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Organizational Cultural Entrenchment: Exploring Cultural Antecedents of Actively Destructive Employee Behaviors as a Manifestation of Voice in Mergers and Acquisitions

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by

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We, the undersigned committee, hereby approve the attached dissertation,

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Abstract

Title: Organizational Cultural Entrenchment: Exploring Cultural Antecedents of Actively Destructive Employee Behaviors as a Manifestation of Voice in Mergers and Acquisitions

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Mergers and acquisitions are frequently leveraged as a vehicle for company growth. However, many of these transactions fail to yield a positive result and often cause a net loss of shareholder value.

There are many interrelated factors at work within a merger or acquisition. Structure, leadership, finances, strategic fit, market, and price are just a few variables to consider. However, the factor of culture, and the failure of cultural integration, has surfaced in literature as a significant contributor to losses within mergers and acquisitions.

This study built on the work of Harris, Hirschman, Kotter, and Schlesinger and examined the deleterious effects of entrenched cultural values in a company being merged or acquired. Organizational Cultural Entrenchment (OCE) was defined as a phenomenon, and its contributing effects to actively destructive voice raised in resistance to cultural shifts within the new organization were considered as contributors to merger and acquisition failure. Further, the effect of resistance mitigation treatments on the active and destructive voice was studied as an aid to

combat cultural integration failure, resulting in suggestions to reduce the deleterious effects of OCE.

This work emphasizes the importance of measuring OCE in the acquired as a matter of due diligence within initial M&A processes. Practitioners are encouraged to leverage this awareness in applying proper treatments to thwart behaviors that may lead to M&A failure.

Keywords: organizational cultural entrenchment, culture, structural inertia, locus of control, uncertainty avoidance, authoritarianism, reactiveness, territoriality, psychological ownership, exit/voice/loyalty/neglect, threat rigidity, resistance to change, resistance mitigation, communication, participation, facilitation, negotiation, coercion

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List of Abbreviations

ADV	Actively Destructive Voice
AVE	Average Variance Extracted
CB-SEM	Covariance-Based Structural Equation Modeling
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CMV	Common Method Variance
COR	Coercion
CR	Convergent Reliability
CRM	Change Resistance Mitigation
DWLS	Diagonally Weighted Least Squared
EFA	Exploratory Factor Analysis
EU	European Union
G7	Group of Seven (Intergovernmental political and economic forum)
H<n>	Hypothesis<number>
HTMT	Heterotrait-Monotrait (test of discriminate validity)
IER	Insufficient Effort Responding
IQR	Interquartile Range
IRB	Institutional Review Board
JASP	Jeffreys' Amazing Statistics Program
KMO	Kaiser-Meyer-Olkin (test of sphericity)

LDR	Leadership
LOC	Locus of Control
M&A	Mergers and Acquisitions
MTurk	Mechanical Turk, short for Amazon Mechanical Turk
OCE	Organizational Cultural Entrenchment
PCA	Principal Component Analysis
PHYS	Physical (used in Physical Contract Renegotiation)
PLS-SEM	Partial Least Squares Structural Equation Modeling
PSYCH	Psychological (used in Psychological Contract Renegotiation)
RQ	Research Question
RTC	Resistance to Change
RMSEA	Root Mean Square Error of Approximation
SEM	Structural Equation Modeling
SRMR	Standardized Root Mean Square Residual
STR	Structural Inertia
TER	Territoriality
THR	Threat Rigidity
TLI	Tucker-Lewis Index (measure of goodness-of-fit)
UNA	Uncertainty Avoidance
VIF	Variance Inflation Factor (measure of collinearity)

Acknowledgments

I write these words some 30,000 feet above Florida on the 48th flight I have taken between Nashville and Florida Tech in Melbourne. It seems like so long ago that I began this voyage of discovery, having no idea what this program would mean to me or how it would change me, nor the depth of sacrifice required to realize the dream of this research and degree.

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encouragement. You have shown me what it means to be a true academic, giving to your students, college, university, and profession. Your passion for teaching is unparalleled, and without your instruction, this work would not have been completed, nor would this study have been executed with the rigor you inspired. I am grateful to you for all these things, but above all, I thank you for demonstrating that a person of devout faith can also be a person of deep intellectual prowess.

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Dedication

This work is dedicated to peacemakers everywhere who endeavor to reconcile cultural differences in their businesses, communities, nations, and the world. May you never tire of doing good. (Matthew 5:9; Galatians 6:9)

Chapter 1: Introduction

Overview

Merging with and acquiring complementary businesses has been a long-standing method of growth and development for companies. These mergers and acquisitions (M&A) have been utilized in the execution of strategic vision to facilitate domestic growth and international expansion, penetrate new markets, grow customer bases, and acquire valuable patents, trade secrets, and technologies (Bagdadli et al., 2014; Bauer & Matzler, 2014; Bhagwan et al., 2018; Dauber, 2012; Dezi et al., 2018; Graebner et al., 2010; Liu et al., 2021; Renneboog & Vansteenkiste, 2019; Shah, 2019). Further, companies have leveraged M&As to reduce risk by incorporating new technologies and proven products, lowering taxes, and gaining access to capital (Horwitz et al., 2002; Renneboog & Vansteenkiste, 2019).

M&As result in the substantial transfer of value for both parties involved. According to the Institute for Mergers, Acquisitions, and Alliances, in 2022, there were nearly 50,000 M&As worldwide with a value of $3.4 trillion. This was down from 2021 when nearly 58,000 M&As worldwide were valued at 5.2 trillion (*M&A Statistics*, 2023).

While M&As have proven to be a powerful vehicle to drive company growth, innovation, and strategy, many of these deals fail, rendering their benefits void. The literature is strewn with examples of M&A deals that have failed to meet

expectations. Deals such as HP and Compaq, Daimler and Chrysler, AOL and Time Warner, Quaker and Snapple, AT&T and NCR, Ford and Jaguar, Land Rover and Ford, and Monsanto and Bayer are but a few examples of M&A deals that fell short of expectations (Fiorentino & Garzella, 2015; Krishana, 2017; Lewis & McKone, 2016; Warter & Warter, 2017; R. A. Weber & Camerer, 2003).

The literature varies as to the percentage of M&As that fail. Still, the literature is consistent in showing that the number of failures is greater than half, with studies reporting failures from 66% (Shah, 2019), 50-83% (Rottig et al., 2014), 65-75% (Deutsch & West, 2010), 56-77% (Carleton & Stevens, 2004), 80% (Lee, 1997), and 75% (DiGeorgio, 2002; Marks & Mirvis, 2001). These failures result in the destruction of shareholder value as judged by company stock performance and divestment of acquired companies (Porter, 1989; Zweig, 1995).

M&As are complicated transactions with many factors contributing to their success or failure. According to Calipha & Brock (2019, p. 13), factors include "strategic motives, type and/or degree of diversification, selection criteria (such as price and strategic fit), acquisition experience, management involved in the process (such as human resources, operating managers, and key staff), culture, the difference in size, [and] organizational structure."

While there are many contributors to the successes and failures of M&As, this study focuses on the human factor of company culture that contributes to M&A failure. This is because the lack of cultural fit between the acquirer and target has

been identified as a cause of failure and, in some cases, the leading cause (Aon Hewitt, 2011; Bruner, 2005; Doukas & Zhang, 2021; Shah, 2019; Walker & Price, 2000).

Cultural fit must be considered and managed throughout the phases of the M&A. Kendrick (2022) describes the stages of the M&A as target screening, due diligence, integration planning, integration, and value capture. Rebner & Yeganeh (2019) enumerate three "combination phases" of M&A: pre-combination, legal combination, and post-combination. Finally, Kiessling et al. (2021, p. 3) list the "decision-making" processes of an M&A as "strategy formulation, target identification, due diligence, pricing of the acquisition, post-acquisition integration, and subsequent performance." For this study, we have collapsed these disparate definitions of the stages of the M&A into three phases: the premerger, integration, and value capture stages. The study focused primarily on cultural measures during the premerger phase and the effects of the depth of specific cultural aspects on behaviors during the integration phase.

During the premerger phase, management must determine how best to manage the cultural integration of the acquired company. Marks & Mirvis (2011) provide these options for acculturation:

> Cultural pluralism, in which the partners coexist; Cultural integration, in which the partner companies blend current cultures together; Cultural assimilation, in which one company absorbs the other; and Cultural

> transformation, in which the partner companies abandon key elements of their current cultures and adopt new values and norms. (p. 863)

For this study, we will examine the effects of cultural change when the acquired is involved in cultural integration, assimilation, or transformation.

During the integration phase, the acquired company finds itself on a spectrum of possible behaviors in response to the change (Judson, 1991). This spectrum runs from enthusiastic acceptance to active resistance with behaviors ranging from slowing down work to sabotage. Judson's continuum was later expanded by Coetsee (1999) to begin with apathy and extend further to include aggressive resistance. The proposed study aims to measure the effect of premerger cultural factors on the active and aggressive resistance of the acquired.

The integration phase of the M&A is important because it is the most complex and vital component of M&A success (Rodríguez-Sánchez et al., 2019). Charman (1999) has suggested that 80% of M&A integration phases are improperly managed, and Datta (1991) suggests that proper integration management is required for company synergies to be realized. Proper management during this period is crucial in ensuring that productivity is maintained (Gates, 2000).

The study of active resistance is of interest because the opposition to the merging of cultures of the acquired and parent companies is a leading cause of failure and lack of performance in M&As (Appelbaum et al., 2007b, 2007a; Buono & Bowditch, 1989; Okafor, 2019). This active resistance can take many forms,

including negative attitudes, cultural conflict, power struggles, and loss of talent (Holland & Scullion, 2021). Perhaps worst, the acquired can see the parent company as the enemy, further thwarting cultural integration (E. Schein, 1980).

This study set the active resistance of the acquired in the framework of Hirschman's (1970) work on Exit, Voice, and Loyalty and the subsequent work of Rusbult et al. (1982) and Farrell (1983) in their addition and expansion of neglect in the model (hereafter referred to as EVLN). Further, the study considered the effect of Kotter & Schlesinger's (1979) methods for managing resistance as treatments to the active resistance brought about by cultural change.

Finally, the study defined the term "Organizational Cultural Entrenchment" (OCE) in the context of active resistance and a "digging in" mentality of the acquired during the integration phase of an M&A through the perceptions of individuals in merged and acquired firms. The research yielded practical knowledge of this OCE, and why M&A practitioners must have an awareness of factors that lead to the phenomena so that they can be more informed of how to manage OCE, to drive to successful company integrations.

Background and Rationale of the Study

Company culture has long been the subject of study. Researchers have sought to leverage academic findings to solve the conflicts that stymie progress. Change literature is rich with concepts such as Lewin's three-step change model from 1951, Lewin's force-field analysis theory from 1958, Tichy and Devanna's

three acts of transformation, Kotter's eight-steps of change, Schein's work on organizational culture and change, and Hofstede's work on cultural distance (Cummings et al., 2016; Lewin & Gold, 1999).

Behavioral literature also exists to study the downstream effects of M&As and the effects on personnel and their behavior. Hirschman, Judson, Farrell, and Hannan are but a few researchers who have studied change and its effects on organizations (Farrell, 1983; Hannan & Freeman, 1984; Hirschman, 1970; Judson, 1991).

The field of M&As and change management has spilled over into an entire industry of consultants and coaches who strive to bring academia and personal experience to aid companies in transition and crisis. Organizations like McKinsey Consulting, Dennison Consulting, Human Synergistics International, and the Barrett Values Centre are just a handful of the many groups working with companies to manage change and the resistance thereof (S. Morrison, 2015).

With the vast amount of culture, change management, and organizational behavior literature available, along with the multitude of consultants standing ready to help companies through change, it would seem that the failure rate in M&As would be lower. However, the literature from the last 40-50 years indicates a consistently high failure rate. This study considered a small subset of the factors besetting these companies, the actively destructive behaviors that contribute to failures, the cultural antecedents of the acquired company associated with these

failures, and possible treatments to mitigate the effects of actively destructive behaviors.

Statement of the Problem

Companies leverage mergers and acquisitions as a tool for growth. However, the success of M&As is often stymied by cultural integration issues. These integration issues are often amplified by actively destructive behaviors within the personnel of the acquired company. Despite the vast number of studies on M&A cultural integration, little research has been done to target the specific cultural antecedents to this active resistance. Identifying cultural factors in the acquired company that are highly correlated with active resistance can help introduce mitigation treatments to reduce resistance and lead to greater success in cultural integration, yielding fewer M&A failures.

Purpose of the Study

The purpose of this quantitative study has been to determine a set of premerger cultural factors within acquired companies that lead to actively destructive behaviors during the integration phase of an M&A. Further, this study intended to explore treatments to examine their effects as moderators of the behaviors of change resistance.

This study extends the literature in the area of M&As, culture, and change resistance through the following actions:

1. Developing the concept of Organizational Cultural Entrenchment (OCE) as a lens to view the cultural antecedents that lead to actively destructive behaviors triggered by change
2. Identifying factors of culture in the acquired that lead to OCE
3. Extending Hirschman's Exit, Voice, Loyalty framework to examine active and destructive behaviors resulting from OCE
4. Validating Kotter's methods of managing change resistance as moderators
5. Providing a framework for future study of OCE

Questions that Guide the Research

The following questions guided the research within this study:

RQ 1 - What is organizational cultural entrenchment (OCE)?

RQ 2 - What premerger or acquisition cultural factors contribute to the phenomenon of OCE?

RQ 3 - What are the organizational behaviors resultant from OCE that contribute to actively destructive voice (ADV) in the merged with or acquired company?

RQ 4 - What change resistance mitigation (CRM) treatments can be applied before and during the integration phase of an M&A to reduce the effect of OCE on ADV?

RQ 5 – Does coercion of employees by leadership change the relationship

between OCE and ADV when applied during the premerger or integration phase of an M&A?

RQ 6 – How does increased OCE in a premerger or acquisition company affect the amount of ADV behaviors in the integration phase of the M&A?

RQ 7 – What effect do CRM treatments have on the relationship between OCE and ADV? Can these treatments lower ADV in the merged with or acquired company?

Definition of Terms

Acculturation: "Culture change which results from continuous, first-hand contact between two distinct cultural groups" (Redfield et al., 1936, p.1)

Acculturation Stress*:* "A reduction in health status (including psychological, somatic and social aspects) of individuals who are undergoing acculturation, and for which there is evidence that these health phenomena are related systematically to acculturation phenomena" (Berry et al., 1987, p. 491)

Acquisition: "Activities by which acquiring firms can control more than 50% of the equity of target firms" (Piesse et al., 2006, p. 541)

Asperity (Related to structural inertia): A level of cultural restrictiveness that "determines the normative restrictiveness on certain architectural features." Used to describe a culture that excludes new possibilities.
(M. T. Hannan et al., 2003b, p. 405).

(Organizational) Culture:

- "A pattern of shared basic assumptions learned by a group as it solved its problems of external adaptation and internal integration, which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems" (E. H. Schein, 2010, p. 18).
- "The collective programming of the mind that distinguishes the members of one group or category of people from another" (Hofstede, 2001, p. 9).
- "The set of important understandings (often unstated) that members of a community share in common.'' (Sathe, 1983, p. 6).
- "The part of the stock of knowledge that is shared by a substantial portion of the employees of the firm, but not by the general population from which they are drawn" (Cremer, 1993, p. 354).
- "The shared beliefs, values, and technology of an organization" (Lazear, 1995, p. 90).
- "A common stock of knowledge" within organizations (Cremer, 1993, p. 4).

***Culture Clash*:** "Differences in values, rules, norms, and/or expectations between the two legacy companies (includes differences in work-life balance culture)" (Grotto & Andreassi, 2022, p. 451)

Cultural Entrenchment: (See definition of Organizational Cultural Entrenchment in the literature review)

Culture Shock: "the unexpected and often negative reaction of people to new environments" (Furnham, 2019, p. 1832)

Exit (in the context of Exit, Voice, Loyalty, or Neglect): to leave the organization (Hirschman, 1970)

External Locus of Control: The belief that events are the result of some action that is not entirely contingent on one's actions that are perceived to be the result of "luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding them." (Rotter, 1966, p. 1)

Internal Locus of Control: The belief that events are contingent upon one's own behavior or "relatively permanent characteristics" (Rotter, 1966, p. 1)

Job Insecurity: "Concern about the future existence or permanence of one's job, the perception or expectation of a potential threat to job continuity or lack of control in maintaining desired continuity in a job situation" (Grotto & Andreassi, 2022, p. 452)

Lack of Communication/Information: "Insufficient communication or information from teammates in one's immediate work group or teammates from other teams/units/department with which one works closely" (Grotto & Andreassi, 2022, p. 452)

Locus of Control: "the extent to which people believe that they have control over their own fate" (Ng et al., 2006, p. 1057)

***Loyalty (in the context of Exit, Voice, Loyalty, or Neglect)*:** A force that "holds exit at bay and activates voice" (Hirschman, 1970, p. 78)

Merger: The situation whereby "at least two firms are combined with each other to form a 'new' legal entity" (Piesse et al., 2006, p. 541)

Merger Syndrome: The state that exists when employees "go through a culture shock, reduced job performance, resistance to change, job insecurity, and general feelings of anger and fear" (Chesley, 2020, p. 448)

Neglect (in the context of Exit, Voice, Loyalty, or Neglect): *"*Passively allowing conditions to deteriorate through reduced interest or effort, chronic lateness or absenteeism, lack of effort leading to errors."
(Dowding & John, 2012, p. 58)

Organizational Cultural Entrenchment: (See definition of Organizational Cultural Entrenchment in Chapter 2: Literature Review)

Path Dependency: The phenomenon where "sub-optimal or inefficient technologies can become locked in as industry standards, and in instances where there are significant network effects, these inefficiencies may persist for extended periods of time" (Stack, 2003, p. 487)

Psychological Ownership: "the feeling of possessiveness and of being psychologically tied to an object" (Pierce et al., 2001, p. 299)

Role Ambiguity: "A lack of necessary information for an organizational position or inadequate information to perform a job" (Grotto & Andreassi, 2022, p. 452)

Structural Inertia: "Persistent organizational resistance to changing architecture (given expected costs and benefits of changes)." It "predicts that an organization will encounter resistance if it attempts to change core features; it also implies that changes in core features likely have detrimental consequences." (Hannan et al., 2002, p. 26, 2004, p. 214)

Territoriality: an individual's behavioral expression of his or her feelings of ownership toward a physical or social object (G. Brown, 2005, p. 2)

Threat Rigidity: "A general tendency for individuals, groups, and organizations to behave rigidly in threatening situations." This behavior is characterized by two effects, a "restriction of information processing," and a "constriction in control." (Staw et al., 1981, p. 502)

Uncertainty Avoidance: "the extent to which the members of a culture feel threatened by uncertain or unknown situations" (Hofstede, 2001, p. 161)

Voice (in the context of Exit, Voice, Loyalty, or Neglect): "an attempt at changing the practices, policies, and outputs of the firm [to] which one … belongs. Voice is here defined as any attempt at all to change, rather than to escape from, an objectionable state of affairs, whether through individual or collective petition to the management directly in charge, through appeal to a higher authority with the intention of forcing a change in management, or through various types of

actions and protests, including those that are meant to mobilize public opinion" (Hirschman, 1970, p. 30)

Significance of Study

Given some 50,000 M&As worldwide in 2022 with a value of $3.4 trillion, any study leading to improved M&A outcomes would be significant (*M&A Statistics*, 2023). However, when the value of these M&As is coupled with their 50+% failure rate (Carleton & Stevens, 2004; Deutsch & West, 2010; DiGeorgio, 2002; Lee, 1997; Marks & Mirvis, 2001; Rottig et al., 2014; Shah, 2019), there is a significant opportunity to improve returns by applying insights from scholarly study. Improving outcomes of cultural integration, a significant cause of failure in M&As, is worthy of focus because even a small improvement in this factor of integration can have a significant, multiplying effect. This effect will greatly interest executives, shareholders, employees, M&A organizations, and consultants.

This study has been based on decades of research and literature on M&As, culture, and resistance to change. The findings of this study have extended extant literature by focusing on the antecedents of aggressive resistance. Further, the study has explored mitigation treatments for these behaviors.

The study's academic significance is found in extending the work of Lewin, Kotter, Schein, Hofstede, Hannan, Staw, and Harris. The research brings the work of these authors in concert to explore the phenomena of existing culture that yields

the most active, aggressive, and destructive behaviors during the cultural integration period of an M&A.

Finally, this study provides insight into cultural factors acquired companies exhibit that lead to active resistance. It also provides a framework for future research with other aspects of culture by exploring the lived experiences of those who have been through a merger or acquisition.

Organization of the Remainder of the Study

The remainder of this study will consist of four chapters.

Chapter 2 provides an extensive literature review to discuss extant literature on company culture, M&A pressures on culture, factors of active resistance to change, and treatments to mitigate the effects of change.

Chapter 3 outlines the methodology of the quantitative study and describes the population, sample, instrument, and techniques with which the study was executed.

Chapter 4 provides details of the study findings with a discussion of the population sample, data gathering techniques, and pilot and full study results. The chapter concludes with an evaluation of the study hypotheses in light of the quantitative findings.

Chapter 5 concludes the paper with a discussion of the implications of the research findings. Recommendations for practice and recommendations to extend this research are given.

Chapter 2: Literature Review

Overview

In their work on literature review preparation, Boote & Beile (2005) emphasize the need for a thorough examination of all extant literature to advance the collective understanding of a subject. The review should also be a vehicle to extend the scholarship of others in the present work (Shulman, 1999).

To this end, this chapter contains a thorough literature review of the salient subjects of this study. While thorough, the literature review targets works relevant to this study, with a parsimonious view, binding prior works to the logic chain and concepts herein (Krathwohl & Smith, 2005; Maxwell, 2006). Literature relating to factors of organizational culture and behavior, as well as treatments for managing change and acculturation, are discussed. This review synthesizes these prior works into a coherent structure such that a new perspective can be gained between the antecedents of culture that lead to actively resistive behaviors (Hart, 1998).

Organization of the Remainder of the Chapter

This literature review begins by reiterating the questions that guide the research. Then, prior works on culture will be discussed generally, citing seminal works of research that have been formative to the field. This will set the stage for a discussion of organizational cultural entrenchment, which will include usages of

the term in multiple fields of study and how it will be applied in this study as a descriptor for the behavior under examination.

The review will then turn to the specific cultural factors which will be studied as antecedents to organizational cultural entrenchment. Hirschman, Rusbult, and Farrell's work on EVLN will be investigated, followed by an examination of threat rigidity and resistance to change. Finally, this will lead to a discussion of Kotter and Schlesinger's treatments for managing change.

The chapter will culminate with a conceptual model depicting the relationship between the factors, literature, and hypotheses.

Questions that Guide the Research

In his book on qualitative research design, Maxwell (2013) indicates that research questions are the heart of research design and the center of goals. Research questions inform the conceptual framework, methods, and validity. As such, the following research questions will guide and be central to the review of literature for this study:

RQ 1 - What is organizational cultural entrenchment (OCE)?

RQ 2 - What premerger or acquisition cultural factors contribute to the phenomenon of OCE?

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RQ 7 – What effect do CRM treatments have on the relationship between OCE and ADV? Can these treatments lower ADV in the merged with or acquired company?

The Setting of Culture and Organizational Change

This study is anchored within the seminal works of organizational change literature. Results from this research join the stream of literature with the works of authors like Lewin, with his unfreezing, moving, freezing and force-field models (Burnes & Cooke, 2012; Cummings et al., 2016; Lewin & Gold, 1999), Kotter with his methods for managing resistance and 8-steps of change model (Kotter, 1995; Kotter & Schlesinger, 1979), Schein and his extension of Lewin (E. H. Schein, 2017), and Judson with his continuum of change acceptance (Judson, 1991).

Conceptual Development and Hypotheses

This study is comprised of three second-order factors: an independent variable of OCE, a dependent variable of ADV, and a moderating component of CRM. Further, the model measures COR as a first-order moderator between OCE and ADV. Each of these factors and the literature surrounding them are discussed in detail in this section.

Organizational Cultural Entrenchment

Definition

A search of the business and organizational literature finds few references to the term *Cultural Entrenchment*. However, the term can be found broadly within existing academic literature. Still, the uses of the term in these other works yields a poor fit to the organizational cultural entrenchment considered in this study.

The term has been used in the business of forestry management to describe a methodology of "maintaining a previous policy regime" (E. C. Kelly, 2014, p. 11). The term has been leveraged in the political realm to mean "lock-in" and "consolidation" in the face of pressures to change (Starr, 2019, p. 2). It has also been used to describe political situations where rigidity leads to territoriality, risk aversion, and lack of innovation (Heales, 2018; Madigan, 2016). It has been used to describe how Pashtun cultures resist change (Zalmay, 2012). Interestingly, the term has also been used to describe how folklore and fairytales are encoded into the language over time (Karsdorp & Fonteyn, 2019).

One of the most applicable treatments of cultural entrenchment outside the business realm comes from Coultis (2011, p. 35) in his work on military insurgency operations. In speaking of cultures rife with insurgency, he found that "culture has an inertial tendency to resist external pressures for change." He discussed that reactions to changes internally initiated within a group tend to be more measured when addressed via negotiation. He also found that "radical or sudden" external challenges to culture are met with resistance that he defined as "cultural entrenchment." He discovered that this cultural entrenchment was the cause of the "fracture" of given groups and was a trigger for "dramatic social upheaval."

Harris (1999, p. 119) sought to determine the effect of "entrenched cultural values" on management's drive to initiate proactive planning. He defined cultural entrenchment as "the extent to which the culture of an organization is firmly established and widely held."

The term "Cultural Entrenchment" or "Entrenchment of Culture" yields few salient results in the extant literature, particularly business literature. Therefore, for this study, we have employed the definitions of Harris, Coultis, Zalmay, Kelly, Madigan, Heales, Starr, and Karsdorp & Fonteyn to synthesize a single, concise definition of cultural entrenchment, adding the qualifier *organizational* to clarify the context. Table 1 below shows the definitions given in this existing literature. Note that the researcher has added all emphasis in bold or italics.

