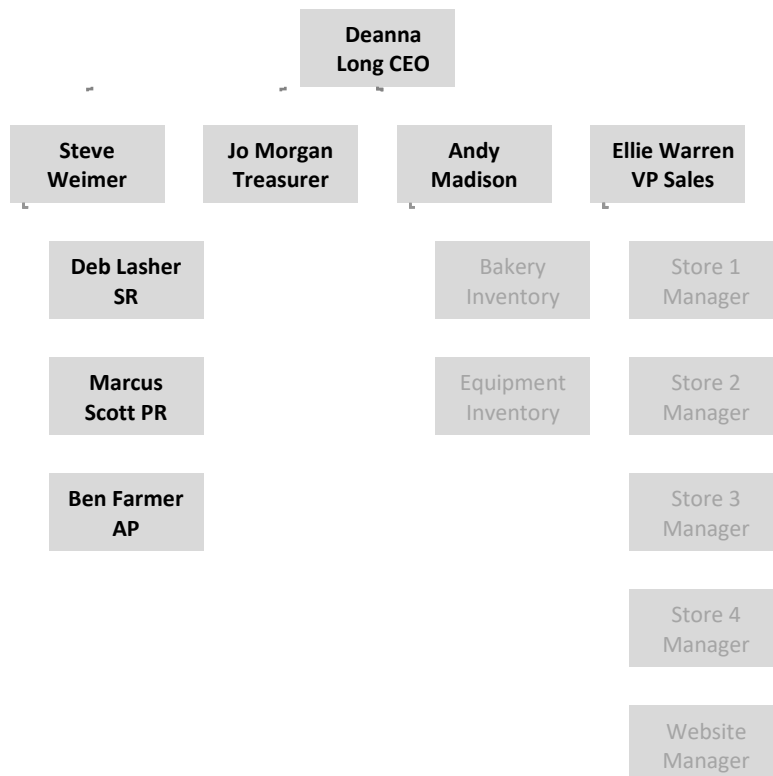
DDI is a privately held Pennsylvania corporation. There are four shareholders: Deanna Long (51%), Ron Hartman (23%), Kim Lee (17%), and Pat Allen (9%). Long is the only one of the owners involved with day-to-day activities. The Board of Directors consists of Long, Hartman, Lee, and a local lawyer. The terms require an annual audit of DDI's new financing.

## Organization

DDI has centralized accounting and warehouse processes located at the corporate headquarters. Additionally, there are five revenue centers: four full-service stores and one online store. Annual sales have recently exceeded \$1,000,000 for the first time. There is a total of 62 employees including full- and part-time staff. While there has always been a degree of turnover in the part-time staff, the full-time staff has been relatively stable. Figure 3 shows the organization chart for headquarters.

**Figure 3**

***Deanna's Delights, Inc. Corporate Headquarters Organization Chart***



## **Headquarters Employees**

Most of the staff located in the headquarters building have been with DDI for at least two years. All the executives and accounting staff have been with the firm for at least three years. These include the following:

1. **Steve Weimer, CPA, Controller.** He manages the general ledger, reconciles the bank accounts, and supervises the accountants. Mr. Weimer earned his bachelor's degree in accounting and information systems from a local university. He has been with DDI for seven years.
2. **Deb Lasher, Senior Accountant.** Ms. Lasher is responsible for all Accounts Receivable processing. She maintains the records of baking class contracts paid monthly, accounts for large equipment customers, and records the store revenues. She has been with DDI for four years and has an associate degree in accounting.
3. **Marcus Scott, Payroll Accountant.** Mr. Scott has been with DDI for three years. He is responsible for all the payroll accounting for all the stores and headquarters. He does not have a degree but has spent 15 years in accounting and administrative positions.
4. **Ben Farmer, Accounts Payable Accountant.** Mr. Farmer has been with DDI for five years, starting in one of the stores and moving up to headquarters two years ago. He is responsible for processing all Accounts Payable transactions. Mr. Farmer maintains the vendor accounts and pays all bills by the discount date if possible. He has just completed his bachelor's degree in accounting from a nearby college.
5. **Jo Morgan, Treasurer.** Ms. Morgan is another long-term employee. She joined DDI over seven years ago. At that time, Ms. Morgan and Mr. Weimer handled all the accounting and cash management themselves. Ms. Morgan was promoted to her current position two years ago. She manages all the cash accounts, investment accounts, and debt payments. Ms. Morgan has a bachelor's degree in finance and minored in accounting.
6. **Andy Madison, Vice President of Inventory.** Mr. Madison supervises all inventory for the stores and the website sales, including the equipment inventory sold in the stores and online. He monitors the baking inventory for spoilage at each store. Mr. Madison has managed supplies for restaurants and hotels for over 20 years and has been with DDI for four years.
7. **Ellie Warren, Vice President of Sales.** Ms. Warren joined the company four years ago as DDI began to expand its locations and web presence. Previously, she spent many years managing a chain of coffee shops. Ms. Warren is responsible for hiring and managing the store managers and website manager. She created a store bonus program for the managers, sets the store revenue and profit targets, and is responsible for the baking contracts.

## **Policy and Procedure Documentation Review**

Ms. Long insisted on producing written job descriptions and responsibilities for all employees on the organization chart (Figure 3), regardless of their work location. She provided a



copy of these to BEG staff. Relevant information gleaned from this documentation is summarized below.

### **Accounts Receivable (AR)**

Ms. Lasher manages all the AR accounting. She receives new baking class contracts from Ms. Warren, prepares a schedule of earned revenue based upon the contracts, and sends out monthly invoices for the contracted amounts. She also receives payments from the contracts (including deposits paid in advance) and prepares deposit slips once weekly, usually on Thursday or Friday. Mr. Weimer receives her deposit documentation and drops the deposit at the local bank.

In addition to the baking class contracts, DDI has a modest amount of AR from equipment purchases. AR may approve several repeat customers (often small restaurants, hotels, or civic groups) to purchase baking equipment on account with 30-day payment terms. Ms. Long approved these customer purchases of items at one of the stores or online. Ms. Lasher records the purchases. Each Monday, she prepares invoices based on the information. As with the baking contracts, Ms. Lasher records the AR, follows up for payment, receives payments from customers, and includes these with the weekly deposit.

Finally, Ms. Lasher receives a summary report daily from each store and the website manager of all sales by type. She reconciles the totals with the store cash receipts and records the revenue in the accounting records. She then provides a summary for Mr. Weimer to match to the bank reconciliation. Each month, Ms. Lasher prepares a schedule of outstanding AR accounts and forwards it to Mr. Weimer for review. On the rare occasion when an outstanding account is deemed uncollectible, Mr. Weimer notes the schedule, and Ms. Lasher performs the actual write-off of the account.

### **Payroll**

Mr. Scott is responsible for all payroll at DDI, including the stores, warehouse, website staff, and headquarters. All headquarters staff is on salary, as are the inventory and store managers. At each store, the staffing is similar: one store manager, one assistant manager, one head baker, two part-time assistant bakers, three part-time sales staff, and two part-time baking instructors that can help the sales staff when not teaching. Two part-time “floating employees” help in any store or the warehouse when many equipment sales need shipments. The warehouse has two inventory managers, each responsible for three part-time inventory staff. Finally, the website staff includes the salaried website manager, one video content manager, and two part-time assistants.

Mr. Scott processes three types of payroll transactions. He prepares payroll for the 1<sup>st</sup> and 15<sup>th</sup> of every month for the salaried employees in the same amount. Salaried employee payroll is prepared using a standard schedule two business days before, and the employees’ direct deposits are available at midnight on payday. For the hourly employees, both full-time and part-time, he receives the appropriate manager hours each Monday. Ms. Warren schedules the two floaters, but Mr. Scott tracks the hours for them, as they do not have just one manager during the week. Payroll processing occurs on Wednesday, and employees receive their pay each Friday. Finally, if sales have reached a pre-determined target, a bonus is paid to Ms. Warren, the website manager, and the store managers each quarter. The bonuses amount to 1.25% of the employee’s

annual salary. To prepare these, Mr. Weimer provides Mr. Scott with a schedule of the target and actual sales. Mr. Scott then runs a separate payroll for the bonuses, if applicable.

All payroll processing is via direct deposit, there are no checks to sign. Instead, Mr. Scott prepares a payroll summary register of all employees and their pay for Mr. Weimer. Mr. Weimer then uses this information when preparing the bank reconciliation. Finally, the payroll clerk summarizes all payroll taxes and other withholdings in a schedule and forwards to Ben Farmer for payment.

### **Accounts Payable (AP)**

Mr. Farmer is responsible for processing and recording all AP transactions. Mr. Madison, submits invoices for all inventory items, along with receiving reports confirming the proper delivery. The store manager or headquarters staff submit invoices for other purchases, including office supplies, marketing materials, and vehicle expenses. Ms. Long or Mr. Weimer approves in advance all vendors. It is DDI policy to make every effort to pay invoices within any discount period offered.

Several recurring payments do not involve irregular invoices. Payments are due monthly for the rent on three stores, the mortgage on the remaining store and headquarters building, other outstanding loans, building, vehicle insurance, janitorial services for the stores and headquarters, long-term advertising services, taxes, and utilities. Mr. Farmer keeps a schedule of all payments due to ensure timely payments.

Each week, Mr. Farmer reviews the list of payments due to all vendors for the next four weeks. He identifies the invoices for payment in the current week and forwards the list to Mr. Weimer to approve payments. On Thursdays, Mr. Farmer prepares the payments to go out, primarily by electronic bill-pay. He issues the payments that afternoon. He forwards the payment register to Mr. Weimer for use in the bank reconciliations.

### **Cash Management**

Ms. Morgan manages all cash accounts, investment accounts, and loan contracts. She ensures that DDI can pay its bills on time. Ms Morgan applies any excess cash to reduce outstanding debt or invested to earn investment income. Each Monday, she meets with Mr. Weimer to determine the expected cash needs for the week. Each day, the stores deposit their cash receipts in a local branch of the company's bank. All other deposits are made toward the end of the week, as described above. All payments from payroll and AP are toward the end of the week as well. Mr. Weimer uses reports from Ms. Warren in Sales to anticipate the store cash receipts and any payroll variations. He uses the reports from Mr. Farmer to anticipate cash payments for the week.

At this point, Ms. Morgan understands the cash needs for the week. If there is likely to be a shortfall for the week, she arranges to use cash from investments or a line of credit DDI has with its bank. If anticipating an excess of cash, Ms. Morgan determines whether to pay down the line or invest the funds in DDI's stock and bond investment portfolio. She records all her cash management transactions by the end of the week, Ms. Morgan provides Mr. Weimer with a report of the current outstanding balance on the line of credit and other loans and the current balance of the investment portfolio. She reconciles the investment portfolio accounts and the line of credit account to the statements each month. Once per quarter, Ms. Morgan meets with Ms.

Long and other senior staff to evaluate DDI's performance and create projections for the coming quarter. She provides all the cash management reporting for these meetings.

## **Inventory**

DDI has inventory in five different physical locations: all four full-service stores and the warehouse at headquarters. There are two distinct types of inventory with a separate manager for each type. Mr. Madison ensures that all locations have inventory as needed with minimal waste and minimum necessary storage. Both the bakeries and the baking classes require grocery items on hand. Mr. Madison purchases groceries either from a local grocery chain that DDI has contracted with or a specialty baking company that ships goods out for overnight delivery. The grocery chain offers DDI a reduced price based on quantities ordered. These are generally fresh items, such as eggs and fruit, supplied three times per week to the stores. No food items remain at the warehouse. The Bakery Inventory Manager tracks and alters deliveries based upon store inventory levels. He receives an electronic copy of all orders and matches those to receiving documents. He then forwards the information to Mr. Madison.

Specialty baking goods are purchased in larger quantities and stored at the warehouse until an inventory staff person delivers them to the stores. These are typically items with a longer shelf-life. The Bakery Inventory Manager orders these items individually based on current stock in the warehouse. As with the grocery items, all orders are matched against receiving reports and forwarded to Mr. Madison.

Stores handle equipment inventory slightly differently. A bakery instructor can requisition equipment for use in the store for use in the classes or sold to customers in stores and online. As a result, each store prepares a physical inventory count each week, tracking all changes to receiving reports, requisitions, or sales slips. These are forwarded to the Equipment Inventory Manager to compare to his records and ensure no discrepancies. He then prepares a Monday report to track all inventory changes at the warehouse, including inventory received, shipped to the stores, or shipped to online customers. Mr. Madison receives copies of this report with supporting documents.

Mr. Madison oversees all inventory activity. He takes the baking and equipment inventory reporting, performs periodic test counts in the warehouse to ensure the numbers match the reports, prepares activity analysis to identify trends in inventory needs, and reviews the vendor information to ensure prices match agreed-upon prices. He also periodically evaluates new vendors and supervises any purchase returns necessary. Mr. Madison visits each location monthly to ensure that the inventory areas are clean and organized and verify that the inventory processes are complete. He participates in quarterly meetings with Ms. Long to report on positive or negative inventory trends.

## **Sales**

Ms. Warren manages the sales both online and at all the stores. These include the bakeries, the classes, and the equipment sales. For the bakeries, she receives sales summaries from the stores and compares them to target sales numbers. Any significant discrepancies (positive or negative) result in follow-up calls to the store manager. Ms. Warren combines the sales summaries from all the stores to prepare reports on sales unit trends and recommend inventory or pricing changes. Ms. Long approves all such changes. For the classes, Ms. Warren

receives a bonus on any new baking contract signed. She also sets target class revenue numbers and compares the store's performance to target every month. If a store falls behind, she will meet with the store manager to determine the best improvement options. Specific improvements might target local organizations for baking contracts or change the store's offerings and hours of operation. Again, any significant changes require approval from Ms. Long.

For the equipment sales, Ms. Warren sets target sales for the stores and the website. She reviews the sales figures to compare to the sales targets. As with the other revenue streams, the manager follows up on any discrepancies. Additionally, she prepares trend reports on the inventory to determine additional items to include and unpopular items to eliminate. She is also responsible for comparing prices to DDI's competitors and is authorized to offer pricing concessions (lowered prices) to match the competition.

Ms. Warren provides Ms. Lasher with all information regarding new baking class contracts. She meets weekly with Mr. Madison to evaluate inventory turnover and strategies. Finally, Ms. Warren prepares the reports for Mr. Weimer on store receipts and anticipated sales that he uses to help manage cash. She also participates in the quarterly meetings, providing sales assessments for the past quarter and targets for the upcoming quarter.

### **General Ledger**

Mr. Weimer manages the general ledger and reconciliations. He makes weekly bank deposits and tracks cash inflows based upon Ms. Lasher's documentation. Mr. Weimer keeps the deposit information until month-end when he reconciles the bank accounts. At that time, he meets with Ms. Lasher regarding outstanding AR. Mr. Weimer takes the report she prepares and discusses the status of the AR accounts. If he feels it is necessary to write off a customer, he notes it, signs, and returns the report to Ms. Lasher for processing.

He also oversees the weekly cash payment for payroll and AP. Mr. Scott provides the weekly and semi-monthly payroll summary registers, and Mr. Weimer matches these figures to the bank reconciliation. He also takes the sales reports from Ms. Morgan and provides the sales targets' schedule to Mr. Scott for bonuses. For AP, Mr. Weimer reviews the outstanding payables list from Mr. Farmer, compares the amounts to the cash projections, and approves select accounts for payment. Once Mr. Farmer makes the payments, Mr. Weimer takes the payment register, stores it with the payroll register and sales deposit information until he reconciles the bank accounts.

Every Monday morning, Mr. Weimer prepares a cash flow report using deposit and payment information. He then meets with Ms. Morgan Monday afternoon to discuss cash needs, leaving her to manage the actual cash balances. About one week before the quarterly meetings, he begins gathering data on cash flows and trends, analyzing variances, and preparing recommendations for Ms. Long.

### **Information from Meeting with Deanna Long**

BEG staff met with Deanna Long on October 1, 2018, for an initial interview. At this time, Ms. Long reported that the company's growth had exceeded all her expectations. She spends time focusing on the mix of bakery items and classes to keep the customer options unique, and Ms. Long feels that her focus here has helped the company grow so successfully.

She acknowledged that the growth had been a challenge to manage and that the headquarters staff has been hectic.

Two years ago, after the DDI headquarters staff had grown to the current number, Ms. Long initiated a reorganization of the current structure. With the help of Mr. Weimer, she decided that it would be better to have one person responsible for each function within the accounting and finance areas to allow for faster processing of the ever-increasing accounting tasks. At that point, DDI switched to QuickBooks Pro™ to manage all the accounting and executive processes. Each headquarters employee has permission to prevent unauthorized access. Mr. Weimer has administrative access to all functional areas as the Controller.

She notes that budgets have been challenging to prepare timely, and often total budget variances are not evaluated until months later. She is very proud of the \$1,000,000 sales mark but notes that she hoped it would come with greater cash flows. When pressed about this concern, Ms. Long admitted that cash flows do not seem to be keeping up with the budget. Sales volume has remained reasonably consistently split between the bakeries, classes, and inventory sales.

However, the stores are not a profitable as she had hoped. Gross profit had been steady over several years but now seems to be a bit lower. She noted that the costs, especially of the bakeries, have risen, but sales have not kept pace. She has discussed this with Mr. Madison, who informed her that inventory costs for the bakeries keep increasing. Mr. Madison researched alternative vendors for better prices unsuccessfully. She discussed the increase in payroll costs over the past two years. They have risen 10% faster than sales in the same period. Mr. Weimer performed an analysis and determined that wage rates have increased 2% and that increases in part-time hours account for the rest. Ms. Warren is concerned about this because she talked with the store managers and agreed to be very careful with the part-time hours. Cash receipts from classes are down about 1% from two years ago. Ms. Warren cannot explain this as she has been working diligently to increase baking class contracts. She feels it may be the result of fewer non-contract baking students. Ms. Lasher noted that she has not seen any significant changes in store cash receipts and cannot explain the drop.

The website traffic has increased dramatically over the past four years. Online sales now account for 15% of total revenue. However, as with the stores, the profit has not met expectations. Gross profit has been trending slightly downward. Mr. Madison noted that online sales are primarily equipment orders, and he has not found cheaper alternatives to the current vendors. Also, website equipment sales are frequently credit purchases. Ms. Lasher notes that she often sees more returns from website purchases than stores, but Mr. Madison has not noted a significant variation.

Finally, the company overhead has been increasing faster than sales. Mr. Weimer reports that he has seen an increase in vehicle costs and supplies expenses over the past two years. Both are up about 3% more than sales. In discussing this with Mr. Farmer, he had not noted any specific issue, suggesting it may just be inefficiencies of growth.

Appendix B  
Deanna's Delights: An Interview Exercise in Risk Assessment

**Follow-up Information**

Since you conducted your DDI employee interviews, the auditors of Casey Peters performed additional procedures. He met with the headquarters staff to gauge their sense of risk and assess the business's operations. He has summarized his interviews with the headquarters staff in the following memo. He organized these by the person, not function, as there may be some overlap of topics.

**Assignment**

You have been assigned to an audit team, read the preliminary information, and conducted brief interviews with the headquarters staff. Review the additional memo Casey has prepared with your team to identify potential risk areas (either risk of material misstatement or fraud risk). Combined with the information you already have, this information will fill in some gaps in understanding or raise some additional questions. Consider how well this information confirms or conflicts with what you already have.

Your next task will be to select one member of the headquarters staff for an extended follow-up interview. This may be a person whose functional area you are most concerned about, or it may be a person you feel can provide the information you seek. You will then develop a strategy to interview that person during the assigned period. Each member of your team will take part in the interview, which will last 10 minutes. Plan questions in advance that you will ask and consider how to effectively use all your team members. When finished with the interview, prepare a risk assessment memo for DDI. Be sure to include:

1. What are some overall company risk factors that need to be addressed during the audit? What impact could they have on the financial statement reporting of DDI?
2. What are the function-specific risk factors for both material misstatement and fraud that you identified? How can they be addressed during the audit, being as specific as possible?
3. Which employee did you choose for the follow-up interview and why? Did you get the information you were expecting from this individual? Did it change your conclusions about any specific functional area for better or worse?
4. At least one area has very strong risk factors for fraud. Which area is it, and what evidence have you found? How should the audit address this risk?

**Headquarter Staff Interviews**

***Steve Weimer***

Mr. Weimer is usually the first to arrive at work each day and the last to leave. He notes that the rapid growth may be putting too much of a strain on the headquarters staff. Mr. Weimer finds himself spending more time analyzing revenues and expenses to explain the budgeting problems. He laments that the other accounting staff does not seem able to perform such analysis. For example, he would like Ms. Lasher to follow up more when cash receipts do not

meet targets. Instead, she just notes the differences and says the stores should be better able to explain them.

In another example, he describes talking to Mr. Scott about the payroll increases. Mr. Scott has performed some analysis but cannot explain why the hours increase more than store sales. Mr. Weimer even called a couple of store managers to learn the reason for the increased hours. However, they had no idea the hours were increasing and stated they had not been scheduling much more. Mr. Scott's response to this was that maybe the store managers do not include the floater hours.

### ***Deb Lasher***

Ms. Lasher is not happy with the current stress levels in the office. She feels that Mr. Weimer is putting unnecessary pressure on her to figure out the cash flow problems. Ms. Lasher mentions that he has now started keeping a copy of every daily, weekly, and monthly report she prepares and will spend hours reviewing them for discrepancies. Ms. Lasher explains that she is diligent in recording the revenues, tracking all the contracts and receivables, and ensuring everything balances.

She concedes that Mr. Weimer has not complained about her work, even telling her that her numbers always make sense. Even though she acknowledges that Mr. Weimer is doing this with everyone's reporting, she is still very concerned about her job. Ms. Lasher misses the old days when everyone could relax and tease each other. She relates a story of Mr. Scott's son, Jimmy, a recent high-school graduate who works as one of the floaters. She and Ms. Morgan were teasing him about how much more work Jimmy seems to do than Mr. Scott, as he is never at headquarters.

### ***Marcus Scott***

Mr. Scott is delighted to be working at DDI. His previous company went out of business, and he was concerned that he would never find another accounting job since he does not have a degree in accounting. He is also happy that he was able to get his son a job at DDI as well. Jimmy started college this fall, and Mr. Scott has been apprehensive about paying for it. He wants Jimmy to earn a degree in a practical field like accounting, so that he is not concerned about his job prospects. At the same time, Mr. Scott understands the stress the company is experiencing. He has been trying to provide information to Mr. Weimer about the payroll, but it never seems to be enough. With all the people involved in scheduling the part-time staff, he feels it is unfair to expect him to solve any problems.

### ***Ben Farmer***

Mr. Farmer is very eager to work his way up in the DDI organization. He has many ideas to improve the efficiency of the business to help increase profits and feels that others are just going through the motions. For example, he noticed that a fair amount of inventory costs are related to rising shipping rates. The grocery store charges a separate delivery fee to each store for each delivery, regardless of the size. Mr. Farmer thinks it would be more cost-efficient to use the warehouse staff and company vehicles to pick up the groceries and deliver them to the stores. He thinks this may work well for office supplies and other items as well. He suggested to Mr. Scott

that they put together a proposal (since Mr. Scott has the staff costs), but he was not interested in helping, saying it is not for staffers to analyze payroll costs.

### ***Jo Morgan***

Ms. Morgan is in constant motion. She agreed to the interview on the condition that you talk while she is walking around. This day, Ms. Morgan is tracking down expenses. While officially, her job is to manage the cash accounts, she explains that most of her time lately has been spent helping Mr. Weimer figure out the budgeting problems. With DDI growing, she has significantly reduced the overall debt balances over the past three to four years. That has helped the bottom line as interest costs have dropped.

However, the reduced profitability of the company frustrates Ms. Morgan. Even with the increase in inventory costs and slightly lower-class revenue, she still feels that at least an extra \$25,000 should be on hand. To help address this, she has modified the investment approach, moving a bit more into the stock market than the relative safety of bonds. While the bonds provided regular cash flows with less risk, the stock market has allowed her to profit through careful buying and selling. Mr. Weimer has been cautiously pleased with the results.

### ***Andy Madison***

Mr. Madison is proud that he runs a tight ship in the warehouse. He personally hired the two inventory managers that work for him, recruiting them away from other companies. Mr. Madison likes the idea of leaving the day-to-day worries to them so he can focus on the big picture issues. Like Mr. Weimer, he is concerned about the costs. Mr. Madison has been talking to various vendors, seeking alternatives that can help keep costs down. He believes that there is room to keep more equipment and bulk bakery goods in inventory, but he is not sure that will help with the costs. He has begun making more visits to the stores to ensure they are not wasteful, checking all of their paperwork and making surprise inventory counts. So far, there has been little problem with the stores. He likes the office staff, especially Mr. Farmer, and thinks that they work well together. He appreciates all the work that Ms. Warren is doing to boost sales and thinks she runs the stores well.