Table 1

Cultural Entrenchment Definitions From Literature

Author	Context	Excerpt/Definition (Emphasis from Researcher)
Harris, 1999	Entrenched Cultural Values	"For the purposes of this article, 'cultural entrenchment' refers to the extent to which the culture of an organization is ***firmly established and widely held***. As such, cultural entrenchment can be viewed as akin to that which previous researchers have labelled cultural '***strength'***, '***psychological penetration***' and '***thickness'"*** (Harris, 1999, p. 119).
Coultis, 2011	Military Counter-Insurgency	"the implication is that culture has an ***inertial*** tendency to resist external pressures for change, a phenomenon that is referred to in this article as 'cultural entrenchment'" (Coultis, 2011, p. 35).
		"This article explores the significance of culture and presents an argument for the concept of cultural entrenchment—the ability of a culture to ***resist external influences*** acting as an agent of dramatic change" (Coultis, 2011, p. 37).
Zalmay, 2012	Pashtun Culture	"It is understandable that every culture, like the Pashtuns, has an inertial tendency to ***resist external pressure for change***, a phenomenon some analysts call 'cultural entrenchment'" (Zalmay, 2012, p. 1).
Kelly, 2014	Forestry Management	"This paper uses the term cultural entrenchment to describe the use of cultural capital in order to ***maintain a previous policy*** regime" (Kelly, 2014, p. 11).
Madigan, 2016	Northern Irish Conflict	"***Rigid***, exclusive and often ***highly territorial*** understandings of the past directly fuelled the violence that erupted so catastrophically in 1969 and the polarisation and cultural entrenchment that would mark the next few decades" (Madigan, 2016, p. 1).
Heales, 2018	Healthcare	"Policy makers too can suffer from cultural entrenchment. Changes to policy carry risks both to the public and to political capital. This can ***create risk aversion*** and ***create embedded cultures*** that make innovation difficult" (Heales, 2018, p. 185).
Starr, 2019	Democratic Societies/Politics	"Entrenchment, like the closely related terms "lock-in" and "consolidation," can refer to any process whereby an institution, a technology, a group, or a

		cultural form—any kind of social formation—becomes ***resistant to pressures for change***" (Starr, 2019, p. 2).
		From Chapter Five, "Entrenching Progressive Change," Starr says, "Entrenchment, as I've suggested earlier, ***rather than being a form of stasis***, should be understood as involving two kinds of constraints—***limiting*** the ***reversibility*** of earlier decisions and channeling change in particular directions" (Starr, 2019, p. 140). Also, "rolling back any public program is likely to ***threaten*** its beneficiaries and ***therefore have political costs***" (Starr, 2019, p. 176)
Karsdorp & Fonteyn, 2019	Encoded Language	"the actual as well as the assumed/expected ***knowledge shared*** between individuals in a cultural community" (Karsdorp & Fonteyn, 2019, p. 2).

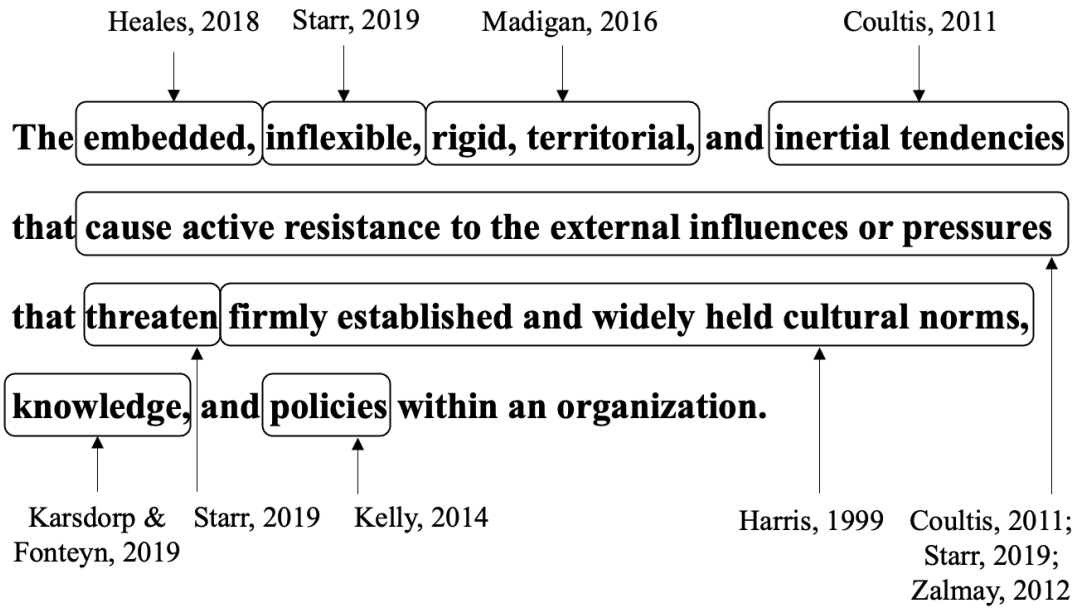
Given and guided by the definitions of cultural entrenchment found across contexts in the extant literature shown in Table 1, we adopt this synthesized definition of organizational cultural entrenchment.

> ***Organizational Cultural Entrenchment*:** The embedded, inflexible, rigid, territorial, and inertial tendencies that cause active resistance to the external influences or pressures that threaten firmly established and widely held cultural norms, knowledge, and policies within an organization.

Figure 1 illustrates this new definition of OCE with the association of each element to its source.

Figure 1

Extant Literature Influences on the Definition of Organizational Cultural Entrenchment

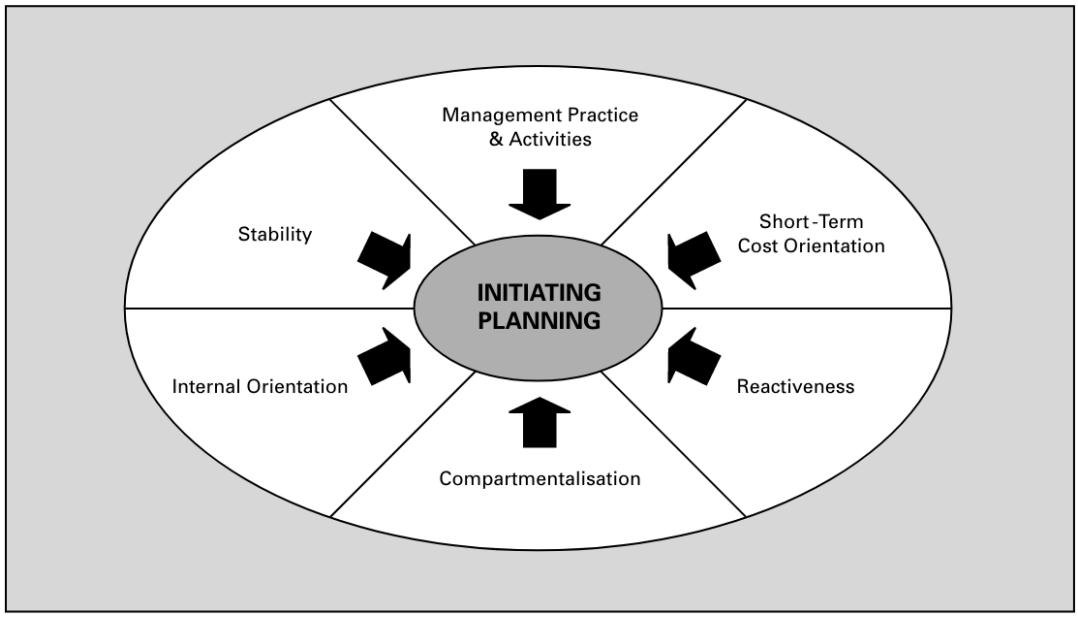


Harris' Factors

Harris' qualitative study consisted of interviews to understand which cultural factors led to entrenchment that reduced planning. Through his gathering of individual perceptions during interviews, he found six cultural values that he attributed to the organization that were associated with entrenchment that hindered planning. These values are reactiveness, management activities and practices, compartmentalization, short-term cost orientation, internal orientation, and stability.

Figure 2

Harris' "Entrenched Cultural Values" diagram (Harris, 1999)



This study leveraged the six values discovered by Harris' study as a framework from which to quantitatively examine cultural entrenchment. The study paired each value with a contemporary analog as a proxy for each factor. To ensure fidelity to the findings and intentions of Harris, Table 2 lists quotes from Harris' work, mapping it to salient literature for the proxy factor used in this study.

Table 2

Mapping of Harris' Six "Entrenched Cultural Values" to Proxy Factors

Six "Entrenched Cultural Values" (Harris, 1999) (Emphasis from Researcher)	**Proxy Factors For This Study**
Stability	Structural Inertia
"strongly held view in favour of ***maintaining the status quo***"	"Social scientists have increasingly recognized that ***organizations*** tend to ***resist efforts to transform*** them and attempts to do so can lead to deleterious consequences" (Hannan et al., 2004, p. 213).
"need for ***organizational stability as opposed to change***"	"a persistent organizational ***resistance to changing architecture***" (Hannan et al., 2004, p. 214).
"***unwillingness to change***"	
"things are ***too shaky to start taking risks***."	
Employees feel that "***slow change is*** akin to methodical and ***correct*** decision-making."	"we postulate that ***cultural resistance slows processes of change***" (Hannan et al., 2003a, p. 415).
"***shy away from change*** and merely ***aim for stability***" "planning was pointless since the ***process*** would ultimately ***involve disruption and potential instability***"	"attempting radical structural change often threatens legitimacy; the loss of institutional support may be devastating" (Hannan & Freeman, 1984, p. 2).
Internal Orientation (Groups had an external outlook to internal company matters)	External Locus of Control

Harris found that the participants in his study looked to external issues within the company as impediments to planning. Examples of these outward looking attitudes from Harris' study are shown here: Personnel attributed "reductions in performance figures … to increased store-level staff costs." [Problems of initiating planning] "are to be *found* via *intra-company* analysis (such as examining and cutting costs)" "Top management developed the view that the problem lay with an over-staffed Head Office"	"When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as ***unpredictable because of the great complexity of the forces surrounding him***" (Rotter, 1966, p. 1). "Locus of control describes the extent to which individuals believe that ***rewards or failures*** in life are contingent upon their own actions or are ***controlled by external forces"*** (Nießen et al., 2022, p. 2)**.** "Externals feel ***powerless to control*** their successes or failures" (Stocks et al., 2012, p. 19).
Short-Term (Cost) Orientation ➡	Uncertainty Avoidance
"Indeed, a low-cost orientation is valued so highly that even Senior Head Office Managers argue that starting ***planning would be pointless*** since ***they already know their most important objective*** (cutting costs)."	"The assumption is that individuals who try to avoid uncertainty will take the necessary steps to ***reduce ambiguity***. This will be especially pertinent when information is needed to make decisions" (Simeon, 2000, p. 49).
"The majority of employees contend that ***future success*** is reliant upon a combination of ***careful*** procurement,	"Uncertainty Avoidance is not the same as risk avoidance; it deals with a society's ***tolerance for ambiguity***. It indicates to what

overhead reduction and waste ***control rather than upon the satisfaction of the needs, wants and demands of the market***."	extent a culture programs its members to feel either uncomfortable or comfortable in unstructured situations" (Hofstede, 2011, p. 10).
"managers often ***emphasising the need to 'watch the costs'*** or to increase the ***margins*** of the business"	"Uncertainty avoidance in culture is the degree to which people … ***prefer structured over unstructured situations"*** (Drogendijk & Slangen, 2006, p. 363).
"In retail ***it's all about margin***, margin, margin." [Researcher note: This quote noted as a fixation on a single, unambiguous, controllable item.]	
Employees "argue that the survival and ***future success*** of the company is ***dependent upon*** the saving of costs and the ***improvements of margins*** through cost cutting."	
Compartmentalization ⇨	Territoriality
"Throughout the organizational hierarchy, employees ***intentionally compartmentalise*** their jobs in an effort ***to defend their respective roles"***	There is a "general human tendency to believe knowledge is a limited ***resource*** that ***should be hidden"*** (Singh, 2019, p. 10).
"It is widely believed that employees ought to focus on their own particular task or job, and ***transgressions into the defined role of other equal-ranked employees are viewed as trespassing***."	"Knowledge hiding is an intentional attempt by a person to ***withhold or conceal job-related knowledge from coworkers*** who ask for it" (Singh, 2019, p. 10).
"employees ***focus on narrow tasks*** and roles with ***few employees considering***	"Territoriality tends to be preventative (e.g., ***marking territory***, using anticipatory

wider issues or the company as a whole"	defenses to ***prevent infringement***, and reactionary defenses to prevent future infringements), ***rather than promoting the good of the work group"*** (Avey et al., 2009, p. 176).
"the entrenched view that the ***roles of personnel should be narrowly delineated and compartmentalised*** is impeding the initiation of planning"	
Management Activities and Practices (Authoritarianism) ➡	Leadership Style, as measured by Authoritarianism
"Employees frequently contend that managers should be ***authoritarian"***	This management style "is characterized by ***firm control*** of group activities with all decisions being made by the leader. It is highly influenced by the leader's power within the organization. The leader ***makes all the decisions*** … there is little or no input from organizational members" (Katsaros et al., 2020, p. 4). "A***uthoritarian*** leaders were characterized by ***giving orders*** for members to follow" (Peterson, 1997, p. 1108).
Managers should "adopt a particularly ***'hands-on' management style"***	
"When long-serving Head Office employees were asked to describe 'good' managers they consistently described ***authoritarian*** managers."	
"someone who ***isn't afraid to make decisions"***	Authoritarian ***leaders provide "'clear directions*** and expectations regarding compliance with instructions' (Sanchez-Manzanares et al. 2020: 840). After that, they tend to centralize decisions and ***limit subordinates' opportunities to express their opinions*** (Yun et al. 2005)" (Pizzolitto et al., 2022, p. 4; Sanchez-Manzanares et al., 2020; Yun et al., 2005).
"worse type of manager than the type that ***needs to discuss every little decision*** with everyone"	

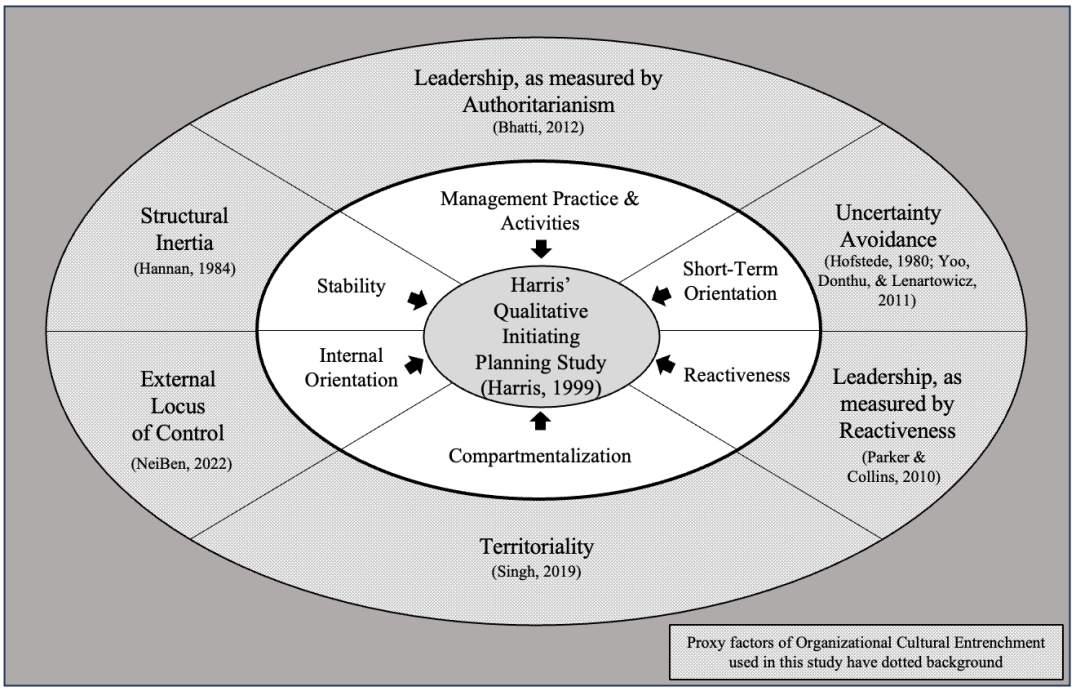
Reactiveness ➡	Leadership Style, as measured by Reactiveness
"many employees consider ***reactive decisions more appropriate than proactive*** planning"	Proactivity, as a solution to reactiveness: "***Problem prevention***, acting to prevent the reoccurrence of challenges and barriers to work, has been identified as an ***important proactive behavior"*** (Parker & Collins, 2010, p. 635).
"Employees view their role as one of 'fire-fighting' or '***reacting***'"	**"Reactive** leadership and **crisis management** have been synonymous for years. This **flows from the belief that crisis is unpredictable and unexpected**, which is simply not true. ***Crisis has its genesis in the values, beliefs, culture, or behavior of an organization*** which become incongruent with the milieu in which the organization operates" (Prewitt & Weil, 2014, p. 72).
"The widespread entrenched view that reactiveness is the most appropriate stance for decision-making has clearly impeded planning initiation. Head office personnel consistently argue that ***the company is better off responding to events*** and that the recently started formalised ***planning is unwise given the demands of current environmental conditions."***	Ali argues that reactive organizations respond to events on demand by "***ignoring external stakeholders*** and ***only react[ing] to [events] or recogniz[ing] them when they start to affect the bottom line*** of the firm" (Ali, 2018, p. 408).

As to strategic planning, "many managers are ***unable to see any advantage in a more proactive stance*** and sincerely ***argue that a more proactive stance is unfeasible***"	***Proactivity, as a solution to reactiveness:*** Strategic scanning involves "proactively ***surveying the organization's environment*** to identify ways to ensure a fit between the organization and its environment, such as ***identifying ways the organization might respond*** to emerging markets" (Parker & Collins, 2010, p. 637).

Figure 3 extends that of Harris with the proxy factors considered as contributors to organizational cultural entrenchment in this study.

Figure 3

Extension of Harris' "entrenched cultural values" diagram with proxy factors



This study extended Harris' qualitative work on cultural entrenchment with a quantitative study, leveraging the six proxy factors mapped from his original entrenched cultural values. These six proxy factors will now be discussed in detail.

Structural Inertia

Harris found that the desire for stability was a factor that led to entrenched cultural values. As defined by his qualitative findings, stability was characterized by maintaining the status quo, opposition to change, and risk aversion. These qualities closely align with those described by Hannan and others in their research on structural inertia.

The theory of structural inertia originated in Hannan and Freeman's 1984 work entitled “Structural Inertia and Organizational Change” (Hannan & Freeman, 1984). In this work, the authors’ theory predicts that an organization will encounter resistance if it attempts to change core features. Further, the work found an implication that these attempts at change would likely result in detrimental consequences.

When considering an acquired company or a company undergoing a merger, especially where the acquired is to join with the acquirer's culture, there is the danger that this resistive asperity could lead to a number of these negative consequences. One such negative consequence could be an attempt for the acquired to hold to their prior culture by growing a subculture isolated from the acquiring organization. Their resistance could be to hold to their prior culture by holding onto their “local knowledge,” resisting encroachment by the acquiring company (A. L. Stinchcombe, 1990, p. 81).

This resistance can lead to lock-in, formed by a strong path dependency that relies on the structures, processes, and norms of the past. This lock-in may result in inefficiencies, slowing the evolution of the acquired into the culture of the acquirer (David, 1985; Stack, 2003; Valentinov & Nedoborovsky, 2005).

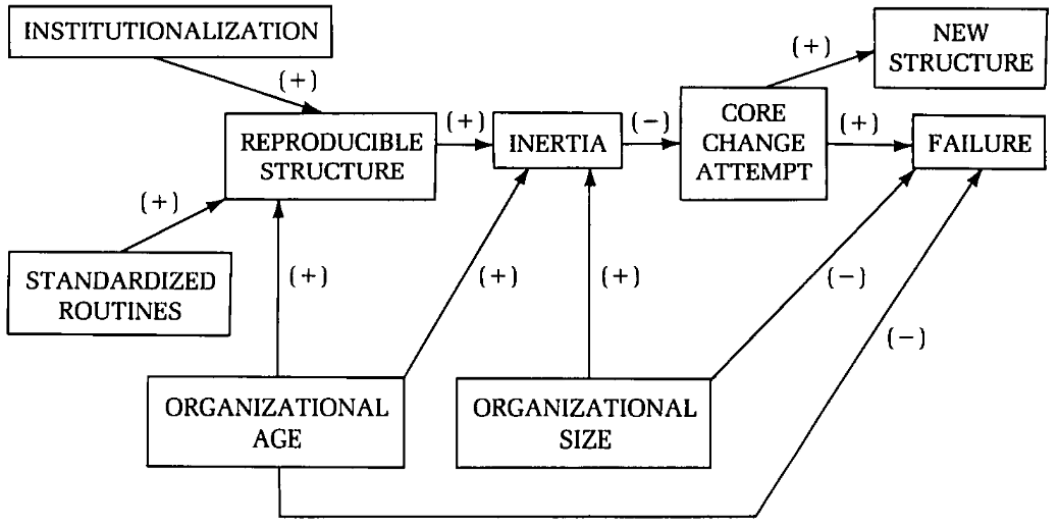
Hannan et al. describe other forms of resistance that may result in the acquired company. Along with withholding information, organizations under duress from change have been known to restrict different possibilities of

architecting their organization, forming a reaction against the organizational change (Hannan et al., 2003b). Further, the "liability of newness" of the newly formed relationship with the acquirer has been shown to reduce performance (Hannan & Freeman, 1984, p. 157). These negative consequences are precursors to the negative consequences discussed later as threat rigidity and resistance to change.

Interestingly, because a firm of significant size and age will have had time to formalize processes and norms, the size and age of the firm influence the amount of structural inertia. Makins et al. (2012) describe negative behaviors arising from change, positing that these behaviors are amplified in larger organizations. This mirrors Hannan and Freeman's assertion that size and age contribute to inertia in their 1984 work. This acknowledgment of inertial amplification via size and age was also reported in the work of Stinchcombe (1965). See Figure 4 for a visual depiction of how age and size have been shown as moderators of inertia (D. Kelly & Amburgey, 1991).

Figure 4

Kelly and Amburgey's Basic View of Structural Inertia Theory (1991)



Because the inertial forces of an organization shape culture, and these forces have been shown to lead to negative consequences, the following hypothesis is offered:

H1a: There is a positive relationship between the cultural factor of structural inertia and organizational cultural entrenchment.

External Locus of Control

Harris describes the behavior of personnel in his study as having an external orientation. The external orientation Harris describes indicates that those in his study looked at the corporation at large for explanations for events occurring in their individual company units. Also, descriptions of employee behavior show that individuals and groups had a propensity to look outside of themselves or their group to the larger company for antecedents to events that would occur. Harris'

subjects suggested that the answers to their problems were to be found via an analysis of the company at large and that reductions in performance were not based on any internal characteristics or issues, but rather were because of "increased store-level staff costs." Performance decline was also attributed to "an over-staffed Head Office," rather than concerns within each store within Harris' study (Harris, 1999, p. 122).

An analog from theory that coincides closely with Harris' subjects' external orientation is the locus of control, particularly the external locus of control. Rotter (1966, p. 1) defined this external locus of control as one's belief that events are not "entirely contingent upon [their] action [and are] typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because … of the forces surrounding [them]." This mindset leads the individual or group with an external focus to believe that all rewards or failures are external in origin (Nießen et al., 2022).

Extant literature on external locus of control shows that an external locus of control results in an attitude of resignation, causing the externally focused to not see a relationship between their behavior and outcomes. This makes these personnel less responsive to external reinforcement and more anxious when confronted with external influence (Ng et al., 2006; Spector, 1982). This anxiety may result in resistance to any external influence that attempts to modify the environment and can be manifest as psychological reactance that causes a shift

away from an attempt to influence the environment (Biondo & MacDonald, 1971). This resistance to a change in environment due to an external locus of control leads to our next hypothesis:

H1b: There is a positive relationship between the cultural factor of external locus of control and organizational cultural entrenchment.

Uncertainty Avoidance

Harris' qualitative study of entrenchment found a significant focus on controlling costs in the short term in the group being studied. Short-term cost control and protection of profit margins were consistently emphasized over long-term strategic planning. The uncertainty of future markets and cost modifiers introduced an ambiguity that was very uncomfortable for those in Harris' study. This need to avoid ambiguity and cling to well-known structures and roles leads to the use of Hofstede's uncertainty avoidance as an analog to the group's short-term, culturally-entrenched thinking (Harris, 1999; G. Hofstede, 2011).

Uncertainty avoidance is not risk mitigation; instead, it is a desire to minimize the feelings of threat caused by ambiguity and unstructured situations. Hofstede defined these unstructured situations as "novel, unknown, surprising, and different from usual" (Hofstede, 2011, p. 10; Hutzfeld, 2019). When ambiguity is allowed to continue in a culture where uncertainty is not tolerated, literature shows that stress, lack of judgment, and inter-relational issues result. Ultimately, the business dynamics may be affected (Appelbaum et al., 2007b).

Against the headwinds of change, amplified by cultural shock and clash, people and organizations will strive to avoid uncertainty by taking steps to avoid ambiguity by imposing structure to stabilize the environment (McGrath et al., 1992; Simeon, 2000). It is hypothesized that this desire to eliminate ambiguity and its resultant acculturation stress by imposing structure is a critical component of organizational cultural entrenchment, leading to the following hypothesis:

H1c: There is a positive relationship between the cultural factor of uncertainty avoidance and organizational cultural entrenchment.

Territoriality

Territoriality is a construct that began as a study of physical space and has since expanded into a discussion of human behaviors (Edney, 1975; Hall, 1959). Where studies in the past focused more on physical objects, more recent studies have delved into topics of human control and the active and passive social behaviors exhibited by people in their efforts to influence other people, spaces, and ideas (G. Brown, 2005; Edney, 1975).

In discussing psychological ownership and its effect on territoriality, Pierce et al. (2001) discussed several objects for which people may feel psychological ownership. These objects of ownership were described as their work (Beaglehole, 1932), their organization (Dirks et al., 1996), the products they create (Das, 1993), their jobs (Peters & Austin, 1985), and issues within their organization (Pratt & Dutton, 2000). This feeling of ownership can cause negative organizational

behaviors when ownership is threatened, affecting performance and increasing deviant behaviors (Connelly et al., 2019; Škerlavaj et al., 2018).

Territoriality is a broadening of the definition of psychological ownership, defined as possessiveness and attachment to an object (Pierce et al., 2001). It is seen as the actions (as behavioral expressions) that are taken beyond psychologically owning an object to the maintenance of the relationship to that "physical or social object" (G. Brown, 2005, p. 578). Territoriality is associated with a defensive and preventative posture, where the desire to avoid infringement on one's territory is seen as an objective that is primary to that of the work of the organization (Avey et al., 2009; Lyman & Scott, 1967). This infringement leads to a reactionary posture, focusing on the restoration of territory (G. Brown, 2005).

Of particular interest to cultural merging in the wake of a merger or acquisition, knowledge-hiding has been shown to be a pervasively negative behavior resulting from territoriality (Connelly et al., 2012; Singh, 2019). This knowledge-hiding leads to a defense of what is considered a valued territory (Silva de Garcia et al., 2022). This withholding of information is a resistant behavior consistent with our definition of organizational cultural entrenchment.

Because the feeling of infringement caused by territoriality leads to an actively defensive posture, it is hypothesized that territoriality is positively related to cultural entrenchment, based on the resistant feelings toward external influences in our definition of organizational cultural entrenchment.

H1d: There is a positive relationship between the cultural factor of territoriality and organizational cultural entrenchment.

Leadership Style

In aggregate, the style of leadership described by Harris has hallmarks of transactional leadership via passive management by exception and contingent reward (Bass, 1985; Bass et al., 2003; Burns, 2003). Further, some behaviors observed could be seen as autocratic, as leaders tended to shut subordinates out of decision-making processes (Bhatti et al., 2012). Ultimately, the proxies chosen as most representative of the behaviors described are authoritarianism and reactiveness. Harris' study does not delve deeply into these factors. However, the notion of defining the work to be done with little input from subordinates, as well as passively responding to external stimuli and crises, were hallmarks of the subject of his study.

The current study did not seek to define the exact aggregate leadership style experienced by those personnel in Harris' study, as the goal is to measure the combined effect of authoritarian and reactive leadership on the latent factor of OCE. The study measured these leadership styles independently but found that they load together as a single factor.

These two styles of leadership will be discussed next in support of the following hypothesis:

H1e: There is a positive relationship between authoritarian and reactive leadership styles and organizational cultural entrenchment.

Authoritarianism

Harris' study described leadership traits that were authoritarian in nature. This style of management is characterized as one that dictates the organizational direction and requires compliance of followers (Chen et al., 2014; Schaubroeck et al., 2017), is critical of group members, withholds praise (Peterson, 1997), and is demanding (Chiang et al., 2021).

This leadership style is generally seen as negative and paternalistic in Western companies as these companies prefer a more open and democratic organizational form (Chen et al., 2014). However, literature shows that some employees support this style because it relegates all decision-making authority to leadership. Further, some employees prefer this style as they contribute less to the organization's work while waiting for clear direction from the authoritarian leader before initiating work (Schaubroeck et al., 2017).

The authoritative management style is also one that leads to adverse outcomes. This style can lead to reduced trust and morale (Chen et al., 2014; Joshi & Jha, 2017), a lack of stability (J. Zhang et al., 2015), and stifled innovation (Akkaya, 2020; Katsaros et al., 2020). Further, this style and its negative consequences can increase resistance to organizational changes (Joshi & Jha, 2017).

Reactiveness

Reactive and crisis management styles are rooted in the organization's culture and flow from the values and beliefs of the organization's members (Prewitt & Weil, 2014, p. 72). This management-by-exception, firefighting, crisis management form of leadership instills a sense of short-term thinking and fear in the members of the group, leading to a toxic culture with a high perception of threat, instability, and information opacity (Arandas et al., 2022; Rybacki & Cook, 2016; van Eeden et al., 2008). Further, this leadership style is of limited value as it is only slightly effective at best and slightly ineffective at worst, with a laissez-faire style of reactive management shown to uniformly be "negatively correlated with outcomes" (Bass, 1999, p. 21).

Reactiveness within the culture leads to a view that tends only to include external resources when there is an increased risk of organizational failure or loss of control (Ali, 2018; Goff, 2003). This reactive and fear-motivated management stifles group emotional and cognitive commitment, leading to a more transactional intra and inter-group culture (Barber & Warn, 2005; Bass et al., 2003).

The transactional leadership style has been found to cause frustration and job stress and to negatively influence intent to stay with the organization. It encourages collusion between followers and leaders in perpetuating the situation (Rybacki & Cook, 2016, p. 2). This style is also perpetuated by the politics that so often surround this reactive leadership style (Ram & Prabhakar, 2010, p. 48). Further,

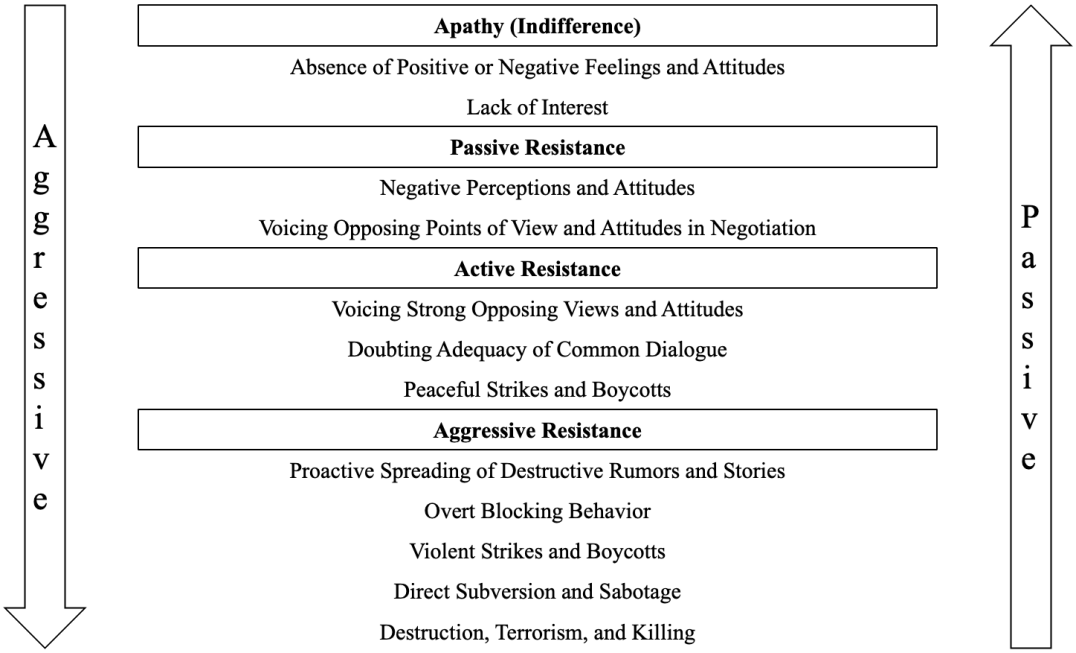
transactional leadership associated with reactiveness results in a performance-oriented exchange and culture that seeks to support the status quo (Bass, 1998; Vidic & Burton, 2011, p. 290).

Actively Destructive Voice

This study was concerned with the variability of employees' actively destructive voice in the wake of a merger or acquisition based on the level of OCE within the premerger or acquisition organization. The researcher's notion of a continuum of voice originates in Judson's Continuum of Resistance (Judson, 1991) and later with the expansion of the continuum to extend to aggressive resistance by Coetsee (1999). This measure of resistance includes a resistance component of variable voice. Coetsee's expansion of Judson's continuum is shown in Figure 5.

Figure 5

Coetsee's (1999) Expansion of Judson's (1991) Continuum of Resistance



The measure of aggression or passivity of behaviors of voice within this study was operationalized utilizing Hirschman's Exit, Voice, and Loyalty Framework, which Rusbult and Farrell later expanded to include the concept of Neglect.

Hirschman, Rusbult, and Farrell's Exit, Voice, Loyalty, Neglect Framework

The researcher proposed that the deleterious effects of OCE are seen later in the integration phase of the acquisition or merger within the acquired company. These downstream effects may be manifest in a variety of ways. However, for the sake of this study, the adverse effects resulting from threat rigidity and resistance to

change were considered. These well-studied factors were couched in the form of voice within Hirschman's Exit, Voice, Loyalty framework.

Hirschman's (1970) seminal work on Exit, Voice, and the mediator of Loyalty (EVL) described possible scenarios that members of an organization might take in response to a negative environmental change. He said members could exit or leave the organization to protest the negative situation. He also discussed that members could utilize a variety of behaviors as voice to raise concerns and try to affect positive organizational change without leaving. His work described the member's loyalty to the organization as a mediator that would affect whether and to what extent that member might utilize voice.

Later works by Rusbult and Farrell added a fourth component to the EVL framework: Neglect (EVLN). In her work on human relationships, Rusbult added neglect as a factor where the behavior of one in a relationship might withdraw, passively reacting to negative relational situations (Rusbult, 1980; Rusbult et al., 1982). Farrell took this concept further, utilizing the concept of neglect to encompass those passive behaviors that a member of an organization might use to withdraw from the organization without actually exiting or leaving the group. Farrell's study added a multidimensional scale model to visualize the active/passive and constructive/destructive behaviors that arise from behaviors within an organization (Farrell, 1983).

The EVLN component of voice is considered a tactic used when prior satisfaction with the firm was high and the employee has a high internal locus of control (Withey & Cooper, 1989). This could partially explain the extension of voice by those previously satisfied with the firm before the merger or acquisition.

Hirschman's use of voice was later extended by Dowding & John (2012) when they coined the term "noisy exiter" to describe one who negatively utilizes voice before, ultimately, leaving the organization. This study does not consider the noisy exiter, but rather the one who utilizes their voice in an actively destructive manner, with no intention of leaving the organization.

The work of Hirschman and Farrell largely sees voice as a positive alternative to exit while "sticking with the deteriorating firm" (Dowding & John, 2012, p. 59; Hirschman, 1970, p. 39). However, Hirschman did concede that voice could become "harassing" to the point of "negative returns" (p. 30). This place of negativity is described in Farrell's model as the locus of active and destructive behavior and was the focus of outcome behaviors of this study. Therefore, this behavior leads to the following hypothesis:

H4: There is a positive relationship between organizational cultural entrenchment and the behaviors of actively destructive voice.

Within the context of voice, there are many possible negative behaviors to consider after a merger or acquisition. However, for the scope of this study, negative behaviors caused by turbulent change, as discussed by McCann & Selsky

(2012), were considered. These negative behaviors are 1) restricting information processing and 2) constricting control due to threat rigidity. Also, the study considered the negative voice of vocal criticality and the support thereof within the resistance to change. These will now be discussed, in turn.

Threat Rigidity

Staw et al. described threat rigidity as a concept that describes "a maladaptive tendency in reacting to adversity" Staw et al. (1981, p. 501). This reactive state tends to lead to withdrawal behaviors and the closing off of introducing more information, ambiguity, and uncertainty (McCann & Selsky, 2012, p. 46). In their study, Staw's team sought to learn how threats and adversity affect the adaptability of organizations.

Within Staw's study, the researchers focused on two concepts germane to the current research on the effect of OCE on actively destructive voice during the perceived threats that arise during a merger or acquisition. These two concepts are 1) a restriction of information processing and 2) a constriction in control.

In a company that has been acquired, the integration phase is characterized by uncertainty and loss of control (Xue, 2022). In a culture undergoing integration with a parent company where there is a perception of loss of control, there is a high likelihood that the organization will fall back on familiar routines, standard operating procedures, and ways of understanding (Chattopadhyay et al., 2001; Ocasio, 1993; Sarkar & Osiyevskyy, 2018; Starbuck et al., 1978). This reversion to

the familiar leads to a restriction in information processing that ultimately reduces alternatives for the acquired company. This form of information rigidity is a behavior that hinders the integration of the acquired company, contributing to a potential loss of value (Kreiser et al., 2020).

Along with the restriction of information, companies under the perception of threat tend to constrict decision-making to the leader or expert centralized power due to the threat of losing control (George et al., 2006; Muurlink et al., 2012; Xue, 2022). This constriction can be manifest by limiting decision-making to a small group, usually pushing this control to higher levels within the organization (Hermann, 1963). Further, this behavior leads to decision-making based on preconceived judgments, short-term fixes, and micro-management (Daly et al., 2011). In an acquired company, this restriction can lead to organizational paralysis and a loss of entrepreneurial behaviors (George et al., 2006; Kreiser et al., 2020).

These active responses to the threat of cultural change make the restriction of information and the constriction of control actively destructive behaviors of voice within the acquired company during a merger or acquisition process. This leads to the following hypothesis:

H2a: There is a positive relationship between the factor of threat rigidity and actively destructive voice.

Resistance to Change

The resistance to change literature is vast, tracing back to the work of Lewin's unfreezing, moving, freezing model and covering many antecedents of resistance with as many treatments (Lewin & Gold, 1999). The positive and negative effects of leadership, organizational citizenship behavior, openness, adaptability, personality, perceived organizational support, organizational justice, affective commitment, leader-member exchange, and culture are but a few of these topics of study pertaining to the causes and treatments of resistance (Appelbaum et al., 2015; Beal et al., 2013; Lines, 2004; McKay et al., 2013; Rehman et al., 2021; Wanberg & Banas, 2000). Regardless of the factors leading to resistance, it is a natural response to change that is to be expected (Bovey & Hede, 2001).

This expected resistance to change is not always manifest as a negative result. On the contrary, resistance can indicate that employees have proper intentions and are voicing concerns about matters important to the company (Giangreco & Peccei, 2005). Further, this resistance can be mediated by employee ambivalence as the employees process their own conflicting views of the change (Arkowitz, 2002; Klonek et al., 2014, p. 336). The employees' use of voice is often a barometer of their engagement and consideration of the process undergoing change (Ford et al., 2008; Piderit, 2000).

While resistance to change can be the result of proper employee intentions, it can also induce stress that leads to less job satisfaction, more irritation, stronger

intentions to quit, somatic and psychosomatic issues, as well as irrational fears (Bovey & Hede, 2001, p. 372; Rafferty & Jimmieson, 2017; Wanberg & Banas, 2000). These irrational fears are highly correlated to resistance to change and are partly predicated on the inability to control one's destiny (Bovey & Hede, 2001).

Kotter & Schlesinger (1979) listed the four most common reasons that people resist change as "parochial self-interest, misunderstanding and lack of trust, different assessments [of the impact of the change than management or others], and a low tolerance for change." Later, Oreg (2003) described six sources of resistance he had identified. The list of these sources is as follows:

> (a) reluctance to lose control, (b) cognitive rigidity, (c) lack of psychological resilience, (d) intolerance to the adjustment period involved in change, (e) preference for low levels of stimulation and novelty, and (f) reluctance to give up old habits. (p. 680)

Within the study of cultural change and conflict resulting from a merger or acquisition, perhaps all these reasons for resistance come into play, leading to the following hypothesis:

> H2b: There is a positive relationship between the factor of resistance to change and actively destructive voice.

This study has been most interested in those resistive behaviors that are both active in voice and destructive in nature. The research considered the negative voice of vocal criticality toward the acquisition or merger and the support of this behavior

in others as the resistance to change factor. These negative behaviors were measured as a part of the study by Giangreco & Peccei (2005) and were also included in this study.

Farrell's Active/Passive, Constructive/Destructive Multidimensional Scale Model

The discussion of Farrell's (1983) Multidimensional Scale Model provides a visual depiction of where particular behaviors of resistance (in terms of exit, voice, loyalty, or neglect) lie within a two-dimensional scale of active to passive and constructive to destructive behaviors. Farrell added items to his instrument where participants placed specific behaviors on these two continuums to determine if they were considered more active or passive and whether they were also more constructive or destructive. Interestingly, Farrell's behaviors of voice (Suggest, Talk, Write) fell in the constructive portion of the graph. However, this research proposes that the behaviors of voice in this current study would fall in the active and destructive quadrant of the graph, as shown in

Figure 6, due to the negative results of threat rigidity and resistance to change previously discussed. This leads to the following hypotheses:

H2c: The voice behavior of restriction of information processing will fall within the active and destructive quadrant of a multidimensional scale of active/passive and constructive/destructive behavior.

H2d: The voice behavior of constriction in control will fall within the active and destructive quadrant of a multidimensional scale of active/passive

and constructive/destructive behavior.

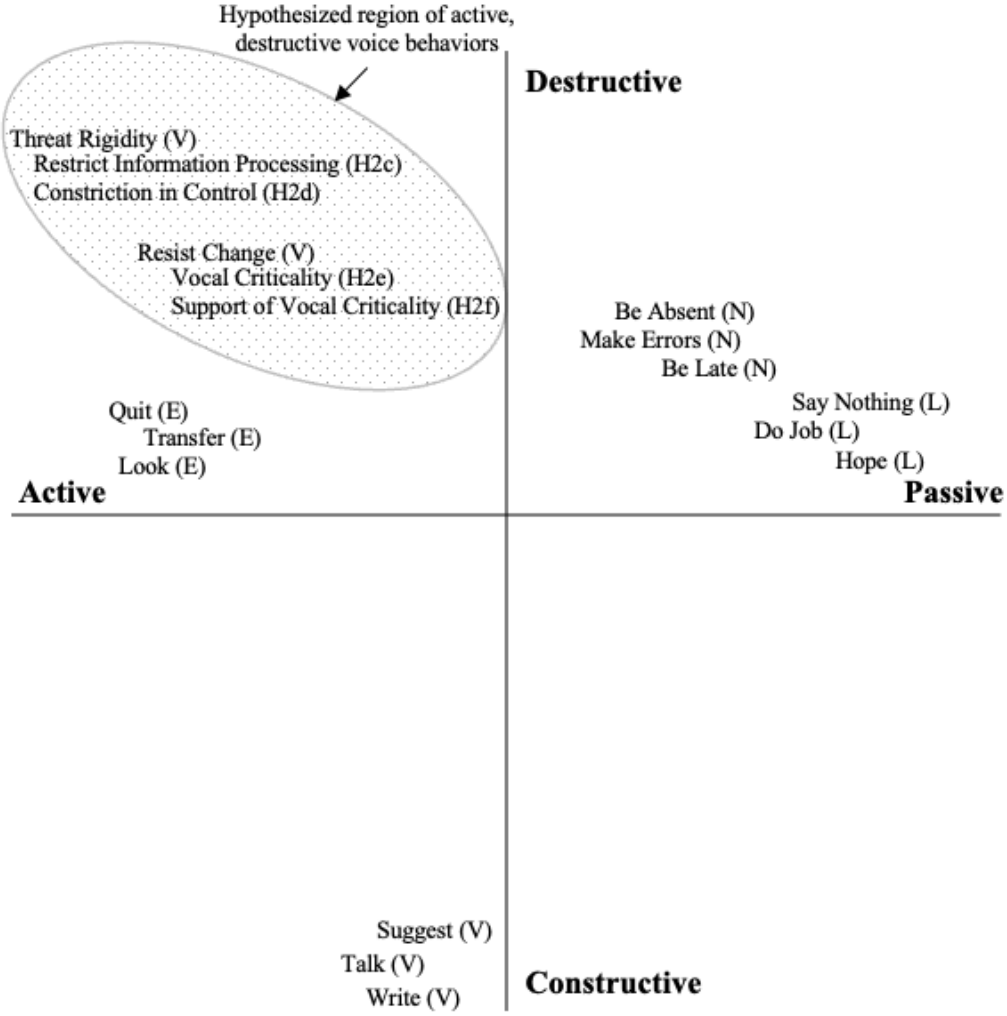
H2e: The voice behavior of vocal criticality will fall within the active and destructive quadrant of a multidimensional scale of active/passive and constructive/destructive behavior.

H2f: The voice behavior of support of vocal criticality will fall within the active and destructive quadrant of a multidimensional scale of active/passive and constructive/destructive behavior.

Note that these hypotheses are related but are not required to satisfy the research questions of this study. Therefore, the extension of Farrell's study through the evaluation of these hypotheses will be proposed for future research and are presented here to contextualize the behaviors of ADV within Farrell's work.

Figure 6

Adaptation of Farrell's (1983) "MDSCAL Configuration of Responses to Job Dissatisfaction and Four Vectors Representing Attribute Ratings" diagram with hypothesized voice in the Active, Destructive quadrant



Factors that Moderate the Impact of Organizational Cultural Entrenchment

We have defined and discussed the concept of organizational cultural entrenchment, the factors of Harris' 1999 study that lead to the entrenched state, and how the environment of an acquired or merged company may accelerate behaviors leading to this entrenched state. Further, we have discussed the EVLN framework developed by Hirschman and extended by Rusbult and Farrell. Within this EVLN context, the connection of OCE to the employee's ADV was described.

Now, we turn to a discussion of Kotter and Schlesinger's seminal Harvard Business Review paper from 1979, which discusses strategies for managing change (Kotter & Schlesinger, 1979). In this paper, Kotter and Schlesinger suggested that managers "underestimate the variety of ways they can positively influence specific individuals and groups during a change" (p. 5). Then, they listed five methods for dealing with resistance: communication, participation, facilitation, negotiation, and coercion.

The first four methods, communication, participation, facilitation, and negotiation, logically group as change resistance mitigation (CRM) treatments to reduce actively destructive voice. The last method, coercion, stands alone as a moderator due to its influence in increasing the effect of ADV. These methods will now be discussed within their respective contexts.

Change Resistance Mitigation

The factors of CRM are comprised of two distinct latent factors: psychological and physical contract renegotiation. The first CRM category is psychological contract renegotiation. Mitigation treatments through this latent factor are measured by observations of communication, participation, and facilitation between employer and employees during change. These are key to moving from the premerger or acquisition psychological relationship with the prior company to a new psychological relationship with the new parent company. The second CRM category is physical contract renegotiation, which is necessary to renegotiate changes to the tangible factors of wages, benefits, and other concrete forms of employee remuneration between the prior company and the new parent company.

We will now discuss the CRM factors of psychological and physical contract renegotiation in detail in support of the following hypothesis:

H5: There is a negative relationship between change resistance mitigation and the behaviors of actively destructive voice.

Psychological Contract Renegotiation

The psychological contract refers to an "individual's beliefs regarding the terms and conditions of a reciprocal exchange agreement between the focal person and another party" (Rousseau, 1989, p. 123). The main consideration of this contract is the promise of exchange that binds the parties within this agreement.

The psychological contract is comprised of subjective and reciprocal components. The contract is subjective in that it is based on the employee's perception of employer promises and the expectations thereof. These contracts are broader than formal employment agreements because of their socially constructed nature and their daily interpretation and reinterpretation by employees (Millward & Brewerton, 1999; Searle & Ball, 2004; Sels et al., 2004). The contract is also reciprocal in that employees have an impression of mutuality and shared obligation that they expect to be honored (Sels et al., 2004).

Psychological contracts have been shown to play an important part in strengthening organizational commitment and work engagement (Herrera & De Las Heras-Rosas, 2021; Soares & Mosquera, 2019). However, when employees perceive that the promises of the contract are not being met, a breach of contract is experienced. This breach, when emotionally realized, escalates to a full contractual violation that may lead to a variety of deleterious effects, including exit from the company, often preceded by feelings of anger and betrayal, a reduction in citizenship behavior, lower task performance, theft, and work withdrawal (Conway & Briner, 2009; Coyle-Shapiro et al., 2019; Robbins & Judge, 2013). In extreme cases, contract violations may lead to revenge, retaliation, sabotage, or other aggressively negative behaviors (E. Morrison & Robinson, 1997; Yang et al., 2020).

M&As are an acute source of change where psychological contracts with the merged with or acquired company may result in perceptions of contract breach and violation. As a result, great care must be given in the renegotiation of employee psychological contracts in the context of the newly formed parent entity. Employees and employers must perform a psychological contract renegotiation, building from perceptions of the newly-created company while striving to preserve as much of the prior contract as possible (Akhtar & Long, 2015; Baruch & Hind, 1999; Shield et al., 2002).

To minimize feelings of incongruity, breach, and violation of the old psychological contract, Kotter and Schlesinger's CRM treatments of communication, participation, and facilitation (Kotter & Schlesinger, 1979) must be brought to bear. These will provide a vehicle for employees in which they may voice concerns, participate in the strategy of the merger, align with the expectations of the newly-formed entity, and form coping mechanisms while adjusting their expectations and contractual perceptions of the newly-formed entity (Bari et al., 2016; Shield et al., 2002; Turnley & Feldman, 1998; Young et al., 2018).

The treatments of communications, participation, and facilitation are key to mitigating the negative behaviors brought on by changes due to M&A, leading to the following hypothesis:

H3a: There is a positive relationship between psychological contract renegotiation and its incumbent treatments of communication, participation, and participation with the factor of change resistance mitigation.

Communication, participation, and facilitation will now be considered, in turn, as methods to mitigate the effect of change while facilitating psychological contract renegotiation.

Communication

The first resistance mitigation method mentioned by Kotter and Schlesinger was effective communication, which suggested that proper communication helps employees see the need for change (Bansal & King, 2022; Kotter & Schlesinger, 1979). This assertion has been corroborated throughout the literature, connecting communication during a merger, acquisition, or change event to better overall performance (Bansal & King, 2022; Buono & Bowditch, 1989, pp. 109, 168, 196; Kotter & Schlesinger, 1979; McKay et al., 2013; Y. Weber & Tarba, 2012; Zhang et al., 2015).

Conversely, literature has shown that a lack of communication during a change event leads to fear, uncertainty, a feeling of threat, and general resistance to change (Amiot et al., 2006; Larsson & Finkelstein, 1999; Seo & Hill, 2005). These outcomes resonate with the theme of uncertainty avoidance from cultural entrenchment and threat rigidity from active and destructive voice. Fortunately,

communication reduces uncertainty and increases commitment to the newly formed organization in the post-merger integration phase (Allatta & Singh, 2011; Angwin et al., 2016). Further, proper communication has been shown to improve employee perceptions of fair treatment in the change (Ambrose & Schminke, 2009; Seo & Hill, 2005; Stouten et al., 2018).

Notably, the communication given during the premerger or acquisition phase or immediately afterward must be timely to be most effective. While Kotter and Schlesinger describe communication as time-consuming, there is agreement that messaging about the change must be given in a timely manner to avoid detrimental effects (Elving, 2005).

Participation

In his 1954 Harvard Business Review article on collaborative leadership, Lawrence had the following to say about participation:

> Real participation is based on respect. And respect is not acquired by just trying; it is acquired when the staff man faces the reality that he needs the contributions of the operating people. (Lawrence, 1954, p. 56)

It was this mutual respect that Kotter and Schlesinger next considered in their methods for mitigating resistance. In the context of organizational change, they defined participation as involving employees resistant to some aspect of the change. Some examples of employee participation in change are listening to employee suggestions and taking their advice, sharing decision-making,

collaborating in planning, consultation, and stimulating feedback (Furst & Cable, 2008; Lawrence, 1954; Lines, 2004; Wanberg & Banas, 2000).

Literature shows that the benefits of encouraging employee participation in organizational change lead to reduced uncertainty and psychological strain (Bordia et al., 2003), greater engagement during the change, more clarity of direction (Lines, 2004), better levels of task commitment and "perceptions of managerial effectiveness" (Furst & Cable, 2008, p. 455), greater trust in management (Giangreco & Peccei, 2005), higher levels of openness to change (Wanberg & Banas, 2000, p. 132), and a general reduction to resistance to the change (Giangreco & Peccei, 2005; Kellogg, 2009; Lines, 2004; Vos & Rupert, 2018). These benefits lend themselves to less rigidity through openness and a general reduction in resistance to change, thus moderating the potentially actively destructive voice hypothesized to arise in a culturally entrenched group during a post-merger or acquisition integration phase.

Facilitation

Kotter and Schlesinger described facilitation and support in their methods of reducing resistance to change. Facilitation involves listening to employee concerns, offering emotional support, and providing training to overcome challenges to new roles and responsibilities (Erwin & Garman, 2010; Heuvel & Schalk, 2009; Kotter & Schlesinger, 1979; Rehman et al., 2021).

The literature supports Kotter and Schlesinger's claims that proper support will reduce resistance behaviors. Studies show that resistance responses are mitigated when management fulfills its promises to employees, builds trust (Heuvel & Schalk, 2009), and provides high-quality supervisor relationships (Erwin & Garman, 2010). Above and beyond a mitigation response, Rehman et al. (2021) found that employees who are supported will reciprocate this support in kind. Additionally, Mallinckrodt & Fretz (1988) found that support can lead to higher levels of mental health.

Physical Contract Renegotiation

Kotter and Schlesinger suggested that negotiation of the incentives provided to employees is an excellent tactic to reduce negative behaviors in the resistance to change. They suggested that this method could be especially effective for employees or groups that have the most to lose due to organizational change yet have significant power to resist (Kotter & Schlesinger, 1979). This group includes middle management and leaders who generally take on more burdens in the wake of a merger or acquisition (Clayton et al., 2009).

Physical incentives are effective in improving outcomes and take the form of financial incentives such as higher wages, bonuses, or increases in pension benefits for early retirement (Chaudhuri & Tabrizi, 1999; Cooke & Huang, 2011; Kotter & Schlesinger, 1979; Ranft & Lord, 2002). Renegotiating these incentives through increases in pay and benefits has been shown to reduce turnover in the wake of an

M&A, build trust in the parent organization, energize workers, produce championing behaviors, and ensure commitment to the newly formed entity (Castro-Casal et al., 2013; Clayton et al., 2009; Cunliffe, 2021; Stahl et al., 2011).