### ***Ellie Warren***

Ms. Warren shares the frustration of Mr. Weimer regarding the cash flows. She knows her store managers well and does not doubt that they are working hard to cut any inefficiencies. Ms. Warren is diligently developing a network of corporate and civic groups that have signed baking class contracts and shared their satisfaction with others. She regularly talks with Ms. Lasher to make sure that DDI is meeting contract obligations. Although the store cash inflows are not dramatically lower, she has decided to investigate a different advertising agency to get fresh ideas to boost the baking classes and overall store sales.



Appendix C  
Deanna's Delights: An Interview Exercise in Risk Assessment

**Suggested Solutions Guide**

The questions asked of the students are open-ended by design. Textbooks do not often describe this type of company, yet regional and mid-sized accounting firms often encounter it. The fictional company, Deanna's Delight, Inc., is not large enough to afford many ideal internal controls. The stores have a cash business component, the headquarters has a lean staff, there is no internal audit function, and the owners do not actively manage the accounting and operations. Lehmann (2015) noted that students could better develop critical thinking skills in just such a scenario, where the simple answers do not fit. The fact that this case suggests one potential fraud allows the students to enhance their professional skepticism and temper their rush to assume all irregularities must be the result of fraud.

**Stage 1 Assignment**

Note that in this stage of their education, it is improbable that students will have identified all the risk factors or the functional area with the highest fraud risk. This stage is intentionally structured to make it almost impossible to solve. The purpose is to focus students on evaluating what information they have and what additional information they might need. The limited internal controls may seem overwhelming to some students as many areas pose significant risks. Note that the questions at this stage do not ask for revised audit plans. They ask students to articulate their concerns and the basis for those concerns. Inexperienced students complete this exercise with incomplete information, so the suggested answers below may or may not have even been considered. Instructors may need to evaluate the student's understanding independent of the issues addressed below. However, the suggested answers can provide a point of departure for class discussions of risk assessment and fraud risk.

**1. For each functional area, what are the key risk factors of a material misstatement? Do you think a material misstatement is likely to occur?**

For all functional accounting areas and cash management, there is an evident lack of **segregation of duties**. Employees do not validate any of the information included in internal reports. As a result, it is difficult to detect mistakes or fraudulent activity. Note that some students may conflate activity with control. The distribution of reports, is not the same as proper validation of the content. The inventory and sales functions are slightly different in that the vice presidents do not actively perform many of the activities in these areas. Mr. Madison has two inventory managers that are responsible for the actual ordering and movement of inventory. Mr. Madison reviews the source documentation of their work, performs spot checks, and reviews invoices for pricing discrepancies. Ms. Warren is not responsible for the daily sales as the store and website managers handle those. She reviews documentation, visits the store, performs analytical procedures, and follows up on variances.

For all the areas, the **oversight function is minimal**. As discussed above, most reporting is not verified. Even with concerns about falling cash flows, there has been no attempt to validate the reporting processes. While store managers may receive questions about missing sales or

expense targets, they do not see the actual revenue reporting, payroll register, or AP report to verify or match against their own records. Ms. Warren can override sales prices to match competitors, yet Mr. Weimer requests no reporting to analyze these actions. Mr. Madison closely controls inventory and serves as a contact for Mr. Weimer and others. However, Mr. Weimer does not confirm or compare the reports.

**A lack of adequate authorization complements the lack of comparative reporting.** AR may be written off without Mr. Weimer ever verifying that he authorized the action. He provides the signed report to Ms. Lasher and does not keep a copy for comparison. Mr. Scott in payroll can approve the hours of the floaters and then prepare the payroll. While Mr. Farmer may only use approved vendors and must have Mr. Weimer determine the payments to make each week, no one traces the proposed payments to original invoices or receiving reports. Ms. Morgan can move cash to various accounts with no need for documentation or approval.

Finally, there is some **conflicting evidence** provided in the interview memo (P-3). In trying to determine the cause of lower baking class revenue, Ms. Warren suggests fewer in-store students attend, but Ms. Lasher reports no drop in-store revenue from classes. Mr. Scott suggests the increase in payroll results from increased part-time hours, while Ms. Warren notes the store managers focus on the opposite. Ms. Long is proud to highlight reaching the \$1,000,000 sales mark, yet cash flows are below expectations.

Most functional areas are at moderate risk of material misstatement at a minimum. Payroll has a very high risk due to the lack of secondary authorization for the floaters. Cash management has a high risk due to the lack of oversight of Ms. Morgan's activities and the noted shortfall in cash flows. The AP and AR functions are moderate to high risk due to the lack of segregation and adequate oversight. The inventory, sales, and general ledger functions can reasonably be regarded as a moderate or lower risk due to the segregation of duties within those functions. However, students would not be wrong to consider the lack of segregation serious enough to rate all areas moderately high or higher.

## **2. In one functional area, there is evidence of potential fraud. Which area is it, and what is the evidence? How would you adapt the audit to determine if fraud did take place?**

The most apparent evidence of potential fraud is in the payroll area. Ms. Warren ostensibly schedules the floaters. However, no one verifies that the floaters follow the schedule. Instead, Mr. Scott tracks, approves, and prepares the payment for their hours. Additional evidence comes from the concerns raised about the increase in overall payroll. Per Mr. Weimer, the 10% increase in payroll costs is primarily due to increased part-time hours. However, the stores have been under pressure to limit the hours, and Ms. Warren made no mention of increasing the floaters' schedules to compensate. She has no explanation for the increased hours.

Additional procedures are needed in the payroll area to find potential fraud, specifically concerning the hourly employees. Samples from the payroll register should be compared to timecards or reports, the actual schedules, and the store manager or Ms. Warren's authorizations. Students may suggest other tests. However, finding the discrepancies between the approved and scheduled hours is the key to finding the fraud. Merely validating approval of the hours paid is insufficient since Mr. Scott approves the hours for the floaters.

**3. For each of the remaining functional areas, how would you rate the risk of fraud? What support do you have for this conclusion?**

Students will have a variety of responses to this. It is essential to distinguish between a suspected fraud scheme and actual evidence of the scheme since students may only have ideas about how fraud may be committed in these areas. Additionally, they need to differentiate between the risk of material misstatement and the risk of fraud.

**Accounts Receivable:** The risk of fraud from cash theft is high as Ms. Lasher receives and records the customer receipts before reporting to Mr. Weimer. She can easily steal payment and write off the account or otherwise alter the accounting records without Mr. Weimer knowing.

**Accounts Payable:** The risk of fraud from vendor kickbacks is high as Mr. Farmer alone enters the payments for approval and reviews the supporting documentation. Mr. Weimer approves payments based upon a report without ever verifying goods were received, or invoices match agreed-upon terms. This lack of verification can allow Mr. Farmer to overpay a vendor and share in the money.

**Cash Management:** The risk of cash theft is high as Ms. Morgan has no oversight. She has access to all accounts, limited controls on the cash movement, performs all the reconciliations on the investment and loan accounts, and reports cash, lending, and investment activity. She could easily hide cash theft by diverting funds to a personal account and reporting it as an investment loss or additional interest fees or lending fees.

**Inventory:** The risk of fraud in inventory is lower than in most areas. Mr. Madison provides the review and oversight, delegating the physical handling of inventory and the ordering process. However, he provides extensive testing (including spot inventory counts), reviews invoices for pricing discrepancies, and visits stores to oversee inventory management. His inventory managers handle the actual inventory reconciliation process, and Mr. Madison does not directly review their work but does provide adequate controls. However, he can commit fraud via kickbacks as he is responsible for finding vendors. He can easily report that no better vendors are available while receiving payments from the current vendors.

**Sales:** This is another area with a lower risk of fraud because of the activity's distributed nature. Stores report their daily sales up to Ms. Lasher for recording. Even if it occurred slowly over time, any significant shortage would stand out when Ms. Warren reviews the sales figures and contacts the store managers. The managers also know they have a bonus target and are likely to track the revenue reporting to ensure they receive any bonus earned. Ms. Warren earns a bonus for the baking class contracts. However, she has no responsibility for teaching the classes or collecting the money, limiting her ability to report fraudulent sales to earn a bonus. Finally, the fact that stores are not as profitable as in the past and key employees make considerable efforts to determine the cause provides counterfactual evidence of revenue fraud.

**General Ledger:** The risk of fraud here is moderate. Most of the information comes from other sources, although it is not validated fully. Mr. Weimer could steal from the deposits and alter the financial reporting to cover it up. The fact that he takes the deposit to the bank and Ms. Lasher never verifies the amounts she reported with the amounts deposited would allow him to hide such activity. Mr. Weimer could also be committing financial statement fraud as he performs the reconciliations and reporting, again with no secondary validation of the information. However, it is unlikely that Mr. Weimer reports strong revenue and lower cash flows as that would provide no tax benefit or help investors.

## Stage 2 Assignment

The second stage of the case should allow students to delve more deeply into the impact of risk assessments on the financial statement audit execution. They have received additional information that clarifies previous risk factors while demonstrating informal controls in action. These topics are suggestions to include in the risk assessment memo. Students may have addressed many more issues. One point to ensure students understand is that the memo's audience is the audit team, not DDI staff. Students often want to provide recommendations to "fix the problems" they identify rather than considering the impact of these risks on the audit.

### **1. What are some overall company risk factors that need to be addressed during the audit? What impact could they have on the financial statement reporting of DDI?**

As mentioned in stage 1, the inadequate segregation of duties provides the most significant risk of material misstatement and fraud. It is not unusual for a smaller company to lack sufficient personnel to segregate the duties fully. It is also not unusual for such companies to choose poorly in addressing this risk. In DDI's case, the idea of creating task efficiencies has led to extensive risk, particularly in the functional accounting areas. Fraud risk is highest in these areas, as is the risk of material misstatements. Cash, revenues, payroll, inventory, other expenses, AR and AP, could all be materially misstated as a result.

### **2. What are the function-specific risk factors for both material misstatement and fraud that you identified? How can they be addressed during the audit, be as specific as possible?**

This question aims to get students thinking of specific audit tests that would address specific risks. As students initially learn various audit tests and evidence options, they have difficulty evaluating the relative benefits of specific situations.

**Accounts Receivable:** The lack of proper authorizations and conflicting statements about store revenues could signify a heightened risk of cash theft. However, the addition of Mr. Weimer's review of all her reporting is a compensating control, albeit informal. To address this, the student may consider the following:

- Confirmations sent to all customers (not merely a sample).
- Cash receipts are traced to the deposit slips and bank statements (especially those deposited at headquarters).
- Write-offs reviewed, matched to the general ledger and Mr. Weimer's report.
- Analytical procedures performed to identify trends by store and revenue line.
- Cash counts at the stores reviewed or observed.

**Accounts Payable:** The lack of oversight and documentation provided for payments is not addressed with the additional case materials in any significant manner. The fact that Mr. Farmer is eager for promotions could be a positive or negative sign depending on how he plans to move up in his career. To address this, students may consider the following:

- Cash disbursements are traced to supporting documentation, including receiving reports or contracts.
- Payees on the check register matched to the approved vendor list.
- Analytical procedures performed to identify trends in vendor payments, volume, or expense line.
- Availability of cash discounts traced to original invoices or contracts to identify overpayments.

**Payroll:** Payroll poses the most significant risk of fraud as this area lacks any segregation regarding the floaters. Also, the fact that one of the floaters is Mr. Scott's son increases both the opportunity and incentive for fraud as he could simply overpay his son to help with college costs. Moreover, Mr. Weimer has contacted the store managers who have denied increasing hours, and Mr. Farmer has asked for Mr. Scott's help with his cost-savings proposal, but he refused. To address this, students may consider the following:

- Hourly and wages analytical procedures by the store to identify excesses.
- Sample of employee hourly rates traced to original authorizations.
- Sample of payroll register entries traced to timecards and manager authorization.
- All floater time traced to timecards and original schedule from Ms. Warren.
- Employees on the payroll register matched to hiring or termination documentation.

**Cash Management:** Cash Management poses the second most significant risk of fraud due to the poor segregation of duties and lack of oversight. Her close work with Mr. Weimer to track down the cash shortfall, combined with the implication that they discuss changes to the investment plan, indicates that Ms. Morgan does not operate in an isolated manner as had previously been the case. However, there is still a significant risk of theft of cash in this area. To address this, students may consider the following:

- Reconciliations of investment and lending accounts reperformed, tracing to transaction source documents.
- Analytical procedures performed on the investment accounts to identify excessive cash movements, lower investment income, or higher lending interest and fee expenses.
- Confirmations sent to all lending institutions, brokerage firms, or other firms identified as receiving or providing DDI funds.