Because physical contract renegotiation has been shown to mitigate the resistance to change, the following hypothesis is offered:

H3b: There is a positive relationship between the factor of physical contract renegotiation and change resistance mitigation.

Coercion

Kotter and Schlesinger list coercion last on their list of methods to reduce change resistance. This heavy-handed approach to managing resistance includes direct interventions, such as the threat of job loss, reduction in promotion opportunities, or transfer, and can be effective in reducing change resistance when the threat of reprisal is seen as credible (Kotter & Schlesinger, 1979; Rivard & Lapointe, 2012; Tormala & Petty, 2004; Wathen & Burkell, 2002). Coercion may be most effective when all other resistance mitigation methods are exhausted and time is restricted (Alhezzani, 2020; Chavan & Bhattacharya, 2022).

However, Hirschman (1970) warns that while coercion will reduce resistance and exit, it leaves those manipulated with only one option to express their displeasure, through a negative voice. This is echoed by the findings of Szabla (2007, p. 535) in his study on change leadership strategies, where he found that

"force and oppression by those in power cause those with less power to resist change."

Because coercion is effective in limiting resistance yet leads to negative voice, the following hypothesis is offered:

H6: There is a positive relationship between the factor of coercion and actively destructive voice.

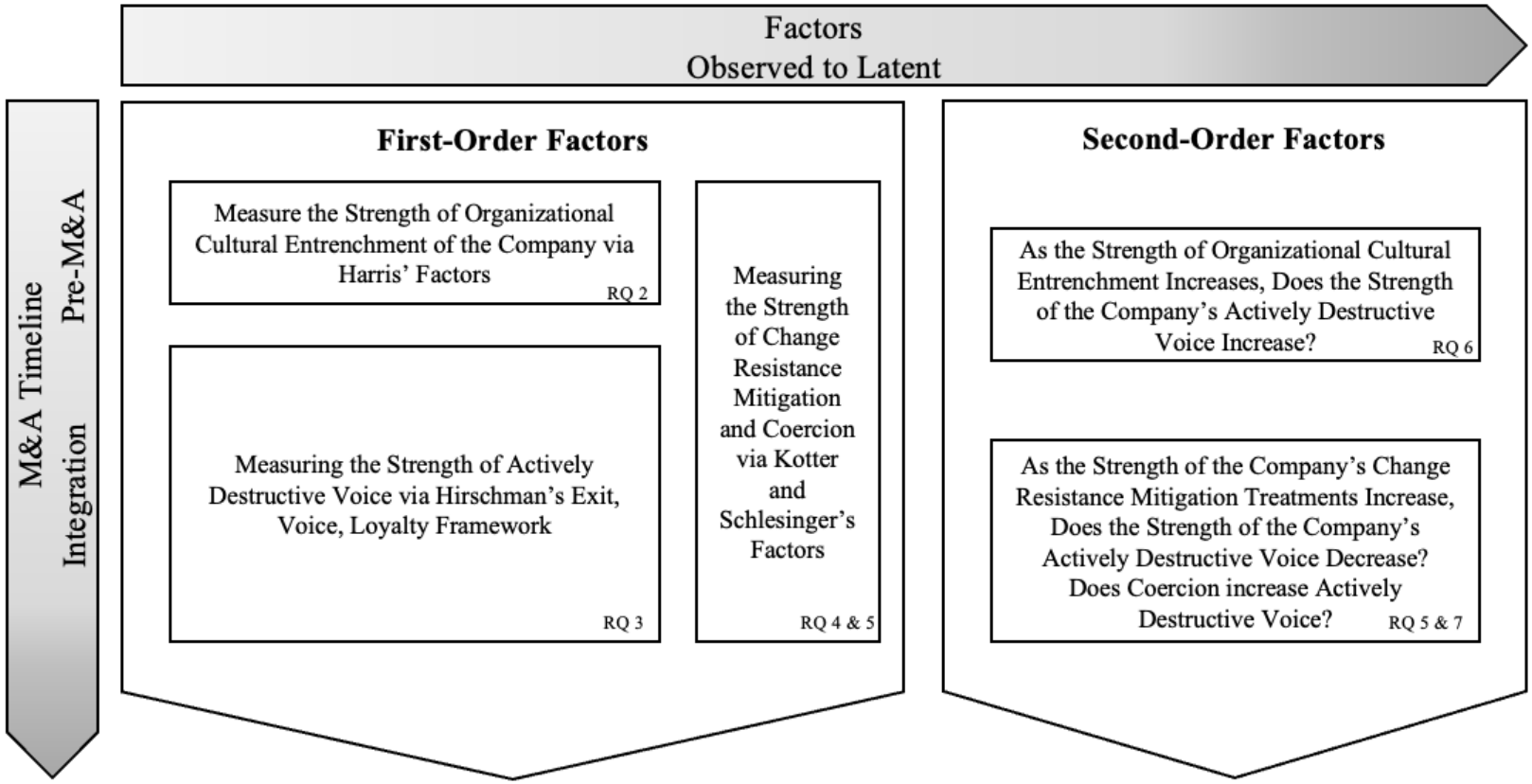
Conceptual Model

The extant literature explored in this chapter has provided sufficient scholarly support for the study in pursuit of answers to the research questions posed. In the unveiling of the conceptual model of this work, the model in Figure 7 places the research questions in a temporal view, demonstrating at which point the questions become relevant to the research and thus guiding the survey instrument prompts that have been constructed in the methodology discussion.

The company timeline shows the premerger or acquisition phase, followed by the integration phase. The model is then revealed as a first- and second-order model, with RQs 2, 3, 4, and 5 answered as first-order, followed by questions 5, 6, and 7 as second-order.

Figure 7

Research Question Model



The simplified conceptual research model in Figure 8 operationalizes the research questions via variable and relationship constructs. The research questions lead to three significant variables that have been explored in this research, followed by two relationships. The first of these variables is the independent variable of OCE. The dependent variable of ADV follows it. Then, the moderating variables of CRM treatments and COR are examined.

As described in the literature, the independent variable of OCE comprises five first-order factors: structural inertia, external locus of control, uncertainty avoidance, territoriality, and leadership style (as measured by authoritarianism and reactiveness). The factors load on the second-order factor of OCE.

The dependent variable of ADV is comprised of two first-order factors: threat-rigidity and resistance to change. These two factors load onto the second-order factor of ADV.

The moderating variable of CRM has two first-order factors. These are psychological contract renegotiation (as measured by communication, participation, and facilitation) and physical contract renegotiation (as measured by negotiation). These factors load on the second-order factor of CRM.

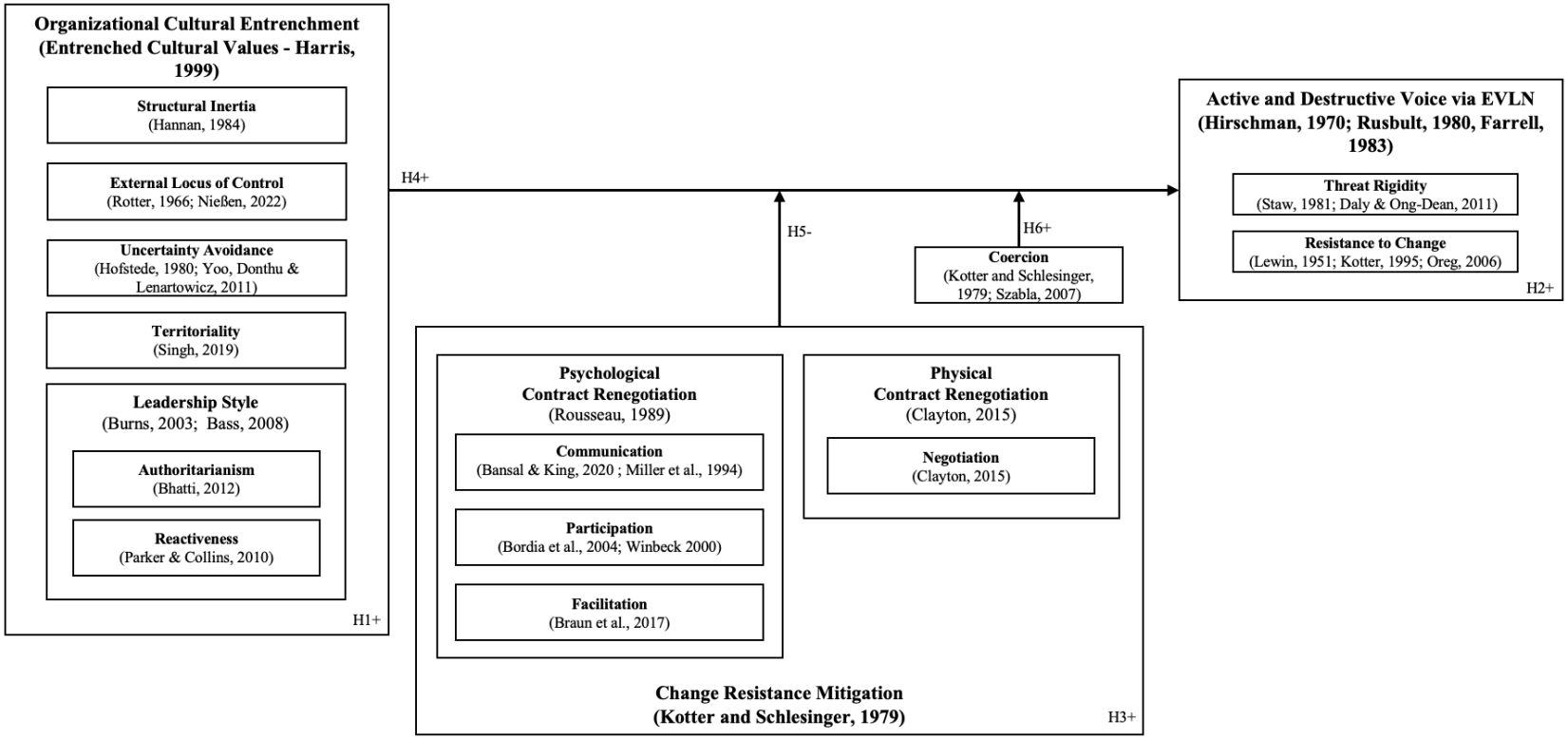
The moderating variable of COR is measured by the effect of coercion. This first-order factor will stand alone as a moderator between OCE and ADV.

The model posits three relationships between the inner factors. First, the model depicts the hypothesized positive relationship between OCE and ADV.

Further, the hypothesized negative relationship between CRM and ADV is shown. Finally, the model depicts the positive relationship between COR and ADV.

Figure 8

Simplified Conceptual Research Model

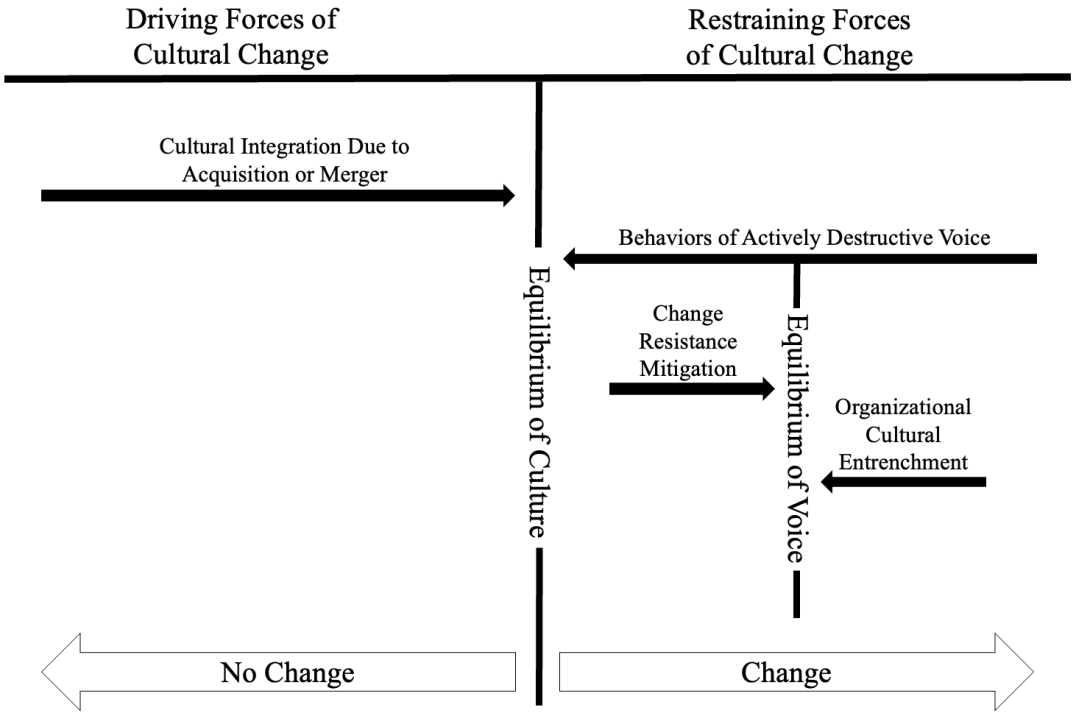


Before moving to the full conceptual research model, it will be instructive to consider the variables of this study through the lens of Lewin's Force Field Theory. Lewin's theory explores how psychological force, tension, conflict, and equilibria exist in the social and cultural domain (Lewin & Gold, 1999).

Figure 9 demonstrates this theory, starting with the equilibrium of culture, which would generally remain stable due to inertia (Hannan et al., 2003b). However, the driving forces of cultural change due to an external force (in this case, a cultural integration due to acquisition or merger) exert a force on the equilibrium of culture, pushing it toward change. Then, when encountering the discomfort of change, the behaviors of ADV react, pressing back against this shift in equilibrium, bolstered by the force of OCE as it presses against the equilibrium of voice. Finally, the effect of resistance mitigation enters the system, pressing opposite cultural entrenchment to move the equilibrium of voice and culture toward change.

Figure 9

Conceptual Model Integrated into the View of Lewin's Force Field Theory, Adapted from Summary of Force Field Analysis - Lewin. Abstract, 1951



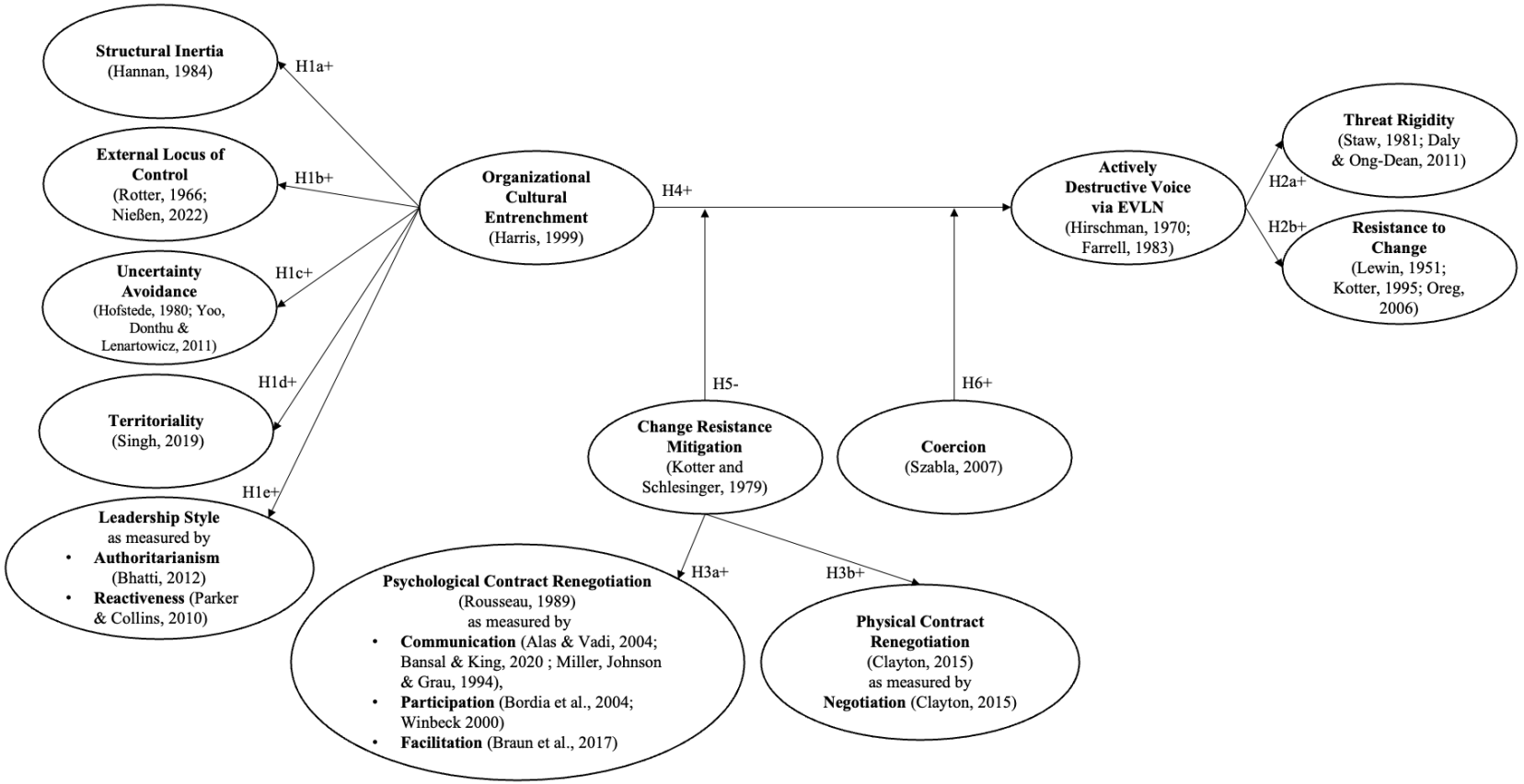
Having now explored the temporal view of the research questions, the variables and relationships of the study in the simplified conceptual model, and having operationalized the variables in the view of Lewin's Force Field Model, we turn to the full conceptual research model (Figure 10). This model is comprised of all the first- and second-order factors of this model, showing variables in this factor view. This model is very similar to the Second-Order Structural Equation Model, missing only observed and control variables.

The full conceptual model shows the independent variable as the second-order factor of OCE, the dependent variable as the second-order factor of ADV, the first moderating variable as the second-order variable of CRM, and the second moderating variable as the first-order factor of COR. The respective first-order factors are shown with their second-order factors.

Finally, the hypothesized positive relationship between OCE and ADV and the hypothesized negative relationship between CRM and ADV are shown. The positively hypothesized relationship between COR and ADV is also depicted.

Figure 10

Conceptual Research Model



Chapter 3: Methodology

Overview

This chapter describes the methods used to gather and analyze data to support a study of the effects of organizational cultural entrenchment on firms' actively destructive behaviors during a merger or acquisition, as well as the mitigating effects of treatments to manage these behaviors. The chapter describes the researcher's worldview and approach to research as a lens through which to view the research methodology.

The chapter then turns to the design of the research study with an exploration of the methodological approach used. The independent, dependent, and moderating variables will be discussed, along with their second-order factors. This will then lead to an overview of the research approach, where the methods used will be defended while viewed through the lens of the researcher's worldview. This section will conclude by discussing the interplay between the research design, the variables and factors under study, and how they have come together to answer the research questions posed.

The chapter will then turn to the population and sample to be studied. Data will be presented to define the broader population clearly and how the sample was extracted. The selection of participants in the pilot and full study will be discussed.

The chapter will discuss the instrument, its construction, and the procedures executed to ensure internal validity. This will lead to exploring the study's procedures and how data was collected and analyzed.

Ethical considerations for the use of human subjects will be explored, as well as the researcher's positionality. This positionality and its propensity for bias will be discussed, as well as how its effects were mitigated. Finally, the chapter will end with a discussion of data validity and reliability.

Worldview

The researcher's worldview holds aspects of both postpositivist and pragmatist views. Ontologically, the researcher's views align closely with postpositivism, seeing the nature of reality as singular with an epistemological lens that believes that "reality exists beyond ourselves." The researcher views the world through what Creswell describes as recognizing that "all cause and effect is a probability that may or may not occur" (Creswell & Poth, 2018, pp. 23 & 35).

The researcher also holds pragmatic views pertaining to research, with an epistemology that allows for gathering data from multiple perspectives and through both qualitative and quantitative sources.

Ultimately, the researcher's postpositivist epistemology manifests in this study via the methodology of gathering and analyzing quantitative data to discover probabilistic outcomes that are statistically analyzed to deduce meaning.

Organization of the Remainder of this Chapter

The remainder of this chapter will consist of five major sections. The following list details the purpose of each section intended to support the discussion of methodology:

1. Reiterate the research questions and hypotheses of the study
2. Discuss the research design in detail
3. Define the population and sample for the study
4. Discuss data collection methods
5. Discuss how data was analyzed and how the study ensured validity and reliability.

Research Questions and Hypotheses

Having introduced the study with its research question and then developed the hypotheses to evaluate, we turn to the research methodology to describe how we have measured our hypotheses in service of answers to our research questions. To reiterate, these are the questions that guided this study:

RQ 1 - What is organizational cultural entrenchment (OCE)?

RQ 2 - What premerger or acquisition cultural factors contribute to the phenomenon of OCE?

RQ 3 - What are the organizational behaviors resultant from OCE that contribute to actively destructive voice (ADV) in the merged with or acquired company?

RQ 4 - What change resistance mitigation (CRM) treatments can be applied before and during the integration phase of an M&A to reduce the effect of OCE on ADV?

RQ 5 – How does coercion affect the amount of ADV behaviors when applied during the premerger or integration phase of an M&A?

RQ 6 – How does increased OCE in a premerger or acquisition company affect the amount of ADV behaviors in the integration phase of the M&A?

RQ 7 – What effect do CRM treatments have on the relationship between OCE and ADV? Can these treatments lower ADV in the merged with or acquired company?

Moreover, these are the hypotheses that the study methodology answers:

H1a: There is a positive relationship between the cultural factor of structural inertia and organizational cultural entrenchment.

H1b: There is a positive relationship between the cultural factor of external locus of control and organizational cultural entrenchment.

H1c: There is a positive relationship between the cultural factor of uncertainty avoidance and organizational cultural entrenchment.

H1d: There is a positive relationship between the cultural factor of territoriality and organizational cultural entrenchment.

H1e: There is a positive relationship between authoritarian and reactive

leadership styles and organizational cultural entrenchment.

H2a: There is a positive relationship between the factor of threat rigidity and actively destructive voice.

H2b: There is a positive relationship between the factor of resistance to change and actively destructive voice.

H2c: The voice behavior of restriction of information processing will fall within the active and destructive quadrant of a multidimensional scale of active/passive and constructive/destructive behavior.

H2d: The voice behavior of constriction in control will fall within the active and destructive quadrant of a multidimensional scale of active/passive and constructive/destructive behavior.

H2e: The voice behavior of vocal criticality will fall within the active and destructive quadrant of a multidimensional scale of active/passive and constructive/destructive behavior.

H2f: The voice behavior of support of vocal criticality will fall within the active and destructive quadrant of a multidimensional scale of active/passive and constructive/destructive behavior.

H3a: There is a positive relationship between psychological contract renegotiation and its incumbent treatments of communication, participation, and participation with the factor of change resistance mitigation.

H3b: There is a positive relationship between the factor of physical contract renegotiation and change resistance mitigation.

H4: There is a positive relationship between organizational cultural entrenchment and the behaviors of actively destructive voice.

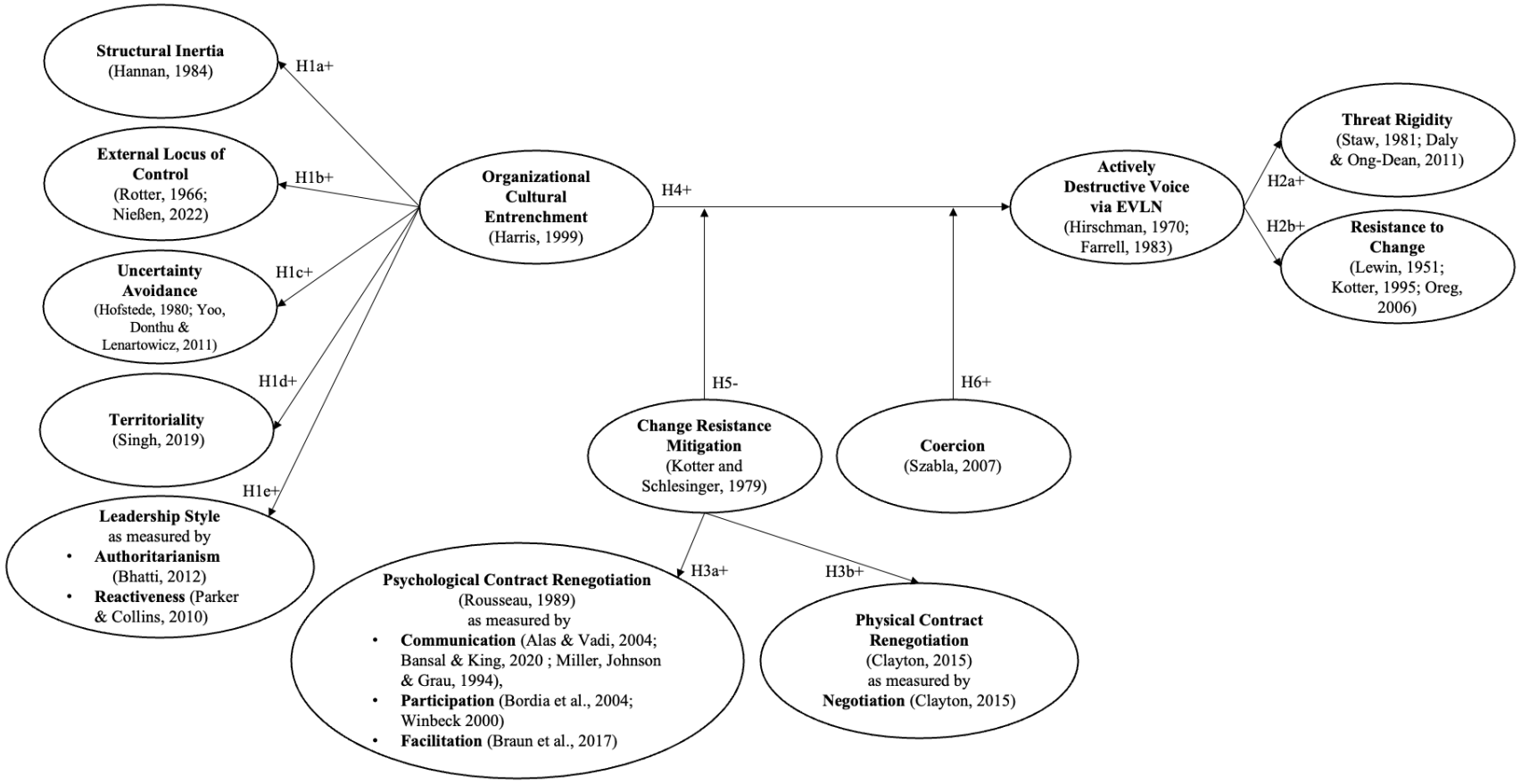
H5: There is a negative relationship between change resistance mitigation and the behaviors of actively destructive voice.

H6: There is a positive relationship between the factor of coercion and actively destructive voice.

Research Design

This study has operationalized the abstract constructs of organizational cultural entrenchment, actively destructive voice, and change resistance mitigation. First-order factors have aggregated these secondary factors, allowing for intra-factor study and the study of the interplay of first-order factors. The following conceptual research model details these factors:

Figure 11 *Conceptual Research Model*



The research strategy comprises a single survey of Likert scale items to measure individual participant perceptions. The cross-sectional study asked individual participants about their perceptions of their non-contrived, natural environment within the window just before and during the integration period of the merger, acquisition, or organizational change (Bougie & Sekaran, 2020).

The study's unit of analysis and observation has been that of the individual. The study explored individual perceptions of the factors of OCE, ADV, and CRM (Bougie & Sekaran, 2020, pp. 110 & 223; Denton, 2007; Sedgwick, 2014). Then, as in Harris' 1999 study, these individual perceptions were logically extrapolated to the culture and behavior of the organization.

Observed Variable Naming Convention

All observed variables in this study have utilized the same naming structure:

<3-letter acronym for second-order latent variable>-

<3-letter acronym for first-order latent variable>_

<variable number>

For example, the observed variable name for the first item regarding Structural Inertia within Organizational Cultural Entrenchment is OCE-STR_1.

Independent Variable – Organizational Cultural Entrenchment

The independent variable of OCE is the second-order latent variable representing the aggregate amount of entrenchment held by the firm or firms under study. The value has been calculated by considering all first-order latent variable

correlations. The second-order independent variable of OCE is a latent variable to the first-order latent variables of structural inertia, external locus of control, uncertainty avoidance, territoriality, and leadership style (as measured by authoritarianism and reactiveness) shown with their acronyms here:

Table 3

Variable Naming for OCE Factors

Second-Order Variable	Acronym
Organizational Cultural Entrenchment	OCE
First-Order Variable	**Acronym**
Structural Inertia	STR
External Locus of Control	LOC
Uncertainty Avoidance	UNA
Territoriality	TER
Leadership Style (as measured by Authoritarianism and Reactiveness)	LDR (AUT & REA)

Dependent Variable – Active and Destructive Voice

The dependent variable of ADV is the second-order latent variable representing the aggregate amount of voice held by the firm or firms under study. The value is calculated by considering all first-order latent variable correlations. The second-order dependent variable of active and destructive voice is a latent variable to the first-order latent variables of threat rigidity and resistance to change, shown with their acronyms here:

Table 4

Variable Naming for ADV Factors

Second-Order Variable	Acronym
Actively Destructive Voice	ADV
First-Order Variable	**Acronym**
Threat Rigidity	THE
Resistance to Change	RTC

Moderating Variable – Change Resistance Mitigation

The moderating variable of CRM is the second-order latent variable representing the aggregate amount of mitigation salience held by the firm or firms under study due to resistance treatment efforts. The value is calculated by considering all first-order latent variable correlations. The second-order moderating variable of CRM is a latent variable to the first-order latent variables of psychological contract renegotiation (as measured by communication, participation, and facilitation) and physical contract renegotiation.

Table 5

Variable Naming for CRM Factors

Second-Order Variable	Acronym
Change Resistance Mitigation	CRM
First-Order Variable (Psychological Contract Renegotiation – as measured by these factors:)	**Acronym**
Communication	COM
Participation	PAR
Facilitation	FAC

Second-Order Variable	Acronym
Change Resistance Mitigation	CRM
First-Order Variable (Physical Contract Renegotiation – as measured by:)	**Acronym**
Negotiation	NEG

Moderating Variable – Coercion

The moderating variable of COR represents the amount of coercion applied during the M&A by the firms under study.

Table 6

Variable Naming for COR Factor

First-Order, Moderating Variable	Acronym
Coercion	COR

Control Variables

Two control variables were introduced into the model to ensure that alternate explanations for findings are ruled out and to provide more accurate estimates of the proposed model (T. E. Becker et al., 2016). These variables were considered in relation to the dependent variable of voice. Both the years in business (OPYEARS)

and the number of employees (NUMEMP) in the merged or acquired firm have been named as impactful to the acceptance of change and resiliency within the literature (Buono & Bowditch, 1989; Jia et al., 2020; Nold & Michel, 2016; Sathe, 1983). Because of this, these variables were collected for analysis and future research.

OPYEARS was collected as a freeform, whole number field. NUMEMP was collected by offering the participant a choice of whole number ranges from those utilized in the study by (Nold & Michel, 2016) (0-99, 100-199, 1000-9999, > 9999).

Demographic and Firmographic Data

Several demographic and firmographic data were gathered for analysis and potential future use. First, the industry sector and subsector (SECTOR and SUBSECT, respectively) were selected from a selection list prepopulated with this data from the North American Industry Classification System (U.S. Office of Management and Budget, 2022). Next, the study gathered how long ago the company was acquired (WHENACQ) via a selection list with the options of less than 90 days ago, 90 days to three years ago, and more than three years ago. Then, individual demographic questions included (GENDER) to capture male, female, or other. Also, the employee's tenure with the acquired company was captured (TENURE).

Overview of Research Approach Used in this Study

The choice of a quantitative approach for this study was two-fold. First, the study utilized the qualitative work of Harris as its basis for cultural entrenchment. The study built upon Harris' work via quantitative analogs to generalize the concept of OCE by analyzing a statistically significant sample. This choice of quantitative analysis follows in the school of Buono in his significant works using survey instruments to gather perception data from participants who have been a part of a merger or acquisition (Buono & Bowditch, 1989).

The choice of a quantitative, probabilistic study approach was also utilized due to alignment with the researcher's postpositivist worldview. This view leans toward a reality external to the researcher, necessitating probability as a lens through which to view data (Gray, 2022).

Utilizing the tools of the quantitative instrument, exploratory factor analysis, principal component analysis, confirmatory factor analysis, and structural equation modeling, the research followed the substantial works of others in the field while seeking to minimize any bias that might have been introduced through the researcher's worldview.

Population and Sample

The population for this study was individuals from all companies merged with or acquired by another company between 2000 and 2022 within the countries of the G7 (Canada, France, Germany, Italy, Japan, United Kingdom, and United

States) and European Union (EU) (Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Republic of Cyprus, Romania, Slovakia, Slovenia, Spain, and Sweden). The choice of G7 and EU countries was driven by their status as developed countries with active M&A activity and financial transparency (Sreesing, 2018). Further, EU countries were chosen because they have had a positive trend in M&A activities since the early 2000s, driven by the adoption of the euro, globalization, and technological advances (Mariana, 2013).

During the 22-year timespan of 2000 through 2022, there were at least 811,853 M&As in the G7 and EU nations (some smaller EU nations were not accounted for in the data) (*M&A Statistics by Countries*, 2023). The 22-year timespan of 2000 through 2022 allowed for a more extensive set of participants from M&As during various economic conditions. Details of these statistics are captured in Appendix A: M&A Statistics of G7 and EU Countries.

A random sample was gathered from this population. The required sample size varies depending on the method employed in its calculation. For example, the sample required for a population of this size is 384, according to the sample size table from Krejcie & Morgan (1970). Utilizing Yamane's formula, $n = N / (1 + N(e)^2)$ at an e value of 0.05, the sample size is calculated as 400 (Adam, 2020; Yamane, 1967). Using Cochran's formula for sample size, $n_0 = Z^2pq/e^2$, at a 95%

confidence interval with +/- 5% precision, a sample size of 400 would be required (Uakarn et al., 2021). For this study, the researcher ultimately arrived at a sample of 465, exceeding the goal of 400, which was sufficient to generate realistically generalizable results for the population.

This study also required the execution of a pilot study to validate the survey instrument as it was assembled from a set of preexisting instruments. The newly created instrument was scrutinized for validity and reliability via a pilot and refined pilot study before being utilized in the full study (J. Hill, 2022, p. 61; Ifinedo, 2011, p. 262). This allowed for exploratory factor analysis and primary component analysis to determine that the survey items correctly measured the constructs as intended (Collins, 2003).

The sample size for the pilot study had a participant goal of 30. This number fell within the 30 suggested by Roscoe (1975) and D. R. Hill (1988) while exceeding the minimum of 12 suggested by Julious (2005). Ultimately, the number of participants in the refined pilot was 72.

Selection of Participants

The source of participants for both the pilot and full study was Amazon's Mechanical Turk (MTurk). This crowdsourcing platform was used to acquire convenience samples for the pilot and full study as research showed that data collection from MTurk respondents yields results that are highly comparable to those of non-MTurk respondents (Keith et al., 2023). This platform was found to

be a valid and reliable data source and has been widely used in organizational and social science research across numerous countries (J. H. Cheung et al., 2017; Litman et al., 2017; Mason & Suri, 2012; Shapiro et al., 2013). As of 2018, the MTurk platform has had more than 100,000 workers, with more than 2000 workers available at any given time (Difallah et al., 2018). Compensation for work on the platform is considered fair by participants, and most participants consider the amount of stress encountered working on the platform to be satisfactory (Moss, Rosenzweig, et al., 2023).

Management of MTurk's Human Intelligence Tasks, or HITs, was accomplished via the CloudResearch platform (formerly called TurkPrime). This online platform is a layer over MTurk, providing a more intuitive user interface, additional demographic filtering, and fraud detection. Further, the platform offers study batching, a methodology of running concurrent, smaller studies to save money while parallelizing data gathering (*MTurk Toolkit: Transform MTurk Into a Complete Online Survey Platform*, n.d.).

In both pilots and the full study, level 1 filtering of participants was accomplished through CloudResearch by only allowing participants from EU and G7 countries, blocking suspicious geocodes and participants entering with duplicate IP addresses. Level 2 filtering was then accomplished by targeting only M&A participants through a qualification test allowed by MTurk to give "requesters the opportunity to vet the skill level of the people working on their

HITs beforehand" (Qualifying questions are listed in Appendix B: Instrument) (*Amazon Mechanical Turk FAQs*, n.d.; Moss, Hauser, et al., 2023).

Instrumentation

The survey instrument for the study was created with scales from previously validated sources. The items from these sources were adapted in voice and subject to meet the needs of this study. However, modifications were kept to a minimum to maintain the integrity of the original item (Bougie & Sekaran, 2020, p. 211; Stewart et al., 2012, p. 994). Further, all questions were intentionally limited to 20 words or less or no more than one full line of print to increase readability and comprehension (Horst, 1968; Oppenheim, 1986).

The survey instrument consists of 93 questions, four qualifying questions, and six demographic questions. To combat survey fatigue, the survey was broken into sections with an estimated time remaining shown via a percent complete indicator. Questions were unambiguous and not left open-ended. Given 7.5 seconds per item as an average answer time, completing this survey was estimated to take around 12-13 minutes, which fell short of the maximum time of 15-20 minutes as suggested by Versta Research ("How to Estimate the Length of a Survey," 2011).

Preexisting instruments containing items to measure each factor were found in extant literature. Survey instruments were found for each of the six factors of

OCE, the two factors under study for ADV, and the factors of CRM. The combined instrument for this study may be found in Appendix B: Instrument.

The complete survey instrument contains qualifying questions to determine if the user is in a G7 or EU country, if they have been in a company from 2000-2022 that has been through an M&A, and if they stayed at that company for six or more months following the M&A. These qualifying questions prefaced the full survey and were used to control costs by qualifying candidates before allowing users to take the full survey on Amazon's Mechanical Turk service.

After a CAPTCHA to ensure bots were eliminated (Z. Zhang et al., 2022), the full survey began by asking a commitment question. The commitment question was found by Geisen (2022) to elicit a greater commitment to the completion of the survey and was found to be preferable to random commitment check questions. For completeness, though, the survey also contained attention-check questions at various points to ensure participants read the survey fully (Storozuk et al., 2020). Further, the survey asked for the user's age and birth year for a logical comparison check (USF M3 Center, 2021). These questions served as a check for and were analyzed after data collection for insufficient effort responding (IER) (C. Berry et al., 2022; J. Huang et al., 2014; J. L. Huang et al., 2012, 2015).

For the OCE factor of structural inertia, Kinnear & Roodt's (1998) survey was chosen as it contains items that measure organizational culture with a direct influence on structural inertia.

The external locus of control instrument of Nießen et al. (2022) was chosen to measure employees' external locus of control within acquired and merged firms. This instrument contains items from internal and external perspectives, requiring a cognizant awareness of external/internal questions of the scale during analysis.

The scale developed by Yoo et al. (2011) was chosen for uncertainty avoidance. This scale was written to measure uncertainty avoidance at the individual employee level, which is the level of observation of this research.

The scale used to measure authoritarianism was created by Bhatti et al. (2012). This instrument was validated in a study of 205 participants and was found to have good internal validity.

S. K. Parker & Collins' (2010) work on integrating and differentiating multiple proactive behaviors yielded an instrument containing several types of these behaviors. Among the types is problem prevention, a behavior lacking in the group with which Harris did his initial cultural entrenchment study. Because of the similarity in issue to Harris' work, items from this type were chosen.

Hiding of knowledge, protection of ideas, and guardedness were behaviors uncovered during Harris' study. As a result, Singh's (2019) instrument from his research on territoriality was chosen to be part of the instrument.

The instrument for this study includes two sets of items from the threat rigidity scale of Daly et al. (2011). The first of these items measures the restriction of information processing, and the second measures the behavior of constriction in

control. Both of these factors were shown to load well on the factor of threat rigidity.

Items from Giangreco & Peccei's (2005) instrument on resistance to change were included in this study's instrument to survey for the presence of vocal criticality and support thereof from colleagues in the face of change.

Five existing instruments were chosen to measure the effects of resistance mitigation treatments that surfaced in Kotter's seminal 1979 work. These resistance mitigation treatments were measured through communication, participation, facilitation, and negotiation. Further, coercion was measured via a set of observed items.

For the factor of communication, items from the study on the willingness of employees to participate in a planned organizational change by Miller et al. (1994) were included in the study instrument. These items evaluate the "quality of information" received by the employee, which was discussed in Kotter & Schlesinger's (1979) work as crucial to helping employees "see the need for and logic" of a change.

Work on managing uncertainty during an organizational change from Bordia et al. (2003) contains a lengthy survey instrument that contains items on participation in decision-making. These items are well-suited to measuring the perceived participation of employees during a change event.

The instrument to measure the perception of facilitation by employees of their management and colleagues during an organizational change by Braun et al. (2017) was chosen to add to the study survey. This set of items gleans insights into the employee's support during the change.

Items from Yu & Ming's (2008) instrument, intended to measure the effects of negotiation with employees during change, were used to evaluate the employee's perceptions of negotiation. Yu & Ming's study utilized the concept of "output control" as a construct for pay, targets, results, and performance-based reward systems. This output concept and its items lend themselves well to the notion of negotiation in this study.

Items from Szabla's (2007) study on planned organizational change were added to this study's instrument to measure the factor of coercion. Szabla's "Power-Coercive Change Leadership Strategy" items focus on the interplay of employees and leadership during change, stressing the power position of leaders.

After adding survey items covering the factors of organizational cultural entrenchment, actively destructive voice, and change resistance mitigation treatments, the instrument turned to demographic and firmographic questions. Specifically, the control questions of firm age in years and number of employees at the time of acquisition or merger were covered. The participant was then asked when the company was last acquired and was given a list of periods (less than 90 days ago, 90 days to three years ago, and more than three years ago). Beyond this,

the participant was queried for their age (from a list of age ranges), gender, tenure with the company in years, their role, and the industry of their firm.

Positively- and negatively-worded items were added to the questionnaire to detect bias (Bougie & Sekaran, 2020, p. 148). Further, attention and logic checks were added, as suggested by Storozuk et al. (2020).

After completion of the face-validity assessment, the instrument was loaded into the Qualtrics Experience Management Platform for distribution for the pilot study.

Procedures

The research questions of this study required data for the factors of OCE, ADV, and CRM. These questions were posed from the items of preexisting research. The study consisted of a pilot study and a refined pilot study to ensure the internal validity of survey items, modifications for consistency, and a complete survey to collect data for analysis.

The survey questionnaire was evaluated by university professors from the Florida Institute of Technology and another from Lipscomb University to assess face validity. Further, the instrument was examined by three professionals in the researcher's network for this purpose (Bougie & Sekaran, 2020; Gangwar et al., 2015).

After the face-validity examination, the researcher gained Institutional Review Board (IRB) approval for the survey's use in human research (See IRB approval in Appendix C: Institutional Review Board Approval).

Pilot

After completion of the face-validity assessment and IRB review, the instrument was loaded into the Qualtrics Experience Management Platform for distribution for the pilot study to check for validity and reliability (Hill, 2022, p. 61; Ifinedo, 2011, p. 262) and to ensure that "our questions measure the concepts or behaviours we want them to measure" (Collins, 2003, p. 229). The researcher conducted the pilot study with participants from Amazon's Mechanical Turk service. Participants were incentivized via a monetary reward of two dollars on the survey platform ("How to Minimize Survey Fatigue for Quality Research," 2021). The pilot study was conducted until a sufficient sample was reached based on the population and sample discussed earlier.

Pilot participants were sought until a valid sample with fully completed and valid data was obtained. After gleaning all pilot data, the data was scoured for inconsistencies and missing data. This analysis led to the conclusion that the survey instrument should not include only researcher-selected items but should include the entire survey instrument for each factor.

This led to a refinement of the survey instrument and a gathering of further pilot data. At this point, the researcher conducted a complete exploratory factor analysis (EFA) on the refined pilot data to determine the internal validity of the survey items to ensure that all items loaded adequately to a single factor. Principal Component Analysis (PCA) was also conducted on the data to corroborate findings

from the EFA. These measurements showed that the survey instrument sufficiently measured the theorized factors.

Data Collection

Data collection was completed via the Qualtrics Experience Management Platform utilizing participants from Amazon's Mechanical Turk. Data was validated, and collection continued until the proper sample size was met.

A second pass at data collection was attempted, targeting non-U.S. G7 and EU countries. This iteration yielded more participants from these non-U.S. countries.

Data Analysis

For this study, the JASP statistical analysis tool was utilized, along with RStudio. Data from the pilot and refined pilot studies were gathered and loaded into JASP. The descriptive statistics data was evaluated, and central tendency was established via checks for skewness and kurtosis. This analysis helped the researcher understand the normality around each variable and quickly point out issues that could affect data reliability.

Exploratory factor analysis was run on the refined pilot data to examine factor loading. It was assumed that the observed variables would load properly onto their latent variable due to proper validity checks during face validity, but these assumptions were validated via the EFA. The Kaiser-Meyer-Olkin (KMO)

test and Bartlett's test of sphericity were employed to check the suitability of the data for factor analysis. Then, factor loadings were observed to find those items that loaded most highly to find the most parsimonious model.

While some items did not load highly, all were kept in the final instrument used to gather full study data since participants were paid for their participation. The researcher and advisors felt this would be reasonable and allow for further validation of the survey instrument with the full sample data set.

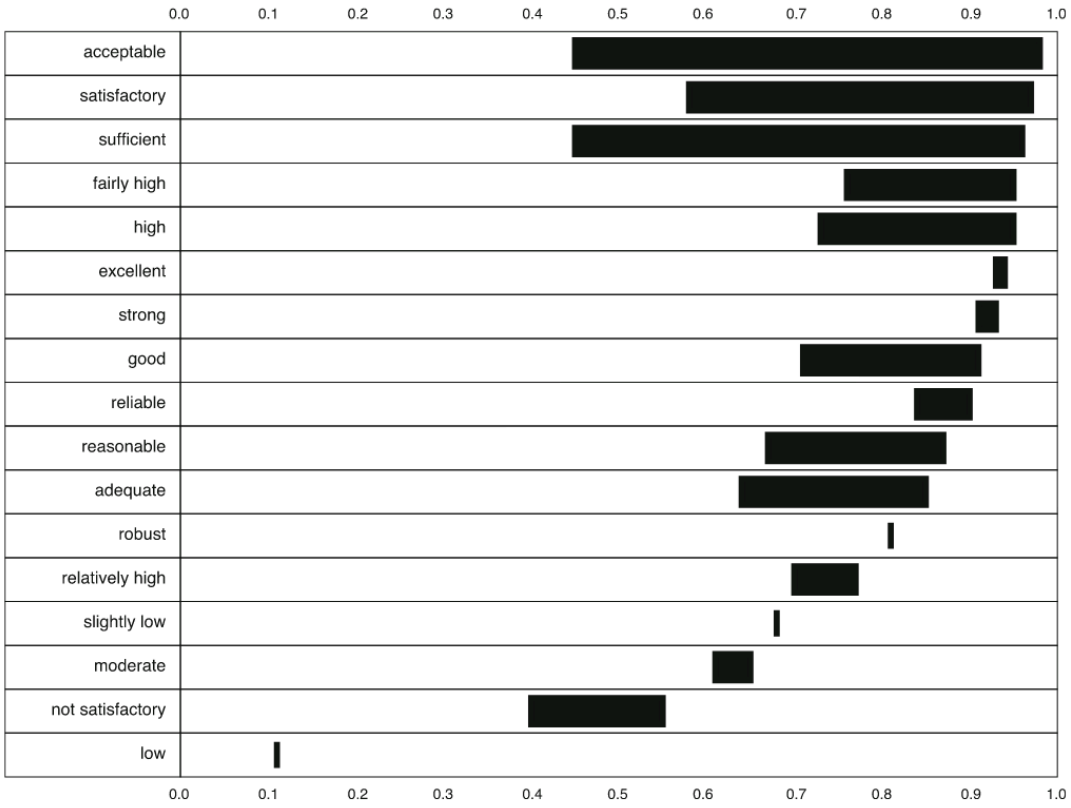
After analysis of the refined pilot data, the full sample set was pursued. When this dataset was fully collected, normality was verified via checks for skewness and kurtosis. All values fell within valid range.

After this, an EFA was executed in JASP. KMO and Bartlett's test of sphericity were employed, finding that the correlation matrix was sufficient for the study. The EFA was then conducted, confirming the parsimonious model of the refined pilot. This was confirmed via a PCA study of the data. Internal consistency reliability was verified via Cronbach's alpha and McDonald's omega tests.

Reliability tests were executed to ensure that items were cohesive within their groups. 0.6 or higher was set as an acceptable Cronbach's Alpha value based on the findings of Taber's (2018) study of journals for acceptable values (Figure 12).

Figure 12

Taber's Descriptors for Acceptability of Cronbach's Alpha Values



A CFA was executed, confirming the goodness-of-fit of the model via comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). Further, convergent validity was found to be sufficient for all items within all first-order factors via a test of the average variance extracted (AVE) metric. Composite reliability was also confirmed to be sufficient, and discriminate validity was examined by calculating and examining the Heterotrait-Monotrait (HTMT) ratio.

The CFA found that the model fit was sufficient and that all items fit well within their individual factors.

Given that the data fit well, a second-order structural equation modeling analysis was executed (Awang, 2015). This second-order structural equation modeling analysis began with the first-order factors of OCE: structural inertia, external locus of control, uncertainty avoidance, territoriality, and leadership style (via authoritarianism and reactiveness). Each of these was related to their respective items, and the correlation among the latent factors was established within JASP. The model was examined in JASP, and the researcher observed significant correlations between the observed variables and their latent factors. Further, low correlation values were found between most latent factors.

This same methodology was applied to the observed and latent factors of ADV with its first-order factors of threat rigidity and resistance to change. Also, this methodology was applied to the observed and latent factors of CRM with its first-order factors of psychological contract negotiation (as measured by communication, participation, and facilitation) and physical contract renegotiation.

The observed items of the first-order moderator of coercion were also considered, looking for their correlation to the latent factor of COR and the relationship with ADV.

After observing the correlation between the first-order latent factors and their observed values, the researcher established an association between all first-order

latent factors and their second-order factors. The model was rerun, and correlations were examined between the first- and second-order factors to examine the hypotheses associated with these relationships.

Next, an association was established between the second-order factors of OCE and ADV, CRM and ADV, and COR and ADV. The model was rerun to determine if OCE had a significant and direct positive influence on ADV, as hypothesized. Likewise, the model was examined to see if CRM has a direct negative influence on ADV (Awang, 2015; T. A. Brown, 2015; Crowson, 2020).

These latter interaction tests required complicated interaction models with large combinations of interaction effects, requiring multiple lines of interaction code to describe the interaction effect permutations between each individual observed variable. Further, the model required error covariances to be captured at the individual observed variable interaction level, creating many lines of code to describe these relationships.

Because of the large number of interaction effects, double-mean-centering and parceling were applied to normalize the data further and reduce the number of interactions to be managed. Even when these modifications were made, the complexity of the model, size of the data, and interaction of the latent constructs were such that the interaction model could not be resolved on the researcher's computer. Further, analysis of the covariance-based SEM interaction model would not resolve, even when run in a cloud-computing environment with high amounts

of computing and memory resources. Therefore, the analysis was shifted to partial least squares SEM in RStudio. This latter methodology is more conducive to large SEM models, and thus, the model could be resolved, yielding study results.

Ethical Considerations

This study followed best practices to ensure compliance with the highest ethical standards. The researcher submitted an exempt application to the IRB since the risk to human subjects for this study was minimal. This application described the study's objectives, methodology, participant population characteristics, risks to the participants, data confidentiality and security procedures, and a plan for informed consent. The IRB application concluded with an overview of the knowledge to be gained from the study. This application was submitted to the IRB immediately upon approval to pursue the study and was quickly approved.

Participants in the study were fully informed about the nature of the study and how their responses would be used to further the research. Participants were assured that their responses would be kept confidential and that all research data would be kept securely on computers with full disk encryption.

All data captured for the pilot and the full study were kept in the Qualtrics data platform, where data was encrypted at rest. Further, data pulled to the researcher’s computers were kept secure on machines with biometric security and full disk encryption.

Researcher Positionality

The researcher is a doctoral candidate studying business administration and a software engineering and cloud computing leader in a large, U.S.-based aerospace defense contracting firm. The researcher has been an engineer and leader in defense, healthcare, utilities, telecommunications, and other industry verticals for over 25 years.

The researcher has been in companies before and during organizational restructuring, mergers and acquisitions, and has witnessed many behaviors examined in this study. Further, the researcher has experienced the effects of the change resistance mitigation treatments considered in this study.

The researcher's experiences have helped to shape this study, its research questions, and its factors. However, every effort has been made to minimize biases manifested from the researcher's past experiences. The use of preexisting survey items and the acquisition of second-order factors from extant literature have been intentionally employed to separate the researcher's potential biases from the construction and execution of this study.

Validity and Reliability

The instrument used in this quantitative study was scrutinized for validity and reliability to the extent that the “scientific rigor” of the study cannot be called into question (Bougie & Sekaran, 2020, p. 208).

This study ensured validity through the application of content and construct validation. The instrument was constructed from existing instruments successfully used in prior studies. From these studies, a judgment was made on whether to keep certain items based on their correlation strength with their latent variable. The refined pilot and full study then utilized the complete set of survey items from the existing instruments to ensure absolute fidelity with the prior study.

Content validation for the items in the instrument was performed by carefully examining the literature to ensure that the items truly measure the factor under study. Further, face validity was ascertained through a panel of judges with backgrounds in organizational culture (Bougie & Sekaran, 2020, pp. 209-210; Gangwar et al., 2015).

Construct validity employed multiple tools to ensure the discriminant validity of the items under study. First, published studies were utilized to determine the validity of constructs before their inclusion in the instrument. Further, a refined pilot study was performed with a sample size sufficient to perform an EFA and a corroborating PCA. This EFA and PCA ensured proper item "fit" within each measured latent variable.