**Inventory:** While the risk of misstatement or fraud in inventory is lower than in other areas, oversight is still a concern. Mr. Madison is responsible for the vendors and pricing with no oversight, providing him an opportunity for kickbacks or bribes. To address this, students may consider the following:

- Test counts of inventory performed to ensure correspondence with inventory records.
- Review of vendor files to confirm agreed-upon pricing.
- Review of potential vendors' documentation, or possible confirmation, performed to substantiate Mr. Madison's claims of no lower-cost vendor options.
- Analytical procedures performed on inventory costs, units bought and sold, and inventory levels to identify unusual trends.

**Sales:** The risk of misstatement or fraud in sales is arguably the lowest of the functional areas. As discussed above, the segregation of duties and the intense focus on sales limit misstatement or fraud opportunities. Underreported revenue would impact a manager bonus, reducing the chance it would go unnoticed. Overreported revenue is inconsistent with the concerns throughout DDI headquarters of falling cash flows. However, there is still some risk that needs investigating. To address this, students may consider the following:

- Analytical procedures were performed to identify significant variances between sales and cash collections.
- Observation of cash counts at the stores performed to ensure proper controls.
- Cash receipts from stores are traced to bank deposit slips on a sample basis.
- Bonus calculations are traced to revenue reports to ensure accuracy.

**General Ledger:** The risk of material misstatement is greater than the risk of fraud in this area, as Mr. Weimer has limited access to the original transactions. The intense scrutiny of the shortage in cash flows limits the likelihood of financial statement fraud as there is no incentive to report less DDI success. The fact that the financial statements attract so much attention also argues against financial statement fraud, increasing the likelihood of detection. The primary risks are cash theft as described above and material misstatement. To address this, students may consider the following:

- Subsidiary accounts reconciled to the general ledger.
- Review of bank reconciliations performed to identify unusual reconciling items.
- Bank deposits traced to original documentation from Ms. Lasher and bank deposit slips.
- Review of all journal entries prepared by Mr. Weimer.
- Analytical procedures performed on the financial statements to locate variances from the budget and prior periods.

**3. Which employee did you choose for the follow-up interview and why? Did you get the information you were expecting from this individual? Did it change your conclusions about any specific functional area for better or worse?**

The DDI employee that the teams choose for the second interview will vary, as will the reason for the choice. Evaluate the selection based upon the reasoning provided and the team's assessment of the value of choice made.

**4. At least one area has very strong risk factors for fraud. Which area is it, and what evidence have you found? How should the audit address this risk?**

As noted, payroll poses the most significant risk of fraud as this area lacks any segregation regarding the floaters. While the initial case materials highlighted this weakness regarding the floaters, the additional case materials support both the incentive and the opportunity. Mr. Scott's son needs help with college costs, and Mr. Scott is highly motivated to ensure his son completes a degree. Recall his comment about fears of finding a job since he lacks a college degree. All evidence points to the increased payroll costs originating in the floater hours. The store managers, Ms. Warren, and Mr. Weimer have worked to identify and control the payroll costs. There is conflicting information regarding the actual hours worked as the store

managers have denied increasing hours when asked by Mr. Weimer and Ms. Warren. Finally, his reluctance to collaborate with Mr. Farmer is concerning, as he cited his belief that analyzing payroll was not an appropriate duty for him to perform. It implies that he does not want to provide detailed analysis to others. To address this, students may consider the following:

- Analytical procedures performed on both hours and wages by the store to identify floater trends.
- Floater employee hourly rates traced to original hiring or termination documentation.
- All floater time traced to timecards and original schedule from Ms. Warren.

**Appendix D**  
**Deanna's Delights, Inc.: An Interview Exercise in Risk Assessment**

**Grading Rubric**

| <b>Team</b>   |   |  |   |  | <b>Total Case Points</b> | <b>100</b>           |
|---|---|--|---|--|--------------------------|----------------------|
| <b>Component:</b>   | <b>Excellent</b>  | <b>Good</b>  | <b>Fair</b>   | <b>Poor</b>  | <b>Points Possible</b>   | <b>Points Earned</b> |
| Team was prepared for the brief interviews                          | Each team member was prepared for the specific interview. The team strategically built on previous interviews.                            | Most team members were prepared. The team appeared to have a strategy for the interviews.  | Some team members were prepared. The team did not appear to have a strategy for the interviews.   | The team was not prepared nor had any strategy for the interviews.   | <b>15</b>                |                      |
| Team properly identified the risk factors for material misstatement | Team properly identified risk factors in at least four areas and adequately assessed the impact.  | Team properly identified risk factors in at least two areas and adequately assessed the impact.  | Team properly identified risk factors in at least one area and adequately assessed the impact.  | Team failed properly identified risk factors in any areas or adequately assess the impact.                             | <b>10</b>                |                      |
| Team correctly identified evidence of potential fraud               | Team correctly identified the area and evidence of the potential fraud and proposed appropriate tests.                                    | Team correctly identified the area or evidence of the potential fraud and proposed appropriate tests.                                    | Team correctly identified the area or evidence of the potential fraud but did not proposed appropriate tests.                           | Team incorrectly identified the area and evidence of the potential fraud and did not propose appropriate tests.        | <b>15</b>                |                      |
| Team properly identified the risk factors for fraud                 | Team properly identified risk factors in at least four areas and adequately assessed the impact.  | Team properly identified risk factors in at least two areas and adequately assessed the impact.  | Team properly identified risk factors in at least one area and adequately assessed the impact.  | Team failed properly identified risk factors in any areas or adequately assess the impact.                             | <b>10</b>                |                      |
| Team adequately justified choice for second interview               | Team provided clear and well-reasoned support for the choice of second interview character.   | Team provided a reasonably well-reasoned support for the choice of second interview character.   | Team provided adequate support for the choice of second interview character.  | Team did not provide adequate support for the choice of second interview character.                                    | <b>15</b>                |                      |
| The content of the risk assessment memo is well supported           | Memo provides clear reasoning for conclusions in at least four functional areas and includes reasonable proposed actions to address them. | Memo provides clear reasoning for conclusions in at least two functional areas and includes reasonable proposed actions to address them. | Memo provides clear reasoning for conclusions in at least one functional area and includes reasonable proposed actions to address them. | Memo provides inadequate reasoning for conclusions and does not include reasonable proposed actions to address them.   | <b>20</b>                |                      |
| Writing style, grammar and structure are sound.                     | Responses are well-written, organized, use professional tone, and free of grammar and spelling errors.                                    | Responses are written fairly well, organized, use good tone, and relatively free of grammar and spelling errors.                         | Responses are adequately written, organized, use appropriate tone, with some grammar and spelling errors.                               | Responses are poorly-written, disorganized, use unprofessional tone, and contain multiple grammar and spelling errors. | <b>15</b>                |                      |
| <b>Totals</b>   |   |  |   |  | <b>100</b>               |                      |
| <b>Comments</b>   |   |  |   |  |                          |                      |



### About the Authors

Dr. J. L. Souza (jsouza@sju.edu) is an Assistant Professor of Accounting at Saint Joseph's University. Dr. Souza holds an active CPA License. J. L. Souza has taught various accounting- and audit-related courses over the past 14 years, including the required introductory and basic audit courses, intermediate accounting, advanced auditing topics, fraud auditing, internal auditing, and IT auditing. She currently teaches at Saint Joseph's University (SJU) after teaching at the University of Memphis and Penn State University. In her role at SJU, Dr. Souza teaches accounting students the skills required to succeed in the profession, bringing new and critical competencies to SJU graduates. She has written cases regarding auditor judgment and reporting, preparing students for graduation and entering the auditing profession. Dr. Souza is a Certified Public Accountant with years of experience in the audit profession. She performed audits of both public and private companies with one of the largest international audit firms. She has provided training services for auditors at firms such as FedEx.

Dr. Veronica Paz (vpaz@iup.edu) is a Professor of Accounting at Indiana University of Pennsylvania. She teaches in the undergraduate, graduate M.B.A., and Ph.D. programs. Dr. Paz holds active Certified Public Accountant (CPA) licenses in Florida and Pennsylvania. She is also a Certified Information Technology Professional (CITP), Certified in Financial Forensics (CFF), and Chartered Global Management Accountant (CGMA). Her research interests include CEO Compensation, technology in the classroom, and the scholarship of teaching and learning.

Dr. Syed Zaidi (Syed.Zaidi@lsus.edu) is an Associate Professor of Accounting at Louisiana State University, Shreveport. Dr. Zaidi also has worked at California State University, San Marcos, and served as the Chair of the Accounting Department. He received his Ph.D. in International Business with a specialization in Accounting from the University of Texas at El Paso, an M.B.A. in Accounting from California State University San Bernardino, and a B.S. in Finance from California State University Long Beach. Dr. Zaidi is a Certified Management Accountant and a Certified Fraud Examiner. His research interests include cross-cultural studies and behavioral accounting research.

Samantha Dzielski (dtqcc@iup.edu) is a graduate assistant pursuing her Ph.D. in Accounting from Indiana University of Pennsylvania. She received her M.B.A. with a concentration in Finance, B.S. in Accounting, and B.A. in Philosophy with a minor in Ethics from Saint Francis University in Loretto, Pennsylvania. Her areas of interest include sustainability, tax, ethics, and accounting education. Samantha currently works in the power generation industry.

### Discussion Questions

1. Why are critical thinking skills so crucial to the auditing profession?
2. What is professional skepticism, and why must auditors conduct their audits utilizing professional skepticism?
3. What skills does an auditor need to be a good interviewer?

To Cite this Article

Souza, J. L., Paz, V., Zaidi, S., & Dzielski, S. (2021, Fall). The impossible interview: A two-stage interview case for auditing students. *Journal of Multidisciplinary Research*, 13(2), 75-108.

*Journal of Multidisciplinary Research*, Vol. 13, No. 2, Fall 2021, 109-112.  
ISSN 1947-2900 (print) • ISSN 1947-2919 (online) • <https://jmrpublication.org>  
Compilation Copyright © 2021 by St. Thomas University. All rights reserved.

## **Life Forward**

### **Kuty Meriden**

*Sports Management Expert and Administrator*



### **Background**

Dr. Yekutiel Meridan is the Chief Executive Officer of the Cosell Center for Physical Education, Leisure, and Health Promotion of the Hebrew University of Jerusalem, which is ranked among the leading universities in the world. The Cosell Sports Center is named after Howard William Cosell, a U.S. sports journalist and author in 1960s, 70s, and 80s.

Dr. Meridan received a Senior Teacher Certificate at the Physical Education Teaching College, Wingate Institute; a B.A. in Physical Education and Sociology from Haifa University; an M.P.H. in Physical Education from the School of Public Health in the Faculty of Medicine of the Hebrew University of Jerusalem; and a Ph.D. in Physical Education from The Ukrainian Government University for Physical Education and Sports. Then, he graduated from the Advanced Management Course in the School of Business Administration at the Hebrew University of Jerusalem.

From 1982 until 1993, Dr. Meridan was a director of different departments in the Sports Center of the Hebrew University of Jerusalem. In 1993, the Israeli government asked him to establish the Israel School Sports Association, which provides and directs all the sports activities at schools in Israel. The Association became one of the biggest and the most significant organizations in Israel.

In 2001, Dr. Meridan was requested to return to the Hebrew University to take the position of Achievement Sports Director and the Director of the Hebrew University Sports Centers, which is one of the biggest and the leading Sports Centers in Israel.

He also serves in central public positions: Chairman of the Finance Committee, Israel Schools Sports Association; Board Member of A.S.A., Israel; and Board Chairman of the Athletics Stadium Givat Ram Campus in the Hebrew University of Jerusalem. In addition, he serves as a highly sought-after advisor for projects in the field of sports and establishing Sports Centers.

## **Interview**

**By Hagai Gringarten**

**Editor-in-Chief, *Journal of Multidisciplinary Research***

### **1. Life is about stories. Do you have a favorite story you use as an icebreaker?**

Due to my life long extensive experience, I prefer not to choose one specific story. The story I present depends on the situation and my listeners. It has to touch them and fill them with human warmth.

### **2. What are the top three characteristics that contributed to your success?**

- Vision Creation and Long-Term Planning
- Flexible Thinking
- Motivation to Excel and Succeed

### **3. What life-changing events or decisions have guided your career?**

The decision to establish the High School Sports Association, which has changed the face of physical education in Israel. It resulted in changing the perspective of the high school principals and the heads of the Sports Departments in the Regional Councils.

### **4. Tell us of any expressions your parents often repeated with you.**

They always told me that education and health are a priority.

### **5. What books have you read lately?**

The book *First*, by Yael Arad, an Olympic silver medalist in Judo and the first Israeli to win an Olympic medal. Inspiring and insightful.

## **6. What elevator speech would you give children about success in life?**

- Find the area of your interest and try to excel. The way can be full of hardships and challenges. It demands your full commitment, consistency, and persistence.
- Set the bar higher each time you accomplish your goals.
- Dare to dream, and be committed to it.
- Remember that the way to success is not less important than success itself.

## **7. What was the most important decision you have made?**

I have been asked three times to take the senior position of Sport Executive Chairman in the Ministry of Sport in Israel. However, after analyzing the position demands, I came to the conclusion that I could not fulfill myself professionally because I had to function in a politically affected environment. On one hand, it would let me enjoy the senior position on a national level. On the other hand, my influence would be less than expected due to some unprofessional political involvements and my inability to select the Board of Directors to work with and plan for the long run.

## **8. What is one untrue thing that people think of you?**

In light of many significant projects in the field of construction and development I have been leading for the last 15 years, some think I paid most of my attention to construction and the physical capital of organization. I think it is not true. My biggest challenge was to look for qualified young human resources in the field of Sports Management. They are those who will lead the sport organizations in Israel.

## **9. You are a leading sports manager in Israel. What are the sources of your ideas and inspiration?**

I have a natural curiosity to discover innovative concepts. Every three years, I take an extensive professional tour around the leading universities in the U.S.A. I visit sport centers, NBA games, and NCAA record events. During the tour, I have professional conversations with the leading U.S. experts in Sports Management. In addition, I tour around the top sport centers in Israel, learn innovative approaches, and learn from mistakes that had been made while establishing new sport centers.

## **10. What was the best advice you have ever received? Who gave you this advice?**

Professor Hillel Raskin, may he rest in peace, who taught me in the B.Sc. and M.Sc. programs at university. He was the Manager of the Cosell Association before I took the position. He was my professor and my mentor. He taught me to develop a long-term vision and plan for the long run. He also shaped my ability to go into details in managing and directing the organization I lead and strive for perfection.

**11. What are the most important things you would like to promote on a professional level?**

To educate, teach values, and excel through sports.

To encourage the decision makers to recognize the importance of sports for adjusting character and shaping personality.

To contribute to the change of approach to Sports Management in Israel with the help of personnel training.

To raise up the experts who can lead and develop the sport culture for the new generation in Israel.

To Cite this Interview

Gringarten, H. (2021, Fall). Life forward: Kutty Meriden: Sports management expert and administrator. *Journal of Multidisciplinary Research*, 13(2), 109-112.

## **Student Corner**

### **Power and Reward Processing**

**Cady Ujvari**

*University of Dayton*

#### **Abstract**

The primary objective of this study was to investigate how changes in power and social status impact neural reactivity during reward processing. The study aimed to investigate how power and social status affect the neuronal processing of feedback on the gain or loss of incentives. The purpose of the experiment was to look at whether power increased reward responsiveness and if subordination decreased reward responsiveness. In this study, the researcher assigned a role as a leader, co-equal partner, or subordinate to each participant. This role described power. Based on that assignment, they did or did not have the ability to make decisions for him- or herself and an ostensible partner. The reward positivity (RewP) is a specific event-related potential that was the main neuronal focus in this experiment. The RewP was important because of its implications in approach or avoidance-driven behaviors. It also has implications in specific clinical disorders such as major depressive disorder.

*Keywords:* power, social status, neural reactivity, reward processing, incentives

#### **Introduction**

##### **Primary Objective**

The primary objective of this study was to investigate how changes in power and social status impacted neural reactivity during reward processing. The study aimed to investigate how power and social status affected the neuronal processing of feedback on the gain or loss of incentives. The purpose of the experiment was to look at whether power increases reward responsiveness and if subordination decreased reward responsiveness. In this study, the researcher assigned a role as a leader, co-equal partner, or subordinate to each participant. This role described power. Based on that assignment, they did or did not have the ability to make decisions for themselves and their ostensible partner. The reward positivity (RewP) is a specific event-related potential that was the main neuronal focus in this experiment. The RewP was

important because of its implications in approach or avoidance-driven behaviors. It also has implications in specific clinical disorders such as major depressive disorder.

While past research has claimed an extensive amount of knowledge about the RewP, this data has analyzed the RewP only through emotional or self-report measures. It says little about how power influences emotional or social interaction (Keltner, Gruenfeld, & Anderson, 2003). The present study analyzed the effect of RewP through social interaction. These cognitive functions play a vital role in inter-individual differences in self-regulation as well as in psychiatric disorders such as depression and anxiety.

## **Background**

Power is a fundamental force in social relationships. One's control over group resources lends the ability to influence other individuals by manipulating their access to those same resources, defines power (Keltner et al., 2003). Whether power refers to material power or social power, having any means of power indicates that an individual has control over some valuable item or situation that can aid in achieving one's goal. Current literature suggests that having power motivates action and leads people to become goal-oriented (Kuntsman & Maner, 2011). Power leads to approach motivation and goal pursuit behavior because power affords individuals the ability to experience greater access to resources as well as encounter fewer obstacles in achieving their goals. Powerful individuals more easily acquire desired outcomes, compared to powerless individuals. Across studies, power facilitated prioritization and goal-focused behavior (Guinote, 2007). Furthermore, powerful individuals have more easily obtained valued outcomes and better social positions.

Analyzing the effect of power on the RewP is salient as the RewP has implications in clinical disorders. The RewP, specifically RewP deficits, implicates the etiology of depression in that it not only predicts new onsets of depression but also shows increases in depressive symptoms (Goldstein et al., 2019). The low SES and minority groups, with lack of resources and control, are groups of low power, which also leads to more frequent feelings of depression. One neural biomarker of depression is the RewP (Proudfit, 2015). Thus, the examination of the relationship between the RewP and depressive symptoms and disorders is essential as the field works to identify neural correlates and predictors of depression.

An event that occurs during the pursuit of a goal is the reward positivity, the RewP. The RewP shows a positive-going wave that occurs following feedback indicating monetary gains (Proudfit, 2015). The amplitude of the RewP is larger when rewarding or giving positive feedback than it is for neutral or negative feedback, which suggests the RewP reflects the appraisal of the feedback as either positive or negative. Research indicates that the RewP relates to approach motivation, such that greater approach motivation correlates to enhanced RewP amplitudes. The RewP is sensitive to approach motivation and appears sensitive to the goal pursuit states that ultimately lead to goal accomplishment (Threadgill & Gable, 2016).

Power leads to approach motivation and goal pursuit in part because those in power enjoy greater access to resources and encounter fewer obstacles in progress to achieving their goals (Keltner et al., 2003). In a situation of power, an individual is more likely to see reward or experience positive feedback given their increased access to resources. Thus, an individual within a situation of power is likely to have an increased RewP given a higher frequency of positive feedback (Threadgill & Gable, 2016).



The present researcher predicted that when a participant was in an increased power manipulation, the RewP should be larger in that individual than in that of individuals who are in an equal power or low power condition. An increased power role lends the participant the ability to have control over a group's resources that can aid him or her in achieving his or her goal. An increased RewP following a monetary reward exemplifies the reward or positive feedback of the achievement of an individual in a high-power situation.

### **Methodology**

Fifty-three introductory psychology students participated in exchange for \$10 as well as two credits on the online sign-up portal SONA. Participants completed informed consent prior to the experiment. The researcher informed participants that they would complete a task in which they had a chance to win real money.

### **Procedures**

At the scheduled time of the appointment, two researchers each gathered a single participant, one being the true participant, the other a confederate. On the walk back to the lab, the researcher informed the participant that they would interact with the other participant they just saw in the waiting room, in a virtual environment. However, this other participant did not exist. Participants first completed a snack survey. The researcher asked the participant to write down, in order, their three favorite snacks and their three least favorite snacks from a list of provided snacks to help the lab. The researcher told the participant that this would be helpful to the lab in deciding which snacks to restock or not restock, and that the researcher would give him or her a snack while hooking up the EEG equipment. The snack survey decided which snack the researcher would offer the participant based on his or her condition of a leader, co-equal partner, or subordinate. Second, participants completed the Achievement Motivation Scale (AMS; Cassidy & Lynn, 1989). The AMS is a measure of natural leadership ability that determined the participant's role as the leader, equal partner, or subordinate in the following tasks. The scale would let the participant know how they compare to the "partner" who would ostensibly be completing the same measure in the next room. The researcher informed the participant that they would fill out some personality questionnaires on the computer and that the computer would use these responses to determine their personality type. All questions in the self-report measures were the type of questions typically asked during a routine psychology experiment. While the participant was completing the AMS scale, the researcher applied and tested EEG electrodes for impedance.

The participant went on to complete the initial doors task (see below for a description of the doors task) with no manipulation to measure baseline neural activity to feedback. It was important to emphasize that the participant would do this task alone because the researcher needed time to review the results of the AMS scale to assign them their role as either a leader, co-equal partner, or subordinate. When the participant completed the initial doors task, the researcher told him or her that he or she had won \$5.25. The researcher would tell the participant that while he or she was completing this task, he or she graded and compared that person's score on the AMS scale with the other participant's score to see how the researcher would assign roles for the rest of the session. In reality, the researcher did not use the AMS scale to determine an individual's natural leadership ability. Using their participant ID number, the researcher chose

their assignment to the leader, equal partner, or subordinate role. At this point, the researcher gave the participant the power manipulation and described to him or her the role as the leader, co-equal partner, or subordinate.

In the leader condition, the researcher told participants that they scored the highest on the leadership ability scale and selected them as the leader for the upcoming group tasks. The researcher gave a nametag to the participant to write “leader” on and wear for the remainder of the study so that anyone who entered the room would know their assigned role. In this role, the participant made decisions about how he or she would do the tasks and then had the opportunity to evaluate the subordinate at the end of the task. The participant, based on his or her evaluation, decided to give or withhold some extra rewards from the subordinate at the end of the tasks. Last, participants in the leader condition choose his or her snack from the list of snacks on the snack survey and choose the snack that his or her partner ate.

In the equal partner condition, the researcher told the participant that themselves and their partner both scored high on the personality measures, which is why the researcher had them participate as equal partners for the rest of the tasks. The researcher gave a nametag to the participant to write “leader” on and wear for the remainder of the study so that anyone who entered the room would know their assigned role. The researcher told participants that they would flip a coin if there were ever something that required a decision, and the pair did not agree on the decision, so that both participants had an equal chance at making decisions. The researcher also told the participant that the researcher divided any rewards associated with the task evenly between the two. The researcher told the participant that both partners equally liked the snack. In reality, this snack was a snack that the participant listed in their top three favorite snacks on the snack survey.

Last, under the subordinate condition, the researcher told the participant that he or she scored well on the personality questionnaires, but the other participant scored higher than them on the leadership ability scale. The researcher made the participant aware that the other participant’s score was better and that the experimenter was confident that the other participant will make a good leader and will do a good job of making the right decisions. The researcher told them to follow the instructions of the leader as they would get to make decisions about how they wanted the pair to do the tasks. The researcher also made the participant aware that the leader would evaluate his or her performance and based on his or her evaluation, he or she could decide to give or withhold extra rewards from them at the end of the task. The subordinate would not be able to evaluate the leader and would have no say in how much of a bonus they would get. Participants would not get to choose what snack they would receive, but instead, the leader would get to choose what snack they would receive. In reality, the researcher gave participants a snack listed among their three least favorite snacks. Participants were not required to eat the snack if they did not like it.

After the researcher gave the manipulation and the participant ate their snack, the second experimenter who retrieved the other ostensible participant from the waiting room at the start of the experiment came into the room and let the real experimenter know that they and their participant were ready to get started. The researcher explained to the participant that he or she now would be partaking in their first game, which they and the other participant would work together. The game was the same doors task that the participant initially played before manipulation. The researcher told the leader that at the end of the tasks, he or she would add the subordinate’s winnings with their winnings, and because he or she were the leader, he or she would divide the winnings however they saw fit, and could keep however much money they

want. The researcher told the equal partner that at the end of the task, he or she would add the winnings together and each partner would receive an equal amount of money. Last, the researcher told the subordinate that he or she would add their winnings and the leader's winnings, and because he or she was the leader, he or she would get to divide the money how he or she saw fit and he or she may keep all, some, or none of it.