The reliability of the measure was ensured via internal consistency measures. The correlation analysis of the EFA yielded results via Cronbach's Alpha that ensured internal consistency for all items and showed that they were categorically appropriate for their latent variable (Cronbach, 1946; Taber, 2018). Also, a

composite reliability (CR) and Average Variance Extracted (AVE) score were calculated for the items of each latent variable to confirm the convergent validity of each item set (Fornell & Larcker, 1981; Hair et al., 2009). These same tests were run on the full data set gathered in the study to confirm that no items highly correlated with variables outside of their intended factor.

Consideration for common method variance (CMV) was also given, as the survey measured items from the independent and dependent variables using the same participant, and the researcher was aware that CMV could lead to variables that were the result of the test method and not to the constructs of the test. Per Podsakoff et al. (2003), different scales were utilized across the independent and dependent variables to combat CMV. Further, per Chang et al. (2010, p. 180), the user was "assured of the anonymity and confidentiality of the study … and that they should answer as honestly as possible." Harmon's One-Factor Test was also employed to ensure that CMV did not pollute the study results (Chang et al., 2010; P. M. Podsakoff et al., 2003).

Chapter 4: Data, Findings, and Conclusions

Overview

This chapter describes the findings of the quantitative study executed in the evaluation of the study hypotheses. The findings are described for each of three stages in the study, the initial pilot, the refined pilot, and the full study. Discussion is given for the sample selection and data collection of each study phase. The work contains a description of the methodology used for cleaning the data. Characteristics of the survey sample are described for each phase. The validation of the study instrument is discussed via the EFA and PCA findings in each phase.

The chapter concludes with a detailed discussion of the covariance-based (CB-SEM) and partial least squares structural equation modeling (PLS-SEM) executed in evaluating the study hypotheses. This section then provides an evaluation of hypotheses based on the study findings.

Initial Pilot Findings

Overview

A pilot study was conducted to validate the survey instrument to ensure that the survey items appropriately measure the behaviors under study. This test was intended to test the instrument for validity and reliability before embarking on a full study (Collins, 2003; J. Hill, 2022; Ifinedo, 2011).

Sample Selection

The population of the study was employees from G7 and EU nations who have been in a company that was merged with or acquired since the year 2000. The pilot sample sought to gather sufficient participant data from this population via the CloudResearch/MTurk crowdsourcing platform.

Data Collection

The survey was executed on the CloudResearch/MTurk platform with the sample size set to 50, with participants from all countries allowed to participate in the initial qualification round. A total of 50 were surveyed by the platform, with 29 disqualified for not being in a G7 or EU nation or not having previously participated in an M&A. To achieve the needed number of participants, a second run on MTurk was executed with a request for 100 participants. With the combined data from these two runs, 150 participants were surveyed. Of these, 67 were disqualified. Of the remaining participants, 47 passed all attention and logic checks, leaving a sample sufficient for the pilot study (D. R. Hill, 1988; Julious, 2005; Roscoe, 1975).

Exploratory Factor Analysis

An exploratory factor analysis (EFA) was performed to find the latent factors among the observed variables (T. A. Brown, 2015). Analyses were conducted with JASP 0.17.2.1 (Jeffreys' Amazing Statistics Program) (JASP Team, 2023). Due to the complexity of the second-order model, EFA was completed on each second-

order factor, OCE, ADV, and CRM, along with the moderating factor of COR in order to investigate the first-order, latent factors of each (Cavicchia & Vichi, 2022).

The Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity were employed on each second-order factor to ensure that the correlation matrix was not random amongst its first-order factors (M. S. Bartlett, 1950; Kaiser, 1970). For this to be true, the Bartlett value was tested to be less than 0.05, and the KMO was tested to be greater than 0.5. For OCE, Bartlett's test value was < .001, and KMO was 0.701. For ADV, Bartlett's test value was < .001, and KMO was 0.801. For CRM, Bartlett's test value was < .001, and KMO was 0.816. For COR, Bartlett's test value was < .001, and KMO was 0.599. These results indicated that factor analysis would be appropriate for the sample because of sufficiently strong correlation between the variables.

After ensuring the correlation matrix was sufficient, EFA was run on the first-order factors of the second-order factors of OCE, ADV, CRM, and COR. Parallel analysis was executed to determine the number of factors to extract. The factor loadings were executed using principal axis factoring with oblique rotation using the promax method.

To select factors, scree plots were evaluated to investigate factors computed by parallel analysis. This yielded a set of factors less than theorized. Therefore, factors were manually set to the number of factors in the theoretical model based on their empirical and conceptual foundation (T. A. Brown, 2015). Factor loadings of

the observed variables were used to determine the most parsimonious model to keep (Moore, 2012; Williams et al., 2010).

After running an analysis on the factors of OCE, ADV, CRM, and COR, distinct factors emerged. Within these factors, some items had loading values that were too low to consider and were later removed in the parsimonious model.

Summary of Initial Pilot

The initial pilot yielded several issues with the survey instrument.

First, the initial survey instrument was constructed with cherry-picked survey items based on the researcher's assumption of the item's salience to each factor, which could lead to incomplete or biased results (Andrade, 2021; Elston, 2021; Murphy & Aguinis, 2019). After consulting with committee members specializing in quantitative analysis, this methodology was rejected, and each item from preexisting, validated surveys was included in the study instrument for all factors instead of selecting only those items assumed to be most salient.

Further, insufficient effort response (IER) attention and logic checks in the initial instrument that should have yielded a polar response were found to have results toward the middle of the scale as they were left open for interpretation. After consulting with a committee member well-versed in organizational behavior surveys, these questions were changed to instructed responses to direct users to the correct value (J. L. Huang et al., 2015). Questions such as "I was born on planet Earth" or "I can teleport across space and time" were replaced with "Choose

Strongly agree if you are reading this" and "Choose Strongly disagree if you are reading this."

To ensure that participants fully understood the context and timeframes of the questions in the survey, definitions were added, and instructions were improved. These modifications expanded on the definition of M&A and clarified the before, during, and after periods. Also, instructions were edited to have bolded and italicized text, where appropriate, to emphasize the subject and time period (e.g., "The next questions pertain to your perception of the **culture** of your company **before it was merged with or acquired** by another company.").

The original survey instrument included 24 questions for a sub-study to extend Farrell's work on the EVLN framework. These questions were included to map the actively destructive behaviors considered in this study to Farrell's constructive/destructive, active/passive multidimensional scale. Given that this sub-study was not required for the behavioral phenomenon under study, the 24 questions for this sub-study were jettisoned to allow for the full scales added in response to the cherry-picking issues found.

Finally, the original run of the pilot in CloudResearch allowed all MTurk users regardless of their experience on the platform. This acceptance of all users was assumed to be a cause of the larger rejection rate due to IER. To combat this problem, future study runs in CloudResearch ensured that participants had a 95% or higher human intelligence task (HIT) acceptance rate.

Refined Pilot Findings

Overview

A second pilot was executed after implementing refinements to the survey instrument based on findings in the initial pilot. Also, modifications to the CloudResearch/MTurk platform settings were made to improve the participant pool. These refinements made significant improvements to the quality of the pilot study data, as shown below.

Sample Selection

As in the initial pilot, the refined pilot gathered data from the CloudResearch/MTurk platform, evaluating participants from G7 and EU nations who had been in a company that was merged with or acquired since the year 2000.

Data Collection

The refined pilot was executed on the CloudResearch/MTurk platform with the sample size set to 100, only accepting participants with a 95% or greater HIT acceptance rate. Of these participants, 72 were qualified with M&A experience in a G7 or EU nation, as well as having passed all attention and logic checks. This number of participants ensured that there were at least 5.5 participants per factor, making this sample size sufficient for EFA (J. E. Bartlett et al., 2001).

Descriptive Statistics

Descriptive statistics for the data from the 72 pilot participants showed that the assumption of data normality must be rejected, as the p-value of Shapiro-Wilk

was < 0.001 for all items. Further, Mardia's test of multivariate normality for skewness and kurtosis was < 0.001, indicating that the hypothesis of data normality should be rejected. Given that the survey instrument contains all Likert scale items, normality was not assumed in the study. Because of this lack of data normality, the utilization of principal axis factoring was chosen as the factoring method as opposed to maximum likelihood. The skewness and kurtosis values for all observed variables are shown in the following tables.

Table 7

OCE Descriptive Statistics for Refined Pilot Data

Item	Valid	Mean	Std. Deviation	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Shapiro-Wilk	P-value of Shapiro-Wilk	Min	Max
OCE-STR_1	72	4.778	1.465	-0.735	0.283	-0.003	0.559	0.909	< .001	1	7
OCE-STR_2	72	4.653	1.705	-0.401	0.283	-0.854	0.559	0.916	< .001	1	7
OCE-STR_3	72	4.542	1.635	-0.513	0.283	-0.503	0.559	0.925	< .001	1	7
OCE-STR_4	72	4.847	1.741	-0.565	0.283	-0.570	0.559	0.91	< .001	1	7
OCE-STR_5	72	4.944	1.677	-0.776	0.283	-0.142	0.559	0.896	< .001	1	7
OCE-STR_6	72	4.625	1.69	-0.447	0.283	-0.659	0.559	0.926	< .001	1	7
OCE-STR_7	72	4.625	1.723	-0.481	0.283	-0.708	0.559	0.922	< .001	1	7
OCE-LOC_1	72	5.125	1.342	-0.738	0.283	0.434	0.559	0.912	< .001	1	7
OCE-LOC_2	72	5.097	1.235	-0.789	0.283	0.733	0.559	0.902	< .001	1	7
OCE-LOC_3	72	5.194	1.36	-0.951	0.283	0.978	0.559	0.889	< .001	1	7
OCE-LOC_4	72	5.292	1.337	-0.448	0.283	-0.722	0.559	0.906	< .001	2	7
OCE-LOC_5	72	5.056	1.519	-0.890	0.283	0.374	0.559	0.89	< .001	1	7
OCE-LOC_6	72	4.903	1.531	-0.559	0.283	-0.227	0.559	0.926	< .001	1	7
OCE-LOC_7	72	5.319	1.085	-0.470	0.283	-0.127	0.559	0.894	< .001	3	7
OCE-LOC_8	72	5.153	1.183	-0.199	0.283	-0.836	0.559	0.912	< .001	3	7
OCE-LOC_9	72	4.958	1.467	-0.669	0.283	0.185	0.559	0.92	< .001	1	7
OCE-LOC_10	72	4.722	1.705	-0.533	0.283	-0.591	0.559	0.917	< .001	1	7
OCE-LOC_11	72	5.319	1.185	-1.070	0.283	1.990	0.559	0.878	< .001	1	7
OCE-LOC_12	72	5.083	1.16	-0.278	0.283	-0.234	0.559	0.925	< .001	2	7
OCE-LOC_13	72	4.861	1.476	-0.538	0.283	-0.223	0.559	0.922	< .001	1	7
OCE-LOC_14	72	5.167	1.267	-0.622	0.283	0.146	0.559	0.908	< .001	2	7
OCE-LOC_15	72	5.222	1.165	-0.779	0.283	0.481	0.559	0.891	< .001	2	7

OCE-LOC_16	72	5.181	1.357	-0.930	0.283	0.757	0.559	0.890	< .001	1	7
OCE-UNA_1	72	5.569	0.976	-0.808	0.283	1.696	0.559	0.870	< .001	2	7
OCE-UNA_2	72	5.347	1.200	-0.658	0.283	0.154	0.559	0.897	< .001	2	7
OCE-UNA_3	72	5.569	1.085	-0.897	0.283	1.871	0.559	0.849	< .001	2	7
OCE-UNA_4	72	5.472	1.048	-0.907	0.283	1.169	0.559	0.871	< .001	2	7
OCE-UNA_5	72	5.583	1.196	-0.660	0.283	0.081	0.559	0.891	< .001	2	7
OCE-AUT_1	72	4.875	1.652	-0.816	0.283	0.153	0.559	0.898	< .001	1	7
OCE-AUT_2	72	4.694	1.633	-0.667	0.283	-0.491	0.559	0.901	< .001	1	7
OCE-AUT_3	72	4.667	1.636	-0.613	0.283	-0.607	0.559	0.901	< .001	1	7
OCE-AUT_4	72	4.486	1.736	-0.275	0.283	-0.849	0.559	0.927	< .001	1	7
OCE-AUT_5	72	4.681	1.608	-0.754	0.283	-0.233	0.559	0.897	< .001	1	7
OCE-AUT_6	72	4.611	1.765	-0.411	0.283	-0.755	0.559	0.924	< .001	1	7
OCE-AUT_7	72	4.639	1.664	-0.609	0.283	-0.422	0.559	0.913	< .001	1	7
OCE-AUT_8	72	4.556	1.711	-0.644	0.283	-0.387	0.559	0.910	< .001	1	7
OCE-AUT_9	72	4.722	1.697	-0.475	0.283	-0.586	0.559	0.924	< .001	1	7
OCE-AUT_10	72	4.736	1.547	-0.575	0.283	-0.317	0.559	0.921	< .001	1	7
OCE-AUT_11	72	4.792	1.528	-0.490	0.283	-0.331	0.559	0.932	< .001	1	7
OCE-AUT_12	72	4.792	1.592	-0.704	0.283	-0.073	0.559	0.911	< .001	1	7
OCE-AUT_13	72	5.111	1.439	-0.841	0.283	0.632	0.559	0.900	< .001	1	7
OCE-REA_1	72	4.722	1.629	-0.561	0.283	-0.459	0.559	0.920	< .001	1	7
OCE-REA_2	72	4.625	1.648	-0.713	0.283	-0.322	0.559	0.899	< .001	1	7
OCE-REA_3	72	4.583	1.572	-0.550	0.283	-0.639	0.559	0.907	< .001	1	7
OCE-REA_4	72	4.681	1.743	-0.427	0.283	-0.820	0.559	0.918	< .001	1	7
OCE-TER_1	72	5.208	1.373	-0.791	0.283	0.506	0.559	0.895	< .001	1	7
OCE-TER_2	72	4.806	1.526	-0.543	0.283	-0.475	0.559	0.920	< .001	1	7
OCE-TER_3	72	4.931	1.568	-0.941	0.283	0.254	0.559	0.878	< .001	1	7
OCE-TER_4	72	4.917	1.616	-0.643	0.283	-0.338	0.559	0.912	< .001	1	7

Table 8

ADV Descriptive Statistics for Refined Pilot Data

Item	Valid	Mean	Std. Deviation	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Shapiro-Wilk	P-value of Shapiro-Wilk	Min	Max
ADV-THR_1	72	5.167	1.463	-1.213	0.283	1.295	0.559	0.853	< .001	1	7
ADV-THR_2	72	5.028	1.520	-1.014	0.283	0.763	0.559	0.876	< .001	1	7
ADV-THR_3	72	5.153	1.489	-1.297	0.283	1.569	0.559	0.840	< .001	1	7
ADV-THR_4	72	5.014	1.552	-0.884	0.283	0.366	0.559	0.894	< .001	1	7
ADV-THR_5	72	5.014	1.543	-1.018	0.283	0.546	0.559	0.872	< .001	1	7
ADV-THR_6	72	5.042	1.458	-0.860	0.283	0.820	0.559	0.901	< .001	1	7
ADV-THR_7	72	4.972	1.565	-0.927	0.283	0.275	0.559	0.883	< .001	1	7
ADV-THR_8	72	4.931	1.722	-0.995	0.283	0.253	0.559	0.863	< .001	1	7
ADV-THR_9	72	4.875	1.565	-1.057	0.283	0.659	0.559	0.865	< .001	1	7
ADV-THR_10	72	5.014	1.496	-0.932	0.283	0.729	0.559	0.893	< .001	1	7
ADV-THR_11	72	4.889	1.683	-0.933	0.283	-0.077	0.559	0.862	< .001	1	7
ADV-RTC_1	72	5.319	1.254	-1.295	0.283	**2.516**	0.559	0.853	< .001	1	7
ADV-RTC_2	72	5.264	1.404	-0.990	0.283	1.024	0.559	0.888	< .001	1	7
ADV-RTC_3	72	5.069	1.397	-0.859	0.283	0.823	0.559	0.903	< .001	1	7
ADV-RTC_4	72	5.264	1.374	-1.366	0.283	2.467	0.559	0.830	< .001	1	7

Table 9 *CRM Descriptive Statistics for Refined Pilot Data*

Item	Valid	Mean	Std. Deviation	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Shapiro-Wilk	P-value of Shapiro-Wilk	Min	Max
CRM-COM_1	72	5.444	1.185	-0.777	0.283	0.561	0.559	0.892	< .001	2	7
CRM-COM_2	72	5.222	1.258	-0.434	0.283	-0.542	0.559	0.915	< .001	2	7
CRM-COM_3	72	5.194	1.401	-1.053	0.283	1.368	0.559	0.874	< .001	1	7
CRM-COM_4	72	5.528	1.186	-0.302	0.283	-0.927	0.559	0.891	< .001	3	7
CRM-COM_5	72	5.292	1.261	-0.575	0.283	0.130	0.559	0.903	< .001	2	7
CRM-COM_6	72	5.292	1.294	-0.326	0.283	-0.765	0.559	0.910	< .001	2	7
CRM-PAR_1	72	5.25	1.381	-1.125	0.283	1.236	0.559	0.867	< .001	1	7
CRM-PAR_2	72	5.236	1.379	-0.705	0.283	0.321	0.559	0.910	< .001	1	7
CRM-PAR_3	72	5.181	1.357	-1.139	0.283	1.418	0.559	0.869	< .001	1	7
CRM-PAR_4	72	5.25	1.499	-1.113	0.283	1.177	0.559	0.869	< .001	1	7
CRM-FAC_1	72	5.569	1.019	-0.440	0.283	-0.293	0.559	0.894	< .001	3	7
CRM-FAC_2	72	5.306	1.328	-0.549	0.283	-0.227	0.559	0.898	< .001	2	7
CRM-FAC_3	72	5.306	1.057	-0.868	0.283	1.238	0.559	0.875	< .001	2	7
CRM-FAC_4	72	5.444	1.174	-0.885	0.283	0.851	0.559	0.883	< .001	2	7
CRM-FAC_5	72	5.375	1.080	-0.736	0.283	0.758	0.559	0.888	< .001	2	7
CRM-NEG_1	72	5.389	1.205	-0.998	0.283	1.856	0.559	0.884	< .001	1	7
CRM-NEG_2	72	5.361	1.346	-1.086	0.283	1.017	0.559	0.868	< .001	1	7
CRM-NEG_3	72	5.181	1.336	-1.070	0.283	2.260	0.559	0.859	< .001	1	7
CRM-NEG_4	72	5.375	1.144	-1.019	0.283	2.576	0.559	0.870	< .001	1	7
CRM-NEG_5	72	5.319	1.382	-1.028	0.283	1.297	0.559	0.883	< .001	1	7
CRM-NEG_6	72	5.403	1.195	-1.038	0.283	2.056	0.559	0.879	< .001	1	7
CRM-NEG_7	72	5.347	1.291	-0.803	0.283	0.589	0.559	0.896	< .001	1	7
CRM-NEG_8	72	5.264	1.414	-1.192	0.283	1.870	0.559	0.862	< .001	1	7
CRM-NEG_9	72	5.125	1.174	-0.947	0.283	1.601	0.559	0.885	< .001	1	7

Table 10

COR Descriptive Statistics for Refined Pilot Data

Item	Valid	Mean	Std. Deviation	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Shapiro-Wilk	P-value of Shapiro-Wilk	Min	Max
COR_1	72	5.375	1.168	-0.125	0.283	-0.789	0.559	0.901	< .001	3	7
COR_2	72	5.222	1.302	-1.017	0.283	1.460	0.559	0.882	< .001	1	7
COR_3	72	5.500	1.101	-0.326	0.283	-0.305	0.559	0.888	< .001	3	7
COR_4	72	5.194	1.479	-0.829	0.283	0.415	0.559	0.898	< .001	1	7
COR_5	72	5.056	1.403	-0.762	0.283	0.150	0.559	0.903	< .001	1	7

Analysis of Pilot Study Data via EFA and PCA

An Exploratory Factor Analysis (EFA) and Principal Component Analysis (PCA) were used to determine if the study survey instrument yielded distinct factors that could be used to measure the phenomenon of the study properly. The results of these analyses are shown here.

Exploratory Factor Analysis

As in the initial pilot, EFA was completed on each second-order factor, OCE, ADV, and CRM, as well as on COR. This allowed for analysis of each first-order factor within the proper second-order context.

The Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity were employed on the items from each second-order factor to ensure that the correlation matrix was not random. For this to be true, the Bartlett value was tested to be less than 0.05, and the KMO was tested to be greater than 0.5. The values fell within range for each factor, indicating that factor analysis would be appropriate for the sample because of sufficiently strong correlation between the variables.

After ensuring the correlation matrix was sufficient, EFA was run on the factors of OCE, ADV, CRM, and COR. Parallel analysis was executed to determine the number of factors to extract. In all cases, oblique (promax) rotation was utilized.

To select factors, scree plots were evaluated to investigate factors computed by parallel analysis. This yielded a set of factors less than theorized. Therefore, factors were manually set to the number of factors in the theoretical model based on their empirical and conceptual foundation (T. A. Brown, 2015). Observed variable loadings within each factor were used to determine the most parsimonious model to keep (Moore, 2012; Williams et al., 2010). The results of the EFA are shown in Table 11, followed by a discussion of salient factors.

Table 11 - *Refined Pilot - Exploratory Factor Analysis Results*

Factor Loadings - OCE					
	Factor 1	**Factor 2**	**Factor 3**	**Factor 4**	**Uniqueness**
OCE_STR_1	0.967				0.195
OCE_STR_2	0.715				0.210
OCE_STR_3	0.845				0.120
OCE_STR_4	0.697				0.207
OCE_STR_5	0.821				0.331
OCE_LOC_1		0.784			0.228
OCE_LOC_5		0.697			0.268
OCE_LOC_9		0.725			0.309
OCE_TER_2			0.773		0.346
OCE_TER_3			0.594		0.474
OCE_TER_4			0.752		0.339
OCE_UNA_1				0.620	0.556
OCE_UNA_2				0.658	0.478
OCE_UNA_5				0.613	0.425
OCE_UNA_4				0.625	0.587

KMO: 0.847; **Bartlett:** <.001
Cronbach's Alpha: OCE_STR: 0.938; OCE_LOC: 0.863; OCE_TER: 0.811; OCE_UNA: 0.749
McDonald's Omega: OCE_STR: 0.940; OCE_LOC: 0.865; OCE_TER: 0.813; OCE_UNA: 0.758

Factor Loadings – OCE_LDR (AUT & REA)		
	Factor 1	**Uniqueness**
OCE_AUT_1	0.740	0.452
OCE_AUT_2	0.778	0.395
OCE_AUT_3	0.885	0.217
OCE_AUT_4	0.838	0.297
OCE_AUT_5	0.890	0.208
OCE_AUT_6	0.884	0.219
OCE_AUT_7	0.879	0.227
OCE_AUT_8	0.906	0.180
OCE_AUT_9	0.756	0.428
OCE_AUT_10	0.733	0.463
OCE_AUT_11	0.795	0.368
OCE_AUT_12	0.867	0.248
OCE_AUT_13	0.761	0.422
OCE_REA_1	0.758	0.425
OCE_REA_2	0.810	0.344
OCE_REA_3	0.859	0.263
OCE_REA_4	0.816	0.333

Factor Loadings - CRM			
	Factor 1	**Factor 2**	**Uniqueness**
CRM-COM_1	0.890		0.289
CRM-COM_2	0.759		0.387
CRM-COM_3	0.808		0.395
CRM-COM_6	0.760		0.380
CRM-PAR_1	0.713		0.432
CRM-PAR_4	0.646		0.391
CRM-FAC_1	0.683		0.557
CRM-FAC_2	0.605		0.640
CRM-NEG_4		0.864	0.277
CRM-NEG_7		0.621	0.584
CRM-NEG_8		0.700	0.538
CRM-NEG_9		0.800	0.370

KMO: 0.847; **Bartlett:** <.001
Cronbach's Alpha: CRM Psychological: 0.903; CRM Physical: 0.820
McDonald's Omega: CRM Psychological: 0.906; CRM Physical: 0.823

Factor Loadings - ADV			
	Factor 1	**Factor 2**	**Uniqueness**
ADV-THR_1	0.621		0.298
ADV-THR_2	0.793		0.313
ADV-THR_3	0.738		0.396
ADV-THR_4	0.902		0.285
ADV-THR_5	0.843		0.281
ADV-THR_8	0.568		0.417
ADV-THR_9	0.877		0.174
ADV-THR_10	0.776		0.262
ADV-THR_11	0.743		0.417
ADV-RTC_1		0.844	0.412
ADV-RTC_2		0.680	0.358
ADV-RTC_3		0.519	0.420
ADV-RTC_4		0.814	0.316

KMO: 0.913; **Bartlett:** <.001
Cronbach's Alpha: ADV_THR: 0.949; ADV_RTC: 0.863
McDonald's Omega: ADV_THR: 0.949; ADV_RTC: 0.865

Factor Loadings - COR		
	Factor 1	**Uniqueness**
COR_1	0.544	0.704
COR_4	0.551	0.697
COR_5	0.940	0.117

KMO: 0.613; **Bartlett:** <.001
Cronbach's Alpha: COR: 0.702
McDonald's Omega: COR: 0.738

Organizational Cultural Entrenchment

Parallel analysis based on factor analysis indicated that the model should have two factors for OCE. However, theory suggests that five factors should be in the model. Therefore, a five-factor and then a four-factor model were investigated by manually setting the number of factors. The five-factor model did not yield five distinct factors. The four-factor model yielded four distinct and adequate factors in structural inertia (OCE_STR), external locus of control (OCE_LOC), uncertainty avoidance (OCE_UNA), and territoriality (OCE_TER), as shown in Table 11.

Internal Consistency Reliability was measured by Cronbach's alpha and McDonald's omega for each of the factors of OCE. The Cronbach alpha values of these factors fell within the acceptable range of > 0.7 (0.749 – 0.938) (Gliem & Gliem, 2003; Taber, 2018).

The factors of authoritarianism (OCE_AUT) and reactiveness (OCE_REA) had significant cross-loading with the other factors of OCE. However, as shown in Table 11, when these items were extracted into a single factor, all loadings were 0.70 or higher. This matches with theory as these two factors speak to an aggregate leadership style that, when considered together, contribute to general OCE.

Because of their theoretical importance, the researcher kept OCE_AUT and OCE_REA in the survey instrument for the full study, assuming that a more significant sample size would yield a distinct factor.

Actively Destructive Voice

Parallel analysis based on factor analysis indicated that there should be a single factor in the model for ADV. However, theory suggests that two factors should be in the model for this secondary factor. The two-factor model yielded two distinct and adequate factors in first-order factors of threat rigidity and resistance to change, as shown in Table 11.

Internal Consistency Reliability was measured by Cronbach's alpha and McDonald's omega for each of the factors of ADV. The Cronbach alpha values of these factors fell within the acceptable range of > 0.7 (0.863 – 0.949) (Gliem & Gliem, 2003; Taber, 2018).

Change Resistance Mitigation

Parallel analysis based on factor analysis indicated that there should be two factors in the model for the second-order factor of CRM, which is in alignment with the theory of psychological and physical contract renegotiation. A two-factor model was investigated using both parallel analysis based on FA and a manual setting of two factors. In both cases, a two-factor model yielded two distinct and adequate first-order factors.

The first of the first-order factors found is comprised of communication, participation, and facilitation, as was suggested by theory as measuring psychological contract renegotiation. The second of these first-order factors stands

as a discrete factor for measuring physical contract renegotiation, as seen in Table 11.

Internal Consistency Reliability was measured by Cronbach's alpha and McDonald's omega for each of the factors of CRM. The Cronbach alpha values of these factors fell within the acceptable range of > 0.7 (0.820 – 0.903) (Gliem & Gliem, 2003; Taber, 2018).

Coercion

Parallel analysis based on factor analysis indicated that there should be a single factor in the model for COR. The analysis yielded a single factor for coercion but with lower loading than desired. As this factor is relevant to theory, these loadings were accepted, and the factor was included in the full study to determine if a greater sample would yield a higher loading. The EFA factor loading is shown in Table 11.

Internal Consistency Reliability was measured by Cronbach's alpha and McDonald's omega for the factor of COR. The Cronbach alpha value of this factor fell within the acceptable range of > 0.7 (0.702) (Gliem & Gliem, 2003; Taber, 2018).

Discussion

Using EFA, the first-order OCE factors of structural inertia, internal locus of control, authoritarianism, and territoriality were found to be significant to the study. Further, even though the first-order factors of AUT and REA were not included in

the OCE factors because of cross-loading, they show a strong correlation to each other, as theorized. As such, they were included in the full study because of their theoretical significance.

The first-order factors of threat rigidity and resistance to change were found to be significant and adequate for the second-order factor of ADV. Also, the first-order factors of communication, participation, and facilitation, as well as negotiation were found to be significant and adequate for the second-order factor of CRM.

Finally, the single factor of COR was found to have loadings that were lower than desired. However, this factor was kept due to its theoretical relevance and in the hopes that a larger sample would yield a greater loading.

Principal Component Analysis

EFA analysis resulted in the reduction of items loaded onto latent factors. To further ensure that the correct survey items were chosen, a principal component analysis (PCA) was executed to gain deeper insights into the data (Joliffe & Morgan, 1992). This test was run to refine the measure utilizing PCA as a more descriptive, rather than modeling, technique (Unkel & Trendafilov, 2010). The PCA analysis provided a view from the perspective of variance within the observed items to complement the correlation view provided by the EFA (T. A. Brown, 2015). The results of the PCA are shown in Table 12.

Table 12 - *Refined Pilot - Principal Component Analysis Results*

Component Loadings - OCE					
	RC1	RC2	RC3	RC4	Uniqueness
OCE_STR_1	0.957				0.161
OCE_STR_2	0.690				0.182
OCE_STR_3	0.804				0.127
OCE_STR_4	0.713				0.175
OCE_STR_5	0.926				0.208
OCE_LOC_1		0.779			0.215
OCE_LOC_3		0.684			0.368
OCE_LOC_5		0.788			0.197
OCE_LOC_9		0.827			0.220
OCE_TER_2			0.772		0.306
OCE_TER_3			0.763		0.319
OCE_TER_4			0.785		0.278
OCE_UNA_1				0.808	0.311
OCE_UNA_2				0.686	0.357
OCE_UNA_4				0.673	0.436
OCE_UNA_5				0.693	0.320

Δ from EFA: OCE_LOC_3 added

Component Loadings – OCE_LDR		
	RC1	Uniqueness
OCE_AUT_1	0.760	0.423
OCE_AUT_2	0.794	0.369
OCE_AUT_3	0.889	0.210
OCE_AUT_4	0.848	0.280
OCE_AUT_5	0.895	0.199
OCE_AUT_6	0.889	0.209
OCE_AUT_7	0.886	0.215
OCE_AUT_8	0.907	0.177
OCE_AUT_9	0.774	0.401
OCE_AUT_10	0.752	0.435
OCE_AUT_11	0.809	0.346
OCE_AUT_12	0.874	0.237
OCE_AUT_13	0.779	0.393
OCE_REA_1	0.776	0.398
OCE_REA_2	0.823	0.322
OCE_REA_3	0.866	0.251
OCE_REA_4	0.828	0.314

Component Loadings - CRM			
	RC1	RC2	Uniqueness
CRM_COM_1	0.903		0.254
CRM_COM_2	0.792		0.334
CRM_COM_3	0.840		0.341
CRM_COM_6	0.787		0.340
CRM_PAR_1	0.749		0.376
CRM_PAR_4	0.670		0.346
CRM_FAC_1	0.743		0.476
CRM_FAC_2	0.672		0.561
CRM_NEG_4		0.880	0.242
CRM_NEG_7		0.724	0.451
CRM_NEG_8		0.799	0.397
CRM_NEG_9		0.852	0.284

Δ from EFA: None

Component Loadings - COR		
	RC1	Uniqueness
COR_1	0.752	0.435
COR_4	0.756	0.428
COR_5	0.869	0.245

Δ from EFA: None

Component Loadings - ADV			
	RC1	RC2	Uniqueness
ADV_THR_2	0.822		0.268
ADV_THR_3	0.802		0.349
ADV_THR_4	0.926		0.245
ADV_THR_5	0.879		0.236
ADV_THR_9	0.871		0.173
ADV_THR_10	0.781		0.219
ADV_THR_11	0.815		0.338
ADV_RTC_1		0.949	0.239
ADV_RTC_2		0.721	0.279
ADV_RTC_4		0.819	0.224

Δ from EFA: ADV_THR_1, ADV_THR_8, and ADV_RTC_3 removed

Discussion

As shown in the EFA, the items of OCE loaded onto four strong components with support for the single loading of the leadership component described by authoritarianism and reactiveness, as shown in Table 12. The factor of OCE_LDR was chosen to remain in the model for the full study as it was assumed that a larger sample size would reveal OCE_LDR to be a distinct factor.

The items of ADV were shown to effectively load into two latent components, supported by the items of threat rigidity (THR) and resistance to change (RTC). This is reflective of the findings of the EFA.

As in the EFA, the items representing the first-order factors of psychological and physical contract renegotiation loaded well onto the second-order component of CRM. These factors were distinct and there were no deltas in the salient items from the EFA.

The items found to load onto coercion in the EFA also loaded onto the component in the PCA calculation. The component loadings in the PCA were found to be greater than 0.7, which is an improvement over the loadings just over 0.5 in the EFA. No observed items were changed from the EFA.

Summary of Refined Pilot

The pilot study was used to ensure that the survey instrument to be used for the full study is valid, reliable, and accurately measures the constructs of interest.

The refined pilot study was the second pilot iteration, which featured instrument improvements in terms of items, instructions, and IER checks.

Data from the 72 pilot participants confirmed that the survey instrument sufficiently measures the items under study, yielding distinct, theoretically relevant latent factors. Although some factor loadings were shown to be low in the EFA, the pilot provided confidence in proceeding with the survey instrument in the full study.

Full Study Findings

Overview

The full study was performed utilizing the survey instrument that was improved and then utilized within the refined pilot study. All survey items used in the refined pilot questionnaire were retained for the full study as the participants were gathered from the MTurk platform and were required to complete all items. Gathering data for the complete set of survey items provided another opportunity to ensure that the most appropriate items were used to measure the phenomena at hand.

The full study data collection was executed to acquire sufficient samples for the study. Then, an EFA and PCA study were completed on the full data set as further verification of the observed variable set. This was then confirmed through a CFA. Finally, CB-SEM and PLS-SEM were employed for hypothesis testing.

Sample Selection

As in the pilot study, the population of the study was employees from G7 and EU nations who had been in a company that was merged with or acquired since the year 2000.

Data Collection

The study utilized the CloudResearch/MTurk crowdsourcing platform to gather study participants from all G7 and EU nations. Initial responses yielded a sample population that was not proportionately distributed across the G7 and EU nations based on their M&A activity (M&A Statistics by Countries, 2023). To gather more participants from low-response nations, surveys were specifically targeted at these nations, excluding high-response nations (i.e., the United States).

The initial sample set contained 1013 responses. Samples that were not qualified as being from G7 or EU nations or having been in an M&A were removed. Further, responses were rejected where there was evidence of IER (J. Huang et al., 2014; J. L. Huang et al., 2012, 2015).

IER and satisficing, "conserving time and energy and yet producing an answer that seems good enough for the purposes at hand," (Schaeffer & Presser, 2003, p. 68) were considered during data cleaning. This required evaluating the data to find participants who were not fully engaged and were using the same value for responses, thus "straight-lining" answers. Managing satisficing required discretion to determine which participants were merely rushing through answers to

complete the survey and which had very similar responses to multiple survey items. As noted by Vriesema & Gehlbach (2021), the burden lies on the researcher to determine which participant results should be removed to ensure data quality.

For participants found to have straight-lined, all answers were removed (Schonlau & Toepoel, 2015). These participants were found utilizing Microsoft Excel to examine the standard deviation of their responses. Those with a standard deviation of zero across responses were rejected as participants (Keshminder, 2020).

This reduced the sample to 475 participants, which exceeded the minimum sample size of 400 for this population, as dictated by both Yamane's formula, Cochran's formula, and recommendations by Krejcie and Morgan (Adam, 2020; Krejcie & Morgan, 1970; Uakarn et al., 2021; Yamane, 1967).

The distribution of samples removed, along with their reason for rejection, is shown in Table 13.

Table 13

Filtering of Study Participants

Total participants	**1013**
Did not agree to commitment question	12
Did not agree to informed consent	1
No M&A experience	130
Not at company long enough before M&A	55
Not at company long enough after M&A	79
Not in a G7 or EU country	75
Failed attention check 1	67
Failed attention check 2 (of remaining samples)	12
Failed logic check	29
Failed age logic check	76
Straight-lined all items	2
Remaining qualified participants	475

Participant Demographics

Demographic information of the remaining 475 participants yielded a sample of 241 males and 234 females, with 14 participants in the "Baby Boomer" generation (1946 - 1964), 87 in the "Gen X" generation (1965 - 1980), 241 in the Gen Y/Millennial generation (1981 – 1996), and 133 in the "Gen Z" generation. Nearly half of the sample (211) had been at the company from 1 – 2 years before the M&A, and nearly half of the sample (197) had been employed at their company for 1 – 2 years after the M&A. Of all the industry categories from the NAICS classification, the most prevalent ones represented in the sample were Information (103) and Manufacturing (101) (*US Business Firmographics – Company Size*,

2022). Detailed demographic information for the sample is shown in Table 14, Table 15, and Table 16.

Table 14

Participant Demographics - General

Variable	Category	Frequency	%
Gender			
	Male	241	50.74%
	Female	234	49.26%
Age Group			
	Baby Boomers (1946 - 1964)	14	2.94%
	Gen X (1965 - 1980)	87	18.32%
	Gen Y / Millennials (1981 - 1996)	241	50.74%
	Gen Z (1997 - 2012)	133	28.00%

Table 15

Participant Demographics - Years at Company Pre- and Post-M&A

Variable	Category	Frequency	%
Years Employed At Company Before M&A			
	7 - 11 Months	68	14.32%
	1 - 2 Years	211	44.42%
	3 - 5 Years	129	27.15%
	6 - 8 Years	31	6.53%
	9 - 10 Years	16	3.37%
	More than 10 Years	20	4.21%
Years Employed At Company After M&A			
	7 - 11 Months	55	11.58%
	1 - 2 Years	197	41.47%
	3 - 5 Years	128	26.95%
	6 - 8 Years	32	6.73%
	9 - 10 Years	11	2.32%
	More than 10 Years	52	10.95%

Table 16

Participant Demographics - Industry

Industry	Frequency	%
Accommodation and Food Services	5	1.05%
Administrative and Support and Waste Management and Remediation Services	8	1.68%
Agriculture, Forestry, Fishing and Hunting	1	0.21%
Arts, Entertainment, and Recreation	2	0.42%
Construction	19	4.00%
Educational Services	6	1.26%
Finance and Insurance	88	18.54%
Health Care and Social Assistance	27	5.68%
Information	103	21.68%
Management of Companies and Enterprises	22	4.63%
Manufacturing	101	21.27%
Mining, Quarrying, and Oil and Gas Extraction	3	0.63%
Other Services (except Public Administration)	2	0.42%
Professional, Scientific, and Technical Services	21	4.42%
Public Administration	2	0.42%
Real Estate and Rental and Leasing	7	1.47%
Retail Trade	23	4.85%
Transportation and Warehousing	19	4.00%
Utilities	5	1.05%
Wholesale Trade	11	2.32%

Effort was given to gather a sample proportionately distributed by country M&A activity. However, range restriction issues caused variance, limiting generalizability across the entire set of G7 and EU nations, as 86% of participants were from the United States (Keith et al., 2023; Landers & Behrend, 2015). Table 17 summarizes the distribution of countries represented in the sample population

along with the percentage of M&A activity per country within the study timeframe. This range restriction issue will be noted as a limitation and area for future research in Chapter 5.

Table 17

Participant Demographics - Participant Country with Sample and Population Proportions

Country	Frequency	% in Sample	% in Population
Austria	2	0.42%	0.94%
Bulgaria	1	0.21%	N/A
Canada	25	5.26%	8.44%
Finland	1	0.21%	1.27%
France	3	0.63%	6.51%
Germany	6	1.26%	6.66%
Italy	9	1.89%	2.81%
Romania	1	0.21%	N/A
Slovenia	1	0.21%	N/A
Spain	5	1.05%	3.37%
United Kingdom	12	2.53%	12.17%
United States of America	409	86.12%	39.97%
Others	0	0%	17.86%

Descriptive Statistics

Descriptive statistics for the data showed that the assumption of data normality must be rejected, as the p-value of Shapiro-Wilk was < 0.001 for all items. Further, Mardia's test of multivariate normality for skewness and kurtosis was < 0.001, indicating that the hypothesis of data normality should be rejected for all items. As in the refined pilot study, normality was not assumed because all survey questions are Likert scale items. Because of this lack of data normality, the utilization of principal axis factoring was chosen as the factor extraction method as

opposed to maximum likelihood. The skewness and kurtosis values for all observed variables are shown in Table 18, Table 19, Table 20, and Table 21.

Table 18

OCE Descriptive Statistics for Full Study Data

Item	Valid	Mean	Std. Deviation	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Shapiro-Wilk	P-value of Shapiro-Wilk	Minimum	Maximum
OCE_STR_1	475	4.636	1.552	-0.622	0.112	-0.534	0.224	0.903	< .001	1	7
OCE_STR_2	475	4.659	1.703	-0.428	0.112	-0.855	0.224	0.919	< .001	1	7
OCE_STR_3	475	4.667	1.634	-0.551	0.112	-0.545	0.224	0.919	< .001	1	7
OCE_STR_4	475	4.613	1.736	-0.448	0.112	-0.815	0.224	0.920	< .001	1	7
OCE_STR_5	475	4.728	1.650	-0.540	0.112	-0.592	0.224	0.919	< .001	1	7
OCE_STR_6	475	4.693	1.621	-0.587	0.112	-0.428	0.224	0.919	< .001	1	7
OCE_STR_7	475	4.701	1.651	-0.547	0.112	-0.600	0.224	0.917	< .001	1	7
OCE_LOC_1	475	5.107	1.261	-0.837	0.112	0.626	0.224	0.896	< .001	1	7
OCE_LOC_2	475	5.314	1.182	-0.573	0.112	0.157	0.224	0.911	< .001	1	7
OCE_LOC_3	475	5.229	1.133	-0.714	0.112	0.769	0.224	0.902	< .001	1	7
OCE_LOC_4	475	5.301	1.196	-0.724	0.112	0.574	0.224	0.903	< .001	1	7
OCE_LOC_5	475	5.078	1.322	-0.705	0.112	0.263	0.224	0.912	< .001	1	7
OCE_LOC_6	475	4.838	1.457	-0.550	0.112	-0.192	0.224	0.927	< .001	1	7
OCE_LOC_7	475	5.208	1.187	-0.584	0.112	0.255	0.224	0.912	< .001	1	7
OCE_LOC_8	475	5.225	1.157	-0.439	0.112	-0.049	0.224	0.918	< .001	1	7
OCE_LOC_9	475	5.036	1.352	-0.631	0.112	0.008	0.224	0.917	< .001	1	7
OCE_LOC_10	475	4.977	1.435	-0.587	0.112	-0.188	0.224	0.922	< .001	1	7
OCE_LOC_11	475	5.204	1.209	-0.829	0.112	1.129	0.224	0.898	< .001	1	7
OCE_LOC_12	475	5.221	1.110	-0.529	0.112	0.199	0.224	0.909	< .001	2	7
OCE_LOC_13	475	5.032	1.343	-0.719	0.112	0.274	0.224	0.912	< .001	1	7
OCE_LOC_14	475	5.286	1.124	-0.706	0.112	0.890	0.224	0.900	< .001	1	7
OCE_LOC_15	475	5.284	1.146	-0.480	0.112	-0.033	0.224	0.913	< .001	2	7

OCE_LOC_16	475	5.259	1.201	-0.752	0.112	0.641	0.224	0.900	< .001	1	7
OCE_UNA_1	475	5.434	1.060	-0.903	0.112	1.463	0.224	0.873	< .001	1	7
OCE_UNA_2	475	5.491	1.141	-0.692	0.112	0.384	0.224	0.894	< .001	2	7
OCE_UNA_3	475	5.491	1.122	-0.602	0.112	0.229	0.224	0.898	< .001	2	7
OCE_UNA_4	475	5.476	1.030	-0.599	0.112	0.354	0.224	0.892	< .001	2	7
OCE_UNA_5	475	5.657	1.010	-0.569	0.112	0.173	0.224	0.887	< .001	2	7
OCE_AUT_1	475	4.768	1.524	-0.787	0.112	-0.052	0.224	0.897	< .001	1	7
OCE_AUT_2	475	4.724	1.568	-0.599	0.112	-0.288	0.224	0.922	< .001	1	7
OCE_AUT_3	475	4.825	1.603	-0.746	0.112	-0.154	0.224	0.903	< .001	1	7
OCE_AUT_4	475	4.739	1.538	-0.604	0.112	-0.256	0.224	0.919	< .001	1	7
OCE_AUT_5	475	4.766	1.554	-0.669	0.112	-0.191	0.224	0.913	< .001	1	7
OCE_AUT_6	475	4.653	1.621	-0.548	0.112	-0.416	0.224	0.925	< .001	1	7
OCE_AUT_7	475	4.817	1.513	-0.597	0.112	-0.240	0.224	0.921	< .001	1	7
OCE_AUT_8	475	4.789	1.576	-0.725	0.112	-0.080	0.224	0.909	< .001	1	7
OCE_AUT_9	475	4.836	1.466	-0.589	0.112	-0.006	0.224	0.924	< .001	1	7
OCE_AUT_10	475	4.903	1.448	-0.710	0.112	0.130	0.224	0.915	< .001	1	7
OCE_AUT_11	475	5.059	1.423	-0.792	0.112	0.439	0.224	0.906	< .001	1	7
OCE_AUT_12	475	4.857	1.522	-0.643	0.112	-0.192	0.224	0.918	< .001	1	7
OCE_AUT_13	475	5.208	1.341	-0.749	0.112	0.457	0.224	0.906	< .001	1	7
OCE_REA_1	475	4.848	1.471	-0.752	0.112	-0.039	0.224	0.903	< .001	1	7
OCE_REA_2	475	4.865	1.542	-0.643	0.112	-0.257	0.224	0.916	< .001	1	7
OCE_REA_3	475	4.846	1.504	-0.604	0.112	-0.312	0.224	0.918	< .001	1	7
OCE_REA_4	475	4.918	1.508	-0.624	0.112	-0.268	0.224	0.915	< .001	1	7
OCE_TER_1	475	5.267	1.250	-1.102	0.112	1.287	0.224	0.863	< .001	1	7
OCE_TER_2	475	5.008	1.429	-0.629	0.112	-0.018	0.224	0.919	< .001	1	7
OCE_TER_3	475	5.114	1.404	-0.861	0.112	0.481	0.224	0.896	< .001	1	7
OCE_TER_4	475	4.992	1.420	-0.793	0.112	0.200	0.224	0.903	< .001	1	7

Table 19

ADV Descriptive Statistics for Full Study Data

Item	Valid	Mean	Std. Deviation	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Shapiro-Wilk	P-value of Shapiro-Wilk	Minimum	Maximum
ADV_THR_1	475	5.093	1.405	-1.072	0.112	0.780	0.224	0.865	< .001	1	7
ADV_THR_2	475	4.939	1.519	-0.724	0.112	0.070	0.224	0.910	< .001	1	7
ADV_THR_3	475	5.173	1.350	-0.968	0.112	0.910	0.224	0.886	< .001	1	7
ADV_THR_4	475	5.048	1.451	-0.859	0.112	0.337	0.224	0.896	< .001	1	7
ADV_THR_5	475	4.989	1.479	-0.921	0.112	0.380	0.224	0.887	< .001	1	7
ADV_THR_6	475	5.084	1.383	-0.733	0.112	0.354	0.224	0.911	< .001	1	7
ADV_THR_7	475	4.998	1.443	-0.749	0.112	0.207	0.224	0.907	< .001	1	7
ADV_THR_8	475	5.069	1.511	-0.998	0.112	0.531	0.224	0.876	< .001	1	7
ADV_THR_9	475	5.053	1.451	-0.966	0.112	0.640	0.224	0.884	< .001	1	7
ADV_THR_10	475	5.107	1.430	-0.981	0.112	0.695	0.224	0.883	< .001	1	7
ADV_THR_11	475	4.958	1.581	-0.802	0.112	-0.026	0.224	0.897	< .001	1	7
ADV_RTC_1	475	5.204	1.218	-0.973	0.112	1.198	0.224	0.883	< .001	1	7
ADV_RTC_2	475	5.206	1.405	-0.921	0.112	0.695	0.224	0.892	< .001	1	7
ADV_RTC_3	475	5.101	1.377	-0.698	0.112	0.185	0.224	0.912	< .001	1	7
ADV_RTC_4	475	5.181	1.338	-1.003	0.112	0.890	0.224	0.877	< .001	1	7

Table 20

CRM Descriptive Statistics for Full Study Data

Item	Valid	Mean	Std. Deviation	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Shapiro-Wilk	P-value of Shapiro-Wilk	Minimum	Maximum
CRM_COM_1	475	5.394	1.055	-1.012	0.112	1.907	0.224	0.867	< .001	1	7
CRM_COM_2	475	5.345	1.225	-0.634	0.112	0.366	0.224	0.908	< .001	1	7
CRM_COM_3	475	5.364	1.146	-0.882	0.112	1.404	0.224	0.888	< .001	1	7
CRM_COM_4	475	5.419	1.106	-0.471	0.112	0.121	0.224	0.906	< .001	1	7
CRM_COM_5	475	5.362	1.138	-0.692	0.112	0.736	0.224	0.897	< .001	1	7
CRM_COM_6	475	5.375	1.111	-0.631	0.112	0.605	0.224	0.903	< .001	1	7
CRM_PAR_1	475	5.352	1.137	-1.197	0.112	2.077	0.224	0.852	< .001	1	7
CRM_PAR_2	475	5.368	1.273	-0.877	0.112	0.935	0.224	0.891	< .001	1	7
CRM_PAR_3	475	5.442	1.209	-0.906	0.112	1.234	0.224	0.886	< .001	1	7
CRM_PAR_4	475	5.398	1.237	-1.113	0.112	1.730	0.224	0.869	< .001	1	7
CRM_FAC_1	475	5.429	1.060	-0.978	0.112	1.714	0.224	0.870	< .001	1	7
CRM_FAC_2	475	5.343	1.235	-0.662	0.112	0.321	0.224	0.906	< .001	1	7
CRM_FAC_3	475	5.392	1.100	-0.650	0.112	0.842	0.224	0.899	< .001	1	7
CRM_FAC_4	475	5.463	1.146	-0.958	0.112	1.308	0.224	0.878	< .001	1	7
CRM_FAC_5	475	5.564	1.072	-0.983	0.112	2.042	0.224	0.869	< .001	1	7
CRM_NEG_1	475	5.379	1.089	-1.002	0.112	2.009	0.224	0.872	< .001	1	7
CRM_NEG_2	475	5.333	1.271	-0.798	0.112	0.619	0.224	0.899	< .001	1	7
CRM_NEG_3	475	5.337	1.239	-0.868	0.112	1.305	0.224	0.890	< .001	1	7
CRM_NEG_4	475	5.375	1.117	-0.897	0.112	1.680	0.224	0.881	< .001	1	7
CRM_NEG_5	475	5.282	1.236	-0.980	0.112	1.403	0.224	0.885	< .001	1	7
CRM_NEG_6	475	5.366	1.175	-0.719	0.112	0.849	0.224	0.901	< .001	1	7

CRM_NEG_7	475	5.320	1.209	-0.842	0.112	1.054	0.224	0.895	< .001	1	7
CRM_NEG_8	475	5.200	1.344	-0.908	0.112	0.850	0.224	0.892	< .001	1	7
CRM_NEG_9	475	5.293	1.103	-0.656	0.112	0.847	0.224	0.902	< .001	1	7

Table 21

COR Descriptive Statistics for Full Study Data

Item	Valid	Mean	Std. Deviation	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Shapiro-Wilk	P-value of Shapiro-Wilk	Minimum	Maximum
COR_1	475	5.408	1.074	-0.941	0.112	1.902	0.224	0.876	< .001	1	7
COR_2	475	5.198	1.415	-0.825	0.112	0.469	0.224	0.900	< .001	1	7
COR_3	475	5.371	1.137	-0.737	0.112	0.967	0.224	0.897	< .001	1	7
COR_4	475	5.232	1.287	-0.845	0.112	0.667	0.224	0.898	< .001	1	7
COR_5	475	5.259	1.237	-0.858	0.112	0.900	0.224	0.894	< .001	1	7

Evaluation of Model Factors via EFA and PCA

MTurk was used to gather data requiring all fields to be answered, leaving no missing data. Since the dataset was complete and all items passed tests of normality, the entire survey instrument, with all original items, was utilized for the full study to investigate whether the factors found in the pilot would remain significant and adequate in the full study. Because of this choice, an EFA and PCA were run again on the full study data to ensure that the observed variables still loaded sufficiently on their latent factors with this new, complete data set.

Exploratory Factor Analysis

As in the refined pilot, an EFA was executed to ensure that the observed variables sufficiently loaded onto their theoretical latent factors without excessive cross-loading. Also, the EFA sought to determine if the factor of OCE_LDR (as measured by OCE_AUT and OCE_REA) would emerge as a distinct factor. The EFA was performed with parallel analysis based on FA and by setting the number of factors manually, when necessary, to correlate with theory. In all cases, oblique (promax) rotation was utilized.

Correlation among variables was investigated via KMO and Bartlett's test of sphericity. The results of these tests indicated that factor analysis would be appropriate for the sample and that the variables under study were not correlated. Specific values are shown in Table 22.

This EFA on the full study data yielded the same factors as the pilot, and most factors were found to load at 0.6 or greater, which was found to be adequate by Swanson & Holton (2005). Two items loaded between 0.5 and 0.6 but were left in the factor loadings due to their meaningfulness and salience to the factor (T. A. Brown, 2015). Lower-loading items and items loading lower than 0.5 were excluded from the model to ensure the most parsimonious model. The results of the full study EFA are shown in Table 22.