At the completion of the manipulated task, the experimenter entered the room and told the participant that he or she would fill out another questionnaire before moving on to the next task. Participants completed Anderson, John, and Keltner's (2012) 8-item Sense of Power Scale, which determined how powerful the participant felt. The scale asked the participant to respond to 8 statements regarding their sense of power, on a seven-point scale ranging from 1 (Disagree Strongly) to 7 (Agree Strongly).

After the participants completed the scale, the researcher removed the cap and debriefed the participant. During the debriefing, the researcher informed the participant that the researcher placed them in this condition randomly, not because of actual leadership ability or inability. The researcher gave the participants \$10 and two credits on the online sign-up portal SONA that he or she could redeem for extra credit in several of FSU's psychology courses.

The researcher repeatedly explained upcoming procedures to the participant, giving them a sense of control over what was happening in their environment. Rather than close-ended yes-or-no questions, the researcher used open-ended questions regarding comfort and well-being were used through the procedures to allow the participants to express any discomfort or concerns. Subjects were also allowed to ask questions regarding the research procedures at any time during the protocol. The experimenter explained each step of the procedure so that the participant felt informed and to ease any stress of the participant.

## **EEG Recording**

The researcher placed a custom-fit 32-electrode Lycra cap on the participant's head. The researcher then filled the disks on the cap with a gel that allows the electrodes to better record brain activity at the scalp. Once the impedances guaranteed an accurate signal, the researcher recorded the signal from the cap. The researcher amplified and transmitted the signal to a computer that would store the data for later analysis. The data collected from the EEG recordings allowed for analyzation of the RewP.

## **The Doors Task**

As mentioned earlier, the task that participants completed was the doors task. The participants completed this task twice. They first completed it alone. After the researcher delivered the power manipulation, they completed it again as part of a perceived interactive task. The task included 60 total trials. In this task, the computer presented two doors on a computer screen. It was the participants' responsibility to guess which of the two doors had a monetary prize behind it. The participant would click either the left or right mouse button, which is corresponding with the doors shown on the screen. This is how the participant selected a door. If the prize was behind the door they selected, a green arrow pointing upward appeared on the screen, indicating that they correctly guessed and thus won \$.50. In contrast, if the prize was behind the opposite door, a red arrow pointing downward displayed on the screen, indicating that they had incorrectly guessed and thus lost \$.25. In essence, the participant was receiving a

monetary bonus for correct guesses and a penalty for incorrect guesses. Half of the feedback was positive and half of the feedback was negative. This task took approximately ten minutes and determined the RewP, the central neuronal measure of this study. The researcher hypothesized that if in the lead role, the RewP would be larger than the average RewP of the equal partner group and the subordinate group. In essence, the participant would feel a greater sense of reward. In the subordinate role, the RewP would be smaller than the average RewP of the leader and the partner. In essence, the participant would feel a lesser sense of reward. The researcher treated the equal partner group as a control group, which should be different from the RewP shown in both the high-power and low-power groups.

## Results

The researcher conducted a one-way between-subjects ANOVA to compare the effect of condition on the individual's sense of power. There was a significant effect of condition as the leader, partner, or subordinate on sense of power  $F(2, 50) = 9.88, p < .001, \eta_p^2 = .28$ . Post-hoc comparisons indicated that sense of power for the leader condition ( $M = 36.60, SD = 5.01$ ) felt a significantly larger sense of power than those in the subordinate condition felt ( $M = 28.68, SD = 7.06$ ),  $p < 0.001$ . Post hoc-comparisons also indicated that sense of power in the partner condition ( $M = 35.19, SD = 4.57$ ) also was significantly larger than the sense of power those in the subordinate condition felt,  $p = .001$ . Finally, there was no significant difference in sense of power between the leader condition and the partner condition, meaning that leaders and partners felt a greater sense of power than the subordinates, but there is no significant difference in sense of power between leader and partner conditions  $p = 0.506$ .

For each condition, means and standard deviations for the RewP are available in Table 1.

**Table 1**  
***Means and Standard Deviations for All Variables***

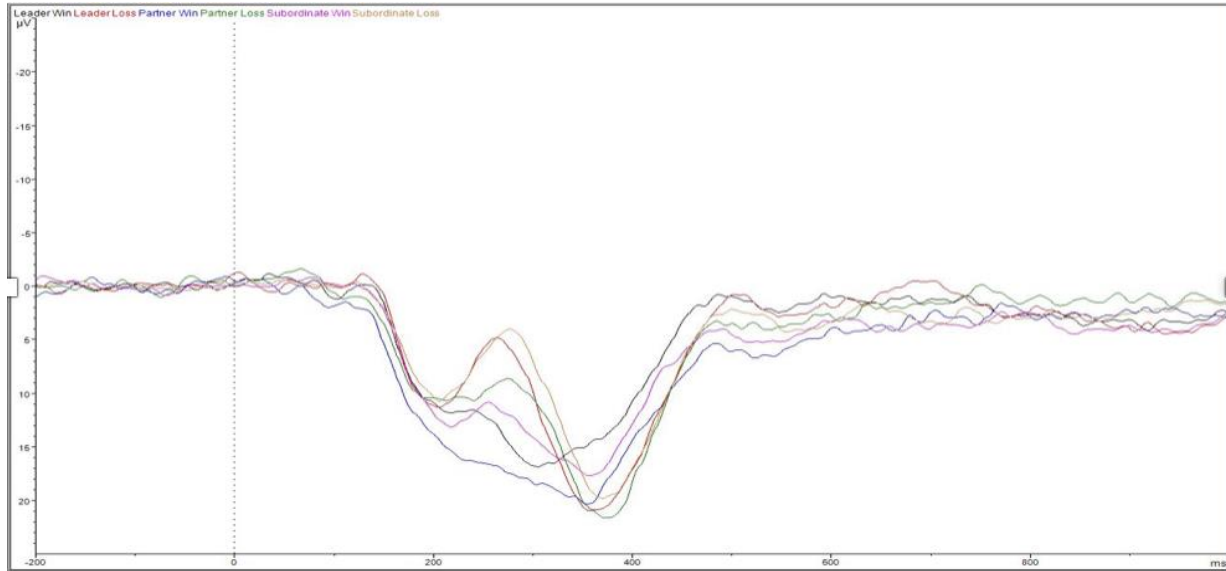
|             | Wins         | Losses      |
|-------------|--------------|-------------|
| Leader      | 14.60 (7.58) | 8.41 (4.90) |
| Partner     | 17.00 (7.05) | 9.94 (5.67) |
| Subordinate | 12.84 (8.55) | 6.81 (6.88) |

*Note.* Standard deviations are in parentheses.

A 3 (Condition: leader vs. partner vs. subordinate) x 2 (Outcome: wins vs. losses) within-between ANOVA revealed a main effect of outcome,  $F(1, 60) = 93.00, p < .001, \eta_p^2 = .65$ , in that wins were more positive going than losses. However, comparison of RewP amplitudes between the leader, co-equal partner, and subordinate conditions did not generate significant results,  $F(2, 50) = 1.43, p = .250, \eta_p^2 = .054$ . Finally, the interaction was not significant,  $F(2, 50) = 0.23, p = .793$  (see Figure 1).

**Figure 1**

***RewP waveforms for wins and losses bases on condition as leader, partner, or subordinate.***  
Plotted are negative values using convention.



### Discussion

The present experiment revealed that RewP amplitudes were larger following feedback indicating wins, compared to feedback indicating losses. The RewP amplitudes were not in fact larger in individuals assigned to the power condition compared to those assigned to the subordinate condition, as the researcher originally hypothesized. These results suggest that how the RewP responds in individuals in situations of power versus those in subordination may include other factors.

Similar to past research, even when researchers manipulated power, there is still a difference between gains and losses. Past research has shown that the RewP was more positive when feedback indicated that a participant won a reward versus when no reward was given (Proudfit, 2015). The present study used the doors task along with the winning or losing of actual money to emphasize the reward. Concurrent with the past research, the present study also showed that wins were more positive going than were losses.

Limitations of the present study provide an avenue for further research. One limitation to the current study is that the participant may not believe the manipulation because the individual that the participant believes they are interacting with is only a confederate. The participant only sees the confederate when being retrieved from the waiting room. Furthermore, an ostensible researcher takes the confederate to a different lab, and the participant never sees the confederate again for the remainder of the study. The participant may have a hard time believing that they are actually compared to, and are interacting with, another individual because of this potential reason. A future study may consider using another real participant, as opposed to a confederate posing as the partner. If the participant were able to see the partner with whom he or she is interacting, within the same lab, and partaking in the same tasks that he or she is completing simultaneously, the experiment would seem more real to the participant. This may be particularly

effective if the researcher told the participants which condition they fall into, and describes the procedures of their given condition in the same room as one another. The participant then may be more likely to believe the manipulation since he or she actually would be seeing how the other participant reacts to the condition the researcher gives that person. Being able to physically see their partner and know their related condition may make the experiment more believable and give more true insight to how the role of power effects the RewP. A second limitation is that the researchers only ran the current study in the context of an artificial laboratory setting. Interactions in real group settings are likely to be more complex because they involve real interaction and a dynamic environment among multiple people with their own motivations. It may be hard to manipulate a change in power to elicit a RewP in a lab setting. While research has the ability to focus on simple stimulus-response associations, it is hard to mimic the high-level structure that characterizes everyday human behavior and an increasingly complex world (Holroyd & Yeung, 2012).

In this study, having power over an ostensible partner did not lead to an increased RewP, compared to an individual experiencing subordination. Those in situations of power showed the same RewP amplitude as those who were subordinates. This work provides some insight in how the effect of winning versus losing influences the RewP within one individual. However, on a broader level, research should continue to examine the extent to which the experience of power activates the RewP in an individual, compared to the extent to which the experience of subordination activates the RewP. The extent to which power affects the RewP is important in that it leaves implications for approach motivated behavior and individual differences in affect that may influence the onset of clinical disorders.

#### References

- Anderson, C., John, O. P., & Keltner, D. (2012). The personal sense of power. *Journal of Personality*, 80(2), 313-344. <http://dx.doi.org.proxy.lib.fsu.edu/10.1111/j.1467-6494.2011.00734.x>
- Bress, J. N., & Hajcak, G. (2013). Self-report and behavioral measures of reward sensitivity predict the feedback negativity. *Psychophysiology*, 50(7), 610-616.
- Gehring, W. J., & Knight, R. T. (2000). Prefrontal–cingulate interactions in action monitoring. *Nature Neuroscience*, 3(5), 516-520. <http://dx.doi.org.proxy.lib.fsu.edu/10.1038/74899>
- Goldstein, B. L., Kessel, E. M., Kujawa, A., Finsaas, M. C., Davila, J., Hajcak, G., & Klein, D. N. (2019). Stressful life events moderate the effect of neural reward responsiveness in childhood on depressive symptoms in adolescence. *Psychological Medicine*, 1-8. <https://doi.org/10.1017/S0033291719001557>
- Guinote, A. (2007). Power and goal pursuit. *Personality and Social Psychology Bulletin*, 33(8), 1076-1087. <http://dx.doi.org.proxy.lib.fsu.edu/10.1177/0146167207301011>
- Hajcak, G. (2012). What we've learned from mistakes: Insights from error-related brain activity. *Current Directions in Psychological Science*, 21(2), 101-106. <http://dx.doi.org.proxy.lib.fsu.edu/10.1177/0963721412436809>
- Hajcak, G., McDonald, N., & Simons, R. F. (2003). Anxiety and error-related brain activity. *Biological Psychology*, 64(1-2), 77-90. [http://dx.doi.org.proxy.lib.fsu.edu/10.1016/S0301-0511\(03\)00103-0](http://dx.doi.org.proxy.lib.fsu.edu/10.1016/S0301-0511(03)00103-0)

- Holroyd, C. B., & Yeung, N. (2012). Motivation of extended behaviors by anterior cingulate cortex. *Trends in Cognitive Sciences*, 16(2), 122-128.
- Ingram, R. E., & Luxton, D. D. (2005). Vulnerability-stress models. In B. L. Hankin, & J. R. Z. bala (Eds.), *Development of psychopathology: A vulnerability-stress perspective; development of psychopathology: A vulnerability-stress perspective* (pp. 32-46). Thousand Oaks, CA: Sage Publications.  
<http://dx.doi.org.proxy.lib.fsu.edu/10.4135/9781452231655.n2>
- Keltner, D., Gruenfeld, D. H., & Anderson, C. (2003). Power, approach, and inhibition. *Psychological Review*, 110(2), 265-284. <http://dx.doi.org.proxy.lib.fsu.edu/10.1037/0033-295X.110.2.265>
- Kunstman, J. W., & Maner, J. K. (2011). Sexual overperception: Power, mating motives, and biases in social judgment. *Journal of Personality and Social Psychology*, 100(2), 282-294.
- Muller, U., & Mazur, A. (1997). Facial dominance in Homo sapiens as honest signaling of male quality. *Behavioral Ecology*, 8(5), 569-579.
- Proudfit, G. H. (2015). The reward positivity: From basic research on reward to a biomarker for depression. *Psychophysiology*, 52(4), 449-459.  
<http://dx.doi.org.proxy.lib.fsu.edu/10.1111/psyp.12370>
- Russell, B. (1938). *Power: A new social analysis*. New York, NY: W. W. Norton & Co.  
<https://login.proxy.lib.fsu.edu/login?url=https://search-proquest-com.proxy.lib.fsu.edu/docview/615081558?accountid=4840>
- Threadgill, A. H., & Gable, P. A. (2016). Approach-motivated pre goal states enhance the reward positivity. *Psychophysiology*, 53(5), 733-738.  
<http://dx.doi.org.proxy.lib.fsu.edu/10.1111/psyp.12611>
- Threadgill, A. H., & Gable, P. A. (2018). The sweetness of successful goal pursuit: Approach motivated pre goal states enhance the reward positivity during goal pursuit. *International Journal of Psychophysiology*, 132, 277-286.  
<http://dx.doi.org.proxy.lib.fsu.edu/10.1016/j.ijpsycho.2017.12.010>

#### About the Author

Cady M. Ujvari (ujvaric1@udayton.edu) graduated from Florida State University with a Bachelor's degree in psychology with Honors. She is currently in her first year of a Clinical Psychology Master's program at the University of Dayton where she serves as a Graduate Assistant.

#### Discussion Questions

1. Which aspects of power do you think lead the leaders and partners to feel a greater sense of power than the subordinates felt?
2. What is the RewP? What did you learn about its specific role in the context of this study?
3. How do you think the study could be different, to make the manipulation seem more real and believable to the participant?

To Cite this Article

Ujvari, C. (2021, Fall). Power and reward processing. *Journal of Multidisciplinary Research*, 13(2), 113-122.



*Journal of Multidisciplinary Research*, Vol. 13, No. 2, Fall 2021, 123-124.  
ISSN 1947-2900 (print) • ISSN 1947-2919 (online)  
Copyright © 2021 by St. Thomas University. All rights reserved.

## Book Review

Mind and Matter Matter

### Book Details

Hutchinson, A. (2018). *Endure: Mind, body, and the curiously elastic limits of human performance*. New York: William Morrow, 320 pages, soft cover, ISBN-13: 978-0062499868.

### Reviewer

Will Murphy, Esq.

### Synopsis and Evaluation

Alex Hutchinson may be uniquely qualified to write a book like *Endure*. As a lifelong runner, and one who competed at a high level (he relates chasing the “poor man’s four minute mile,” the four minute 1500 meter, and he represented his native Canada at the international level in track, cross country, road running, and mountain running), he knows from personal experience the pain and the urge to slow down that comes with pushing one’s limit in endurance sports. Having a Ph.D. in physics, he has the intellectual chops and the objectivity to examine, analyze, and synthesize data and opinions in a rational and unbiased way. And as a professional writer, he is able to present it all in a very accessible and succinct way.

He draws on many sources for *Endure*, some mainstream, some more iconoclastic, some that may have crossed over, and draws connections between disciplines from marathon running (Nike’s efforts to break the two hour barrier for the marathon come up in the beginning, middle, and end of the book), ironman triathlon, cycling, free diving, Antarctic expeditions, and mountaineering. Yet, the book is a mere 267 pages, and most readers can complete it without rushing in a handful of sittings.

Is endurance performance limited mainly by the body’s physical limits? Or is what holds us back primarily in the brain? And to the extent it is the latter, is that a choice, or a hard-wired system that simply prevents us (in almost all cases) from running (or cycling, or climbing, or dragging a sled, etc.) until we suddenly die?

What is the role of dehydration, and to what extent are dehydration and the sensation of thirst different inputs? What about heat? Thin air (or even no air)? The quantity and quality of fuel? Can purely mental fatigue limit a purely physical performance? And what can one do with the information to expand one’s own limits?

Hutchinson perhaps raises more questions than he or anyone can definitively answer. But his book will be of interest to anyone who wants to understand more of what makes humans able – or apparently unable – to endure various challenges. It is written with great clarity and humility, and I recommend it.

### **In the Author's Own Words**

“At first, you might not notice...but gradually the effort required to sustain your pace will grow until you become conscious that you won't be able to continue forever – that the unforgiving minute must eventually end. At this point, your core temperature is still within the normal range, your muscles still have all the fuel and oxygen they need [...]. Only your brain knows that trouble is coming, but the clock is ticking” (p. 210).

“If races were really just plumbing contests, a test of whose pipes could deliver the most oxygen and pump the most blood – they would be boringly deterministic. You race once, and you know your limits. But that's not how it works. [...] When I line up for a race, I remind myself that my fiercest opponent will be my own brain's well-meaning protective circuitry” (p. 261).

“Part of the challenge is that endurance is a conceptual Swiss Army knife. It's what you need to finish a marathon; it's also what enables you to keep your sanity during a cross country flight crammed into the economy cabin with a flock of angry toddlers. [...] Think of Ernest Shackleton's ill-fated Antarctic expedition and the crew's two-year struggle for survival [...]. Was it the toddlers-on-a-plane type of endurance that enabled them to persevere or straightforward physical fortitude? Can you have one without the other?” (p. 9).

### **Reviewer's Details**

Will Murphy has competed in sports, including endurance sports, since he started running in local cross-country meets as a kid in the 1970s. He discovered he was more stubborn than fast. Since 1999, he has competed in adventure racing, completing nonstop wilderness races of up to 75 hours. In 2010, he helped lead a crew that set the world record for longest journey by dragon boat. He also authored *Blazing Paddles: Your Guide to Forming a Fun, Fast Dragon Boat Team*, the number one book on Amazon on this sport; and he coaches dragon boat paddlers and instructors. As Will tells it, he has never lost a race – it's just that some of them ended before he could finish winning them.

### **To Cite this Review**

Murphy, W. (2021, Fall). Mind and matter matter [Review of the book *Endure: Mind, body, and the curiously elastic limits of human performance* by Alex Hutchinson]. *Journal of Multidisciplinary Research*, 13(2), 123-124.

## **Journal of Multidisciplinary Research**

### **Index to Volume 13 (2021)**

**Compiled by Raúl Fernández-Calienes**

#### **By Author**

- Ben-Eli, M., Simon, M. S., & Levental, O. (2021, Fall). The relative age effect in higher education. *Journal of Multidisciplinary Research*, 13(2), 59-73.
- Clark, S. G. (2021, Spring). Educational policy and ethics for human-nature (wildlife) coexistence: An inquiry, a case, and recommendations. *Journal of Multidisciplinary Research*, 13(1), 5-29.
- Dardani, A. P., & Costabel, A. M. (2021, Spring). Common law for uncommon technologies: A new 'corpus juris' from artificial intelligence. *Journal of Multidisciplinary Research*, 13(1), 31-58.
- Dula, N., & Tang, H. (2021, Fall). Effects of leadership on an organizational culture producing quality products and services. *Journal of Multidisciplinary Research*, 13(2), 21-41.
- Fernández-Calienes, R. (2021, Fall). Journal of Multidisciplinary Research: Index to Volume 13 (2021). *Journal of Multidisciplinary Research*, 13(2), 125-127.
- Fernández-Calienes, R. (2021, Spring). Life forward: Luis Victoria: Attorney and world karate champion. *Journal of Multidisciplinary Research*, 13(1), 111-116.
- Futrell, G. D. (2021, Fall). Why patients lie: A self-discrepancy theory perspective of patient deception. *Journal of Multidisciplinary Research*, 13(2), 43-57.
- Gringarten, H. (2021, Fall). Editorial. *Journal of Multidisciplinary Research*, 13(2), 3.
- Gringarten, H. (2021, Spring). Editorial. *Journal of Multidisciplinary Research*, 13(1), 3.
- Gringarten, H. (2021, Fall). Life forward: Kutty Meriden: Sports management expert and administrator. *Journal of Multidisciplinary Research*, 13(2), 109-112.
- Gringarten, H. (2021, Spring). [Review of the book *Marketing: Principles and practice: A management-oriented approach* by S. Hollensen & O. M. Opresnik]. *Journal of Multidisciplinary Research*, 13(1), 119-120.
- Kwok, H. M. H., & Cheung, S. Y. (2021, Spring). Notational analysis of fighting tactics in taekwondo athletes with three levels of expertise. *Journal of Multidisciplinary Research*, 13(1), 59-69.
- McNamara, R. (2021, Spring). [Review of the book *Blazing paddles: Your guide to forming a fun, fast dragon boat team*, by W. Murphy]. *Journal of Multidisciplinary Research*, 13(1), 117-118.

- Munin, N., & Malka-Tiv, K. (2021, Fall). Government assistance programs and tax obedience in COVID-19 times. *Journal of Multidisciplinary Research*, 13(2), 5-19.
- Murphy, W. (2021, Fall). Mind and matter matter [Review of the book *Endure: Mind, body, and the curiously elastic limits of human performance* by Alex Hutchinson]. *Journal of Multidisciplinary Research*, 13(2), 123-124.
- Oramas, J. E. (2021, Spring). Psychological, motivational, and contextual factors impacting student sport participation. *Journal of Multidisciplinary Research*, 13(1), 71-85.
- Psuturi, T. (2021, Spring). Investor psychology: Behavioral biases having an impact on financial decisions. *Journal of Multidisciplinary Research*, 13(1), 103-110.
- Souza, J. L., Paz, V., Zaidi, S., & Dzielski, S. (2021, Fall). The impossible interview: A two-stage interview case for auditing students. *Journal of Multidisciplinary Research*, 13(2), 75-108.
- Ujvari, C. (2021, Fall). Power and reward processing. *Journal of Multidisciplinary Research*, 13(2), 113-122.
- Whapham, T. J. (2021, Spring). How do these symbols work? Toward a theology of symbolic communicative efficacy. *Journal of Multidisciplinary Research*, 13(1), 87-101.

### **By Title**

- Dardani, A. P., & Costabel, A. M. (2021, Spring). **Common** law for uncommon technologies: A new 'corpus juris' from artificial intelligence. *Journal of Multidisciplinary Research*, 13(1), 31-58.
- Gringarten, H. (2021, Fall). **Editorial**. *Journal of Multidisciplinary Research*, 13(2), 3.
- Gringarten, H. (2021, Spring). **Editorial**. *Journal of Multidisciplinary Research*, 13(1), 3.
- Clark, S. G. (2021, Spring). **Educational** policy and ethics for human-nature (wildlife) coexistence: An inquiry, a case, and recommendations. *Journal of Multidisciplinary Research*, 13(1), 5-29.
- Dula, N., & Tang, H. (2021, Fall). **Effects** of leadership on an organizational culture producing quality products and services. *Journal of Multidisciplinary Research*, 13(2), 21-41.
- Munin, N., & Malka-Tiv, K. (2021, Fall). **Government** assistance programs and tax obedience in COVID-19 times. *Journal of Multidisciplinary Research*, 13(2), 5-19.
- Whapham, T. J. (2021, Spring). **How** do these symbols work? Toward a theology of symbolic communicative efficacy. *Journal of Multidisciplinary Research*, 13(1), 87-101.
- Souza, J. L., Paz, V., Zaidi, S., & Dzielski, S. (2021, Fall). **The impossible** interview: A two-stage interview case for auditing students. *Journal of Multidisciplinary Research*, 13(2), 75-108.
- Psuturi, T. (2021, Spring). **Investor** psychology: Behavioral biases having an impact on financial decisions. *Journal of Multidisciplinary Research*, 13(1), 103-110.
- Fernández-Calienes, R. (2021, Fall). **Journal** of Multidisciplinary Research: Index to Volume 13 (2021). *Journal of Multidisciplinary Research*, 13(2), 125-127.
- Gringarten, H. (2021, Fall). **Life forward: Kutty** Meriden: Sports management expert and administrator. *Journal of Multidisciplinary Research*, 13(2), 109-112.
- Fernández-Calienes, R. (2021, Spring). **Life forward: Luis** Victoria: Attorney and world karate champion. *Journal of Multidisciplinary Research*, 13(1), 111-116.

- Murphy, W. (2021, Fall). **Mind** and matter matter [Review of the book *Endure: Mind, body, and the curiously elastic limits of human performance* by Alex Hutchinson]. *Journal of Multidisciplinary Research*, 13(2), 123-124.
- Kwok, H. M. H., & Cheung, S. Y. (2021, Spring). **Notational** analysis of fighting tactics in taekwondo athletes with three levels of expertise. *Journal of Multidisciplinary Research*, 13(1), 59-69.
- Ujvari, C. (2021, Fall). **Power** and reward processing. *Journal of Multidisciplinary Research*, 13(2), 113-122.
- Oramas, J. E. (2021, Spring). **Psychological**, motivational, and contextual factors impacting student sport participation. *Journal of Multidisciplinary Research*, 13(1), 71-85.
- Ben-Eli, M., Simon, M. S., & Levental, O. (2021, Fall). The relative age effect in higher education. *Journal of Multidisciplinary Research*, 13(2), 59-73.
- McNamara, R. (2021, Spring). [Review of the book *Blazing paddles: Your guide to forming a fun, fast dragon boat team*, by W. Murphy]. *Journal of Multidisciplinary Research*, 13(1), 117-118.
- Gringarten, H. (2021, Spring). [Review of the book *Marketing: Principles and practice: A management-oriented approach*, by S. Hollensen & O. M. Opresnik]. *Journal of Multidisciplinary Research*, 13(1), 119-120.
- Futrell, G. D. (2021, Fall). Why patients lie: A self-discrepancy theory perspective of patient deception. *Journal of Multidisciplinary Research*, 13(2), 43-57.

To Cite this Index

- Fernández-Calienes, R. (2021, Fall). Journal of Multidisciplinary Research: Index to Volume 13 (2021). *Journal of Multidisciplinary Research*, 13(2), 125-127.



## About the Journal

### Advertising

For information on advertising in the *Journal of Multidisciplinary Research*, please contact the Editor-in-Chief (hgringarten@stu.edu).

### Archiving

The *Journal of Multidisciplinary Research* is archived in print form in the St. Thomas University Library and in electronic form on the journal's Website (<http://www.jmrpublication.org>); back issues are available at that Website. In the event the journal ceases publication, access to journal content will remain viable through both the Library and the Website.

### Copyright Notice

The *Journal of Multidisciplinary Research* compilation is Copyright © by St. Thomas University.

### Disclaimer

The *Journal of Multidisciplinary Research* publisher, editor-in-chief, managing editor, associate editors, and reviews editor, and the members of the editorial advisory and editorial review committees are not responsible for errors or any consequences arising from the use of information contained in the *Journal of Multidisciplinary Research*; the views and opinions expressed do not necessarily reflect those of the publisher, editor-in-chief, managing editor, associate editors, or reviews editor; neither does the publication of advertisements constitute any endorsement by the publisher, editor-in-chief, managing editor, associate editors, or reviews editor of the products advertised.

### Electronic Submissions

The *Journal of Multidisciplinary Research* accepts electronic submissions.

### Indexing and Listing

The *Journal of Multidisciplinary Research* is indexed in [ProQuest](#), [Cabells](#), [EBSCO](#), [Gale-Cengage Learning](#), [CiteFactor](#), [Ulrich's](#), [de Gruyter](#) (Germany), [Elektronische Zeitschriftenbibliothek \(EZB\)](#) (Germany), and [European Reference Index for the Humanities and the Social Sciences \(ERIH PLUS\)](#) (Norway) as well as the [Directory of Open Access Journals \(DOAJ\)](#) and the [Directory of Open Access Resources \(ROAD\)](#). It is listed in the [AcademicKeys](#), [Cision Directory](#), [EconPapers](#), [Gaudeamus](#), [Google Scholar](#), [Isis Current Bibliography](#), [JournalSeek](#), [Journals4Free](#), [The Linguist List](#), [MediaFinder](#), [Microsoft Academic](#), [NewJour](#), [Research Papers in Economics \(RePEc\)](#), [ACNP](#) (Italy), [BVB-Bibilotheeks Verbund Bayern](#), [FAST-Zugang](#) (Germany), [CIRC](#) (Spain), [COPAC](#) (England), [CORE](#) (UK), [CUFTS Journal Database](#) (Canada), [EconBiz](#) (Germany), [Edanz](#) (Japan), [Globethics](#) (Switzerland), [HEC Paris Journal Finder](#) (France), [Library Hub Discoverer](#) (UK), [MIAR](#) (Spain), [Mir@bel](#) (France), [NSD - Norwegian Register](#) (Norway), [PhilPapers](#) (Canada), [REBIUN-CRUE](#) (Spain), [ROAD: Directory of Open Access Scholarly Resources](#) (France), [SUDOC](#) (France), [ZeitschriftenDatenBank \(ZDB\)](#) (Germany), and the [Open University of Hong Kong Electronic Library](#) (Hong Kong). It is accessible via [BASE-Bielefeld Academic Search Engine](#) (Germany), and the [NIST Research Library](#) (National Institute of Standards and Technology, part of the U.S. Department of Commerce).

### **License Statement**

Authors publishing in the *Journal of Multidisciplinary Research* may use the following Creative Commons license for their articles: Creative Commons Attribution Non-Commercial No Derivatives license ([CC BY-NC-ND](#)), for which no charge applies. This license allows users to download and share the article for non-commercial purposes, so long as the article is reproduced in the whole without changes, and the original authorship is acknowledged.

### **Open Access Statement**

The *Journal of Multidisciplinary Research* is an open access publication. It does not charge readers or their institutions for access. Our users have the right to read, download, copy, print, search, or link to the full texts of its contents.

### **Peer Review Process**

The *Journal of Multidisciplinary Research* abides by a double-blind peer review process such that the journal does not disclose the identity of the reviewer(s) to the author(s) and does not disclose the identity of the author(s) to the reviewer(s).

### **Permissions and Reprints**

For information on permissions and reprints in relation to the *Journal of Multidisciplinary Research*, please contact the Editor-in-Chief (hgringarten@stu.edu).

### **Privacy Statement**

The *Journal of Multidisciplinary Research* uses the names and e-mail addresses it enters into this journal exclusively for the stated purposes of this journal and will not make these available for any other purpose or to any other party.

### **Publication Frequency**

The *Journal of Multidisciplinary Research* is published three times per year.

### **Sponsorship**

The *Journal of Multidisciplinary Research* publisher is St. Thomas University. The *Journal of Multidisciplinary Research* sponsor is St. Thomas University. The *Journal of Multidisciplinary Research* sources of support are the generosity of Professor Craig Reese, Ph.D., and the financial support of the St. Thomas University Gus Machado School of Business.

### **Submissions Policies**

The *Journal of Multidisciplinary Research* does not have Article Processing Charges (APCs) or Article Submission Charges (ASCs).

The *Journal of Multidisciplinary Research* takes measures to screen for plagiarism, using such software as TurnItIn.

*Journal of Multidisciplinary Research* content requires the following: (√) Attribution, (√) No Commercial Usage, and (√) No Derivatives.

The *Journal of Multidisciplinary Research* license statement is available [here](#).

*Journal of Multidisciplinary Research* authors retain copyright to their work.

### **To Cite Articles**

To cite from the *Journal of Multidisciplinary Research*, you may use this example:  
Dunn, M. W., Dastoor, B., & Sims, R. L. (2012, Spring). Transformational leadership and organizational commitment: A cross-cultural perspective. *Journal of Multidisciplinary Research*, 4(1), 45-59.



## Submissions

### Author Guidelines

The *Journal of Multidisciplinary Research* (JMR) seeks to publish authors who strive to produce original, insightful, interesting, important, and theoretically solid research. Demonstration of a significant “value-added” contribution to a field’s understanding of an issue or topic is crucial to acceptance for publication.

All articles submitted to the JMR must be accessible to a wide-ranging readership. Authors should write manuscripts as simply and concisely as possible, without sacrificing meaningfulness or clarity of exposition.

Manuscripts should be no more than 26, double-spaced pages (justified, one-inch margins, half-inch indentations, in Times New Roman 12-point font, *using active voice*), including an abstract (up to 200 words), keywords (up to seven terms), references (with DOI numbers), discussion questions (three to five), and relevant tables and figures (in their correct position in the text, not separate and not at the end of the manuscript), and appendixes (at the end of the manuscript). At his or her own discretion, the JMR editor-in-chief may allow additional space to papers that make very extensive contributions or that require additional space for data presentation or references.

### Submission Preparation Checklist

When an author submits his or her manuscript to the *Journal of Multidisciplinary Research* for publication consideration, he or she agrees to abide by JMR publication requirements. Specifically, an author must:

- Agree that his or her manuscript is not under review for publication elsewhere and that he or she will not submit it to another publication during the review period at the JMR.
- Attest that the manuscript reports empirical results that have not been published previously. An author, whose manuscript utilizes data reported in any other manuscript, published or not, must inform the editors of these reports at the time of submission.
- Confirm he or she has not submitted the manuscript previously to the JMR for review. He or she may submit a manuscript that previously was released in conference proceedings, but the editors may view this manuscript less favorably.
- Agree that, during the review process, he or she will take down all other versions of submitted manuscripts (e.g., working papers, prior drafts, final drafts) posted on any Web site (e.g., personal, departmental, institutional, university, archival, working series).
- Agree that his or her submission supports the core values of St. Thomas University (<http://www.stu.edu>).
- Adhere to the sixth edition of the *Publication Manual of the American Psychological Association* (APA, 6th edition). At the initial stage, the editors tend to review less favorably those manuscripts that do not conform to APA and may return them to the primary author for revision prior to submission to the full review process.
- Submit the manuscript in a Microsoft Word file from which the author has removed the title page, his or her name, and all author-identifying references.
- Submit the manuscript via e-mail to the JMR Editor-in-Chief (at [hgringarten@stu.edu](mailto:hgringarten@stu.edu)).
- Be willing to review submissions to the *Journal of Multidisciplinary Research* by other authors if the JMR Editor-in-Chief calls upon him or her to do so.

**JMR**

*Journal of Multidisciplinary Research*

<http://www.jmrpublication.org>

## Editorial Review Board

The [\*Journal of Multidisciplinary Research\*](#) Editorial Review Board consists of selected individuals, expert in their field(s), reviewing submissions to the journal and serving for one year.

Jeanne Abrams, Ph.D., *University of Denver, Colorado*  
George Antoniou, Ph.D., *Lynn University*  
Itay Basevitch, Ph.D., *Anglia Ruskin University, United Kingdom*  
Paul Breman, D.B.A., *Utrecht School of Applied Sciences, The Netherlands*  
Diane N. Capitani, Ph.D., *Northwestern University, Illinois*  
Anirban Chakraborty, Ph.D., *Stanford University, California*  
Marie Thérèse Champagne, Ph.D., *University of West Florida, Florida*  
Michael E. Dillon, Jr., Ph.D., *Tusculum College, Tennessee*  
Robert Epling, Ph.D., *St. Thomas University, Florida*  
Claudia E. Fisher, Ph.D., *Lemontree Brand Strategy Consulting, Germany*  
Cecil Flournoy, Ph.D., *Stillman College, Alabama*  
Yair Galily, Ph.D., *Interdisciplinary Center (IDC), Israel*  
Leandro D. Gryngarten, Ph.D., *Emory University, Georgia*  
Arnon HersHKovitz, Ph.D., *Tel Aviv University, Israel*  
Michelle Hough, D.Sc., *Pennsylvania State University, Pennsylvania*  
Lawrence D. Hubbell, Ph.D., *Seattle University, Washington*  
Lloyd Mitchell, M.B.A., C.P.A., *St. Thomas University, Florida*  
Veronica Paz, D.B.A., C.P.A., *Indiana University of Pennsylvania*  
Christy A. Powers, J.D., LL.M., *St. Petersburg College, Florida*  
Selen Razon, Ph.D., *West Chester University of Pennsylvania, Pennsylvania*  
Craig Reese, Ph.D., *St. Thomas University, Florida*  
Carlos M. Rodríguez Ph.D., *Delaware State University Dover, Delaware*  
Michelle I. Seelig, Ph.D., *University of Miami, Florida*  
Tsafi Timor, Ph.D., *Kibbutzim College of Education, Israel*  
Hanna Trojanowska, Ph.D., *Siedlce State University, Poland*  
Tseng, Chien-Chi, Ph.D., *University of Florida, Florida*  
Marilena Vecco, Ph.D., *Erasmus University Rotterdam, The Netherlands*  
Margaret Wilkins, Ph.D., *University of Tennessee, Tennessee*

# JMR

*Journal of Multidisciplinary Research*

<http://www.jmrpublication.org>