Table 22 - *Full Study - Exploratory Factor Analysis Results*

Factor Loadings - OCE

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Uniqueness
OCE_STR_1		0.817				0.297
OCE_STR_2		0.689				0.229
OCE_STR_3		0.696				0.229
OCE_AUT_9	0.704					0.464
OCE_AUT_12	0.678					0.348
OCE_REA_2	0.819					0.308
OCE_REA_4	0.885					0.267
OCE_TER_1				0.804		0.369
OCE_TER_3				0.827		0.328
OCE_TER_4				0.507		0.475
OCE_UNA_2					0.693	0.517
OCE_UNA_4					0.614	0.610
OCE_UNA_5					0.660	0.531
OCE_LOC_5			0.675			0.466
OCE_LOC_10			0.799			0.355
OCE_LOC_13			0.660			0.501

KMO: 0.914; **Bartlett:** <.001
Cronbach's Alpha: OCE_STR: 0.895; OCE_LOC: 0.786; OCE_TER: 0.799; OCE_UNA: 0.703; OCE_LDR (via AUT and REA): 0.876
McDonald's Omega: OCE_STR: 0.898; OCE_LOC: 0.790; OCE_TER: 0.795; OCE_UNA: 0.700; OCE_LDR (via AUT and REA): 0.877

Factor Loadings - ADV

	Factor 1	Factor 2	Uniqueness
ADV_THR_2	0.699		0.357
ADV_THR_5	0.836		0.305
ADV_THR_8	0.712		0.345
ADV_THR_11	0.711		0.388
ADV_RTC_1		0.616	0.522
ADV_RTC_2		0.610	0.390
ADV_RTC_3		0.692	0.389
ADV_RTC_4		0.867	0.308

KMO: 0.921; **Bartlett:** <.001
Cronbach's Alpha: ADV_THR: 0.881; ADV_RTC: 0.852
McDonald's Omega: ADV_THR: 0.881; ADV_RTC: 0.855

Factor Loadings - CRM

	Factor 1	Factor 2	Uniqueness
CRM_COM_3	0.714		0.543
CRM_COM_6	0.753		0.457
CRM_PAR_2	0.683		0.464
CRM_PAR_3	0.746		0.454
CRM_PAR_4	0.690		0.444
CRM_FAC_2	0.675		0.550
CRM_FAC_5	0.580		0.544
CRM_NEG_1		0.659	0.606
CRM_NEG_5		0.774	0.344
CRM_NEG_9		0.692	0.483

KMO: 0.904; **Bartlett:** <.001
Cronbach's Alpha: CRM Psychological: 0.876; CRM Physical: 0.759
McDonald's Omega: CRM Psychological: 0.877; CRM Physical: 0.771

Factor Loadings - COR

	Factor 1	Uniqueness
COR_2	0.714	0.490
COR_4	0.607	0.631
COR_5	0.774	0.401

KMO: 0.675; **Bartlett:** <.001
Cronbach's Alpha: COR: 0.737
McDonald's Omega: COR: 0.741

Organizational Cultural Entrenchment

For OCE, the observed variables of structural inertia, internal locus of control, uncertainty avoidance, and territoriality were found to load sufficiently on their latent factors. Further, the observed variables of reactiveness and authoritarianism loaded on the same theoretical factor of leadership and within the other OCE constructs. This was suggested by theory and supported by the common loading in the pilot EFA, as shown in Table 22.

Internal Consistency Reliability was measured by Cronbach's alpha and McDonald's omega for each of the factors of OCE. The Cronbach alpha values of these factors fell within the acceptable range of > 0.7 (0.703 – 0.895) (Gliem & Gliem, 2003; Taber, 2018).

Actively Destructive Voice

For the dependent variable of ADV, the observed variables of threat rigidity and resistance to change were found to load sufficiently on their latent factors, as shown in Table 22.

Internal Consistency Reliability was measured by Cronbach's alpha and McDonald's omega for the two factors of ADV. The Cronbach alpha values of these factors fell within the acceptable range of > 0.7 (0.852 – 0.881) (Gliem & Gliem, 2003; Taber, 2018).

Change Resistance Mitigation

For the moderating variable of CRM, the data showed that the first-order, latent factors of communication, facilitation, and participation load onto the same factor, indicating that these signify a single factor, psychological contract renegotiation, as was borne from theory and discussed in Chapter 2. Further, the EFA results indicated that the latent factor of physical contract renegotiation has sufficient items, as shown in Table 22.

Internal Consistency Reliability was measured by Cronbach's alpha and McDonald's omega for the factors of CRM. The Cronbach alpha values of these factors fell within the acceptable range of > 0.7 (0.759 – 0.876) (Gliem & Gliem, 2003; Taber, 2018).

Coercion

The moderating factor of coercion was found to have sufficiently loading items, as shown in Table 22. Further, Internal Consistency Reliability was measured by Cronbach's alpha and McDonald's omega for the factor of COR. The Cronbach alpha value fell within the acceptable range of > 0.7 (0.737) (Gliem & Gliem, 2003; Taber, 2018).

Principal Component Analysis

As in the refined pilot study, a PCA was executed following the EFA to ensure that the correct items were chosen to represent their latent factors,

considering both specific and common variances. The results of the full study PCA are shown in Table 23.

Table 23 - *Full Study - Principal Component Analysis Results*

Factor Loadings - OCE						
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Uniqueness
OCE-STR_1		0.943				0.166
OCE-STR_2		0.743				0.184
OCE-STR_3		0.769				0.177
OCE-AUT_9	0.852					0.312
OCE-AUT_12	0.681					0.293
OCE-REA_2	0.778					0.26
OCE-REA_4	0.889					0.213
OCE-UNA_2					0.773	0.348
OCE-UNA_4					0.787	0.375
OCE-UNA_5					0.789	0.357
OCE-LOC_5				0.820		0.3
OCE-LOC_10				0.796		0.275
OCE-LOC_13				0.814		0.318
OCE-TER_3			0.872			0.261
OCE-TER_4			0.854			0.238
OCE-TER_2			0.764			0.276

Δ from EFA: OCE_TER_1 replaced by OCE_TER_2 in PCA. OCE_TER_1 more appropriate for SEM.

Factor Loadings - ADV			
	Factor 1	Factor 2	Uniqueness
ADV_THR_2	0.824		0.266
ADV_THR_5	0.884		0.237
ADV_THR_8	0.770		0.280
ADV_THR_11	0.865		0.273
ADV_RTC_1		0.935	0.300
ADV_RTC_2		0.706	0.307
ADV_RTC_3		0.711	0.324
ADV_RTC_4		0.815	0.273

Factor Loadings - CRM			
	Factor 1	Factor 2	Uniqueness
CRM_COM_3	0.792		0.449
CRM_COM_6	0.804		0.386
CRM_PAR_2	0.729		0.406
CRM_PAR_3	0.794		0.387
CRM_PAR_4	0.731		0.390
CRM_FAC_2	0.760		0.461
CRM_FAC_5	0.639		0.477
CRM_NEG_1		0.885	0.332
CRM_NEG_5		0.765	0.290
CRM_NEG_9		0.783	0.340

Factor Loadings - COR		
	Factor 1	Uniqueness
COR_2	0.820	0.327
COR_4	0.771	0.406
COR_5	0.840	0.294

Discussion

As shown in the EFA, the five factors of structural inertia, leadership (as comprised by authoritarianism and reactiveness leadership styles), uncertainty avoidance, external locus of control, and territoriality load as independent factors of OCE. All items loaded greater than 0.6.

Note that for the factor of territoriality, the OCE-TER_1 item that was found to be significant in the EFA was switched with OCE-TER_2 for PCA. While this loaded better for PCA, OCE-TER_1 was found to be a more appropriate factor for later SEM calculations.

The factor of ADV was shown to load most appropriately with the same items as in the EFA, with all factors loading above 0.7. This revealed two distinct factors for ADV.

The factor of CRM was shown to load most appropriately with the same items in PCA as were found in the EFA. These psychological and physical contract renegotiation factors loaded well, with all items loading greater than 0.6.

The factor of coercion loaded with the same items in the PCA as in the EFA. All items loaded with a value greater than 0.7. These PCA results are shown in Table 23.

Confirmatory Factor Analysis

After performing EFA and PCA on the data set of 475 participants, a Confirmatory Factor Analysis (CFA) was run to confirm the validity of the model's

latent factors. CFA was performed using the JASP software program utilizing the Lavaan statistical analysis package (Rosseel, 2012).

The factors of OCE, ADV, CRM, and COR were each evaluated, in turn, with consideration for the goodness of data and model fit. In each case, the latent factors were confirmed to fit the model well, based on fit thresholds from the literature.

Correlation among variables was investigated via KMO and Bartlett's test of sphericity. The results of these tests indicated that factor analysis would be appropriate for the sample and that the variables under study were not correlated, as shown in Table 24.

Table 24 - *Full Study - Confirmatory Factor Analysis Results*

Factor Loadings - OCE						95% Confidence Interval		
Factor	**Indicator**	**Estimate**	**Std. Error**	**z-value**	**p**	**Lower**	**Upper**	**Std. Est. (all)**
Factor 1	OCE-STR_1	0.774	0.019	39.97	< .001	0.736	0.812	0.774
	OCE-STR_2	0.894	0.014	64.376	< .001	0.867	0.922	0.894
	OCE-STR_3	0.883	0.014	62.119	< .001	0.856	0.911	0.883
Factor 2	OCE-LOC_5	0.751	0.023	33.073	< .001	0.707	0.796	0.751
	OCE-LOC_10	0.804	0.023	35.24	< .001	0.759	0.849	0.804
	OCE-LOC_13	0.738	0.025	28.986	< .001	0.688	0.788	0.738
Factor 3	OCE-AUT_9	0.738	0.021	34.346	< .001	0.695	0.780	0.738
	OCE-AUT_12	0.843	0.016	53.062	< .001	0.812	0.874	0.843
	OCE-REA_2	0.837	0.016	51.017	< .001	0.805	0.869	0.837
	OCE-REA_4	0.831	0.016	51.258	< .001	0.800	0.863	0.831
Factor 4	OCE-TER_1	0.704	0.027	26.166	< .001	0.651	0.757	0.704
	OCE-TER_3	0.755	0.023	32.40	< .001	0.709	0.800	0.755
	OCE-TER_4	0.787	0.023	33.59	< .001	0.741	0.833	0.787
Factor 5	OCE-UNA_2	0.766	0.036	21.48	< .001	0.696	0.836	0.766
	OCE-UNA_4	0.631	0.035	18.153	< .001	0.562	0.699	0.631
	OCE-UNA_5	0.640	0.036	17.882	< .001	0.570	0.711	0.640

Correlation: KMO = 0.918; Bartlett <.001
Goodness of Fit: CFI = 0.998, TLI = 0.997, SRMR = 0.036, and RMSEA = 0.039
Convergent Validity via AVE: OCE_STR = 0.73; OCE_LOC = 0.59; OCE_LDR = 0.66; OCE_TER = 0.56; OCE_UNA = 0.47
Composite Reliability: OCE_STR = 0.888; OCE_LOC = 0.809; OCE_LDR = 0.886; OCE_TER = 0.793; OCE_UNA = 0.721
Discriminate Validity via HTMT: Highest value = 0.814

Factor Loadings - ADV						95% Confidence Interval		
Factor	**Indicator**	**Estimate**	**Std. Error**	**z-value**	**p**	**Lower**	**Upper**	**Std. Est. (all)**
Factor 1	ADV-THR_2	0.815	0.016	49.778	< .001	0.783	0.847	0.815
	ADV-THR_5	0.809	0.016	50.202	< .001	0.777	0.840	0.809
	ADV-THR_8	0.802	0.017	47.063	< .001	0.769	0.836	0.802
	ADV-THR_11	0.793	0.018	44.816	< .001	0.758	0.828	0.793
Factor 2	ADV-RTC_1	0.665	0.025	26.129	< .001	0.615	0.715	0.665
	ADV-RTC_2	0.803	0.017	46.375	< .001	0.769	0.837	0.803
	ADV-RTC_3	0.777	0.019	41.795	< .001	0.741	0.814	0.777
	ADV-RTC_4	0.793	0.017	45.441	< .001	0.759	0.827	0.793

Correlation: KMO = 0.924; Bartlett <.001
Goodness of Fit: CFI = 0.999, TLI = 0.998, SRMR = 0.027, and RMSEA = 0.042
Convergent Validity via AVE: ADV-THR= 0.648; ADV-RTC = 0.580
Composite Reliability: ADV-THR= 0.880; ADV-RTC = 0.846
Discriminate Validity via HTMT: 0.869

Factor Loadings - CRM						95% Confidence Interval		
Factor	**Indicator**	**Estimate**	**Std. Error**	**z-value**	**p**	**Lower**	**Upper**	**Std. Est. (all)**
Factor 1	CRM-COM_3	0.681	0.024	28.462	< .001	0.634	0.727	0.681
	CRM-COM_6	0.751	0.021	35.880	< .001	0.710	0.792	0.751
	CRM-PAR_2	0.754	0.020	37.881	< .001	0.715	0.793	0.754
	CRM-PAR_3	0.722	0.022	33.308	< .001	0.680	0.765	0.722
	CRM-PAR_4	0.758	0.021	36.929	< .001	0.718	0.798	0.758
	CRM-FAC_2	0.713	0.024	29.426	< .001	0.665	0.760	0.713
	CRM-FAC_5	0.725	0.023	30.971	< .001	0.679	0.771	0.725
Factor 2	CRM-NEG_1	0.616	0.032	19.183	< .001	0.553	0.679	0.616
	CRM-NEG_5	0.837	0.022	38.361	< .001	0.794	0.880	0.837
	CRM-NEG_9	0.754	0.025	30.171	< .001	0.705	0.802	0.754

Correlation: KMO = 0.911; Bartlett <.001
Goodness of Fit: CFI = 0.996, TLI = 0.995, SRMR = 0.036, and RMSEA = 0.048
Convergent Validity via AVE: CRM Psych = 0.532; CRM Phys = 0.549
Composite Reliability: CRM Psych = 0.888; CRM Phys = 0.783
Discriminate Validity via HTMT: 0.683

Factor Loadings - COR						95% Confidence Interval		
Factor	**Indicator**	**Estimate**	**Std. Error**	**z-value**	**p**	**Lower**	**Upper**	**Std. Est. (all)**
Factor 1	COR_2	0.759	0.036	20.784	< .001	0.687	0.830	0.759
	COR_4	0.616	0.036	17.068	< .001	0.546	0.687	0.616
	COR_5	0.756	0.037	20.416	< .001	0.683	0.828	0.756

Correlation: KMO = 0.681; Bartlett <.001
Goodness of Fit: CFI = 0.999, TLI = 0.998, SRMR = 0.027, and RMSEA = 0.042
Convergent Validity via AVE: COR = 0.509
Composite Reliability: COR = 0.755
Discriminate Validity via HTMT: N/A

Organizational Cultural Entrenchment

The first-order latent factors of structural inertia, external locus of control, uncertainty avoidance, territoriality, and leadership via authoritarianism and reactiveness were evaluated to confirm fit as individual factors loading onto the second-order factor of OCE.

The goodness of fit was evaluated via the comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). All criteria for fit fell within the cutoff limits recommended by Hu & Bentler (1999). The fit values for the OCE factor were CFI = 0.998, TLI = 0.997, SRMR = 0.036, and RMSEA = 0.039. Further, factor loadings of all items were greater than 0.6, as shown in Table 24.

Convergent validity of the items for the factors of OCE was evaluated via the average variance extracted (AVE) metric. All factors yielded an AVE value greater than the minimum acceptable value of 0.5, with the exception of UNA (Hair et al., 2022). Since UNA's AVE value was found to be just short of the floor at 0.47, it was kept as a factor due to its theoretical significance. The AVE values for each OCE factor are shown in Table 24.

Composite reliability for the factors of OCE was also assessed, yielding the values shown in Table 24. These values are all greater than 0.7, demonstrating good internal consistency of the items in each factor (Hair et al., 2011).

Discriminant validity was assessed via the Heterotrait-Monotrait (HTMT) ratio to ensure that each factor was empirically distinct from other factors in the model. Henseler et al. (2015) suggest that a threshold value of 0.90 is utilized for models with conceptually similar constructs and that a ceiling of 0.85 is used, when possible, as a more conservative ceiling. For the factors of OCE, all HTMT values fell below the more conservative ceiling of 0.85, with the highest HTMT value being found at 0.814, as shown in Table 24.

Actively Destructive Voice

The first-order latent factors of threat rigidity and resistance to change were evaluated for confirmation of fit as individual factors loading onto the second-order factor of ADV.

The goodness of fit was evaluated via the comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). All criteria for fit fell within the cutoff limits recommended by Hu & Bentler (1999). The fit values for the ADV factor were CFI = 0.999, TLI = 0.998, SRMR = 0.027, and RMSEA = 0.042. Further, factor loadings of all items were greater than 0.6, as shown in Table 24.

The convergent validity of the items of the factors of ADV was evaluated by the average variance extracted (AVE) metric. All factors yielded an AVE value greater than the minimum acceptable value of 0.5 (Hair et al., 2022). The AVE values for each ADV factor are shown in Table 24.

Composite reliability for the factors of ADV was also assessed, yielding the values shown in Table 24. These values are all greater than 0.7, demonstrating good internal consistency of the items in each factor (Hair et al., 2011).

Discriminant validity was assessed via the Heterotrait-Monotrait (HTMT) ratio to ensure that the two factors of ADV were empirically distinct from each other. Henseler et al. (2015) suggest that a threshold value of 0.90 is utilized for models with conceptually similar constructs and that a ceiling of 0.85 is used, when possible, as a more conservative ceiling. For the factors of ADV, the HTMT value between the two first-order factors fell between the high and conservative values suggested by Henseler at 0.869. As Henseler noted, when measuring conceptually similar factors, a higher HTMT value is acceptable, and given that THR and RTC are conceptually similar, the researcher has accepted that the discriminate validity of these factors is acceptable for this study. This value can be seen in Table 24.

Change Resistance Mitigation

The first-order latent factors of psychological contract renegotiation (as measured by communication, participation, and facilitation) and physical contract

renegotiation (as measured by negotiation) were evaluated for confirmation of fit as individual factors loading onto the second-order factor of CRM.

The goodness of fit was evaluated via the comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). All criteria for fit fell within the cutoff limits recommended by Hu & Bentler (1999). The fit values for the OCE factor were CFI = 0.996, TLI = 0.995, SRMR = 0.036, and RMSEA = 0.048. Further, factor loadings of all items were greater than 0.6, as shown in Table 24.

The convergent validity of the items for the factors of CRM was evaluated by the average variance extracted (AVE) metric. Both first-order factors yielded an AVE value greater than the minimum acceptable value of 0.5. The AVE values for both CRM factors are shown in Table 24.

Composite reliability for CRM factors was also assessed, yielding the values shown in Table 24. These values are all greater than 0.7, demonstrating good internal consistency of the items in each factor (Hair et al., 2011).

Discriminant validity was assessed via the Heterotrait-Monotrait (HTMT) ratio to ensure that each factor was empirically distinct from other factors in the model. The HTMT value between the factors was 0.683, well below Henseler's conservative ceiling of 0.85. This can be seen in Table 24.

Coercion

Coercion stands as a single factor with three observed variables in the parsimonious model. As such, CFI, TLI, RMSEA, and SRMR are not useful measures. However, factor loadings of all items were greater than 0.6, as shown in Table 24.

The convergent validity of the items of COR was evaluated via the average variance extracted (AVE) metric. The items of this factor yielded an AVE value just greater than the minimum acceptable value of 0.5 at 0.509. The AVE value for COR is shown in Table 24.

Composite reliability for the factor of COR was also assessed, yielding the value shown in Table 24. This value is greater than 0.7, demonstrating good internal consistency of the items in this factor (Hair et al., 2011).

COR is a stand-alone, first-order factor. As it is not in a second-order factor, there are no other first-order factors against which to test it for discriminant validity. Therefore, there is no HTMT metric to be considered for this factor.

Common Method Variance

Common Method Variance (CMV) has been found to be an issue in studies from a wide range of disciplines, ranging from international business, information systems, and social sciences that can artificially inflate measures of internal consistency and variable correlation. This issue is precipitated by various factors, including self-reporting questionnaires, how questions are asked, and contextual influences (Chang et al., 2010; P. M. Podsakoff et al., 2003; Sharma et al., 2009).

Chang et al. (2010) suggest a variety of possible remedies for CMV, each of which was employed in this study. First, they suggest that the measure for the dependent variable be sourced differently from the independent variables. In this study, all factor measures were gleaned from a diverse set of authors. Second, mixing the order of questions was suggested. This was accomplished by mixing instruments in the study questionnaire with different authors and by interspersing IER check questions at various points throughout the survey. Third, Chang et al. suggest that a complicated regression model reduces the likelihood of CMV. Given that this study utilizes a complex, second-order model, it meets the criteria for reducing CMV. Finally, a post-hoc detection of CMV via a Harman one-factor analysis was employed, as suggested.

Harman's single factor test was utilized to test for CMV as a post-hoc measure. The test was applied with all observed variables of the OCE, CRM, COR, and ADV factors, yielding a single-factor AVE below the threshold of 0.5 at 0.408, thus implying that CMV was not an issue in the study instrument or methodology (Aguirre-Urreta & Hu, 2019; P. Podsakoff & Organ, 1986).

Hypothesis Testing via Covariance-Based Structural Equation Modeling

Covariance-based structural equation modeling (CB-SEM) was employed to test model fit and for hypothesis testing. Investigation of the data began in the

JASP tool, utilizing the underlying Lavaan library. However, interaction testing became cumbersome in the JASP tool as the level of model complication introduced an intricate series of error covariance terms that were difficult to manage within JASP. It became clear that RStudio would provide a better user interface for working with this detailed, extensive model (Posit team, 2023).

RStudio (using the same underlying Lavaan library as used in JASP) was employed to evaluate the structural, measurement, and interaction model for the dataset with 475 participants.

Assessment of the Quality of the Reflective Measurement Model

The measurement model for all factors was run using the CFA function within RStudio utilizing the robust standard errors setting with the diagonally weighted least squared (DWLS) estimator. The DWLS estimator was chosen, as Likert-scale data has a small number of categories that are not assumed to meet the assumption of multivariate normality (Li, 2016; Mîndrilă, 2010).

The goodness of fit was evaluated via CFI, TLI, RMSEA, and SRMR measures. All criteria for fit fell within cutoff limits. Fit values for the OCE factor were CFI = 0.979, TLI = 0.977, SRMR = 0.070, and RMSEA = 0.044. All standard estimates were greater than 0.6, as shown in Table 25.

Table 25

CB-SEM - Measurement Model Variable Estimations

Latent Variables:							
		Estimate	**Std.Err**	**z-value**	**P(>|z|)**	**Std.lv**	**Std.all**
OCESTR =~							
	OCE_STR_1	1.000				1.217	0.784
	OCE_STR_2	1.282	0.074	17.354	0.000	1.560	0.916
	OCE_STR_3	1.182	0.070	16.941	0.000	1.439	0.880
OCELOC =~							
	OCE_LOC_5	1.000				0.967	0.732
	OCE_LOC_10	1.149	0.070	16.395	0.000	1.112	0.774
	OCE_LOC_13	1.001	0.073	13.789	0.000	0.968	0.721
OCELDR =~							
	OCE_AUT_9	1.000				1.067	0.727
	OCE_AUT_12	1.223	0.072	16.931	0.000	1.305	0.857
	OCE_REA_2	1.169	0.083	14.070	0.000	1.247	0.808
	OCE_REA_4	1.129	0.079	14.269	0.000	1.205	0.799
OCETER =~							
	OCE_TER_1	1.000				0.885	0.708
	OCE_TER_3	1.216	0.083	14.672	0.000	1.076	0.767
	OCE_TER_4	1.245	0.100	12.484	0.000	1.102	0.776
OCEUNA =~							
	OCE_UNA_2	1.000				0.855	0.750
	OCE_UNA_4	0.736	0.089	8.251	0.000	0.629	0.611
	OCE_UNA_5	0.746	0.094	7.938	0.000	0.638	0.632
ADVTHR =~							

	ADV_THR_2	1.000				1.226	0.807
	ADV_THR_5	0.981	0.050	19.516	0.000	1.202	0.813
	ADV_THR_8	1.023	0.049	20.736	0.000	1.253	0.829
	ADV_THR_11	0.999	0.047	21.082	0.000	1.225	0.774
ADVRTC =~							
	ADV_RTC_1	1.000				0.827	0.679
	ADV_RTC_2	1.389	0.097	14.317	0.000	1.149	0.818
	ADV_RTC_3	1.335	0.094	14.186	0.000	1.104	0.801
	ADV_RTC_4	1.242	0.086	14.427	0.000	1.027	0.768
CRMPSYCH =~							
	CRM_COM_3	1.000				0.738	0.644
	CRM_COM_6	1.074	0.089	12.102	0.000	0.792	0.713
	CRM_PAR_2	1.285	0.137	9.386	0.000	0.948	0.745
	CRM_PAR_3	1.164	0.117	9.977	0.000	0.859	0.710
	CRM_PAR_4	1.304	0.136	9.572	0.000	0.962	0.778
	CRM_FAC_2	1.156	0.118	9.830	0.000	0.853	0.690
	CRM_FAC_5	0.969	0.099	9.783	0.000	0.715	0.667
CRMPHYS =~							
	CRM_NEG_1	1.000				0.676	0.621
	CRM_NEG_5	1.462	0.138	10.595	0.000	0.989	0.800
	CRM_NEG_9	1.189	0.126	9.411	0.000	0.804	0.729
COR =~							
	CRM_COR_2	1.000				1.066	0.753
	CRM_COR_4	0.701	0.076	9.275	0.000	0.747	0.581
	CRM_COR_5	0.879	0.064	13.821	0.000	0.937	0.758
OCE =~							
	OCESTR	1.000				0.727	0.727

	OCELOC	1.029	0.101	10.150	0.000	0.941	0.941
	OCELDR	0.930	0.079	11.759	0.000	0.771	0.771
	OCETER	0.844	0.097	8.709	0.000	0.844	0.844
	OCEUNA	0.500	0.067	7.416	0.000	0.517	0.517
ADV =~							
	ADVTHR	1.000				0.915	0.915
	ADVRTC	0.703	0.059	11.855	0.000	0.953	0.953
CRM =~							
	CRMPSYCH	1.000				0.791	0.791
	CRMPHYS	1.010	0.183	5.531	0.000	0.872	0.872

Assessment of the Structural Model

The structural model for all factors was run using the CFA function within RStudio utilizing the robust standard errors setting with the diagonally weighted least squared (DWLS) estimator. The DWLS estimator was chosen, as Likert-scale data has a small number of categories that are not assumed to meet the assumption of multivariate normality (Mîndrilă, 2010).

The goodness of fit was evaluated via CFI, TLI, RMSEA, and SRMR measures. All criteria for fit fell within cutoff limits. Fit values for the OCE factor were CFI = 0.973, TLI = 0.971, SRMR = 0.073, and RMSEA = 0.047. All standard estimates were greater than 0.6, as shown in Table 26.

Table 26

CB-SEM - Structural Model Variable Estimations

Latent Variables:							
		Estimate	**Std.Err**	**z-value**	**P(>|z|)**	**Std.lv**	**Std.all**
OCESTR =~							
	OCE_STR_1	1.000				1.217	0.784
	OCE_STR_2	1.282	0.074	17.354	0.000	1.560	0.916
	OCE_STR_3	1.182	0.070	16.940	0.000	1.439	0.880
OCELOC =~							
	OCE_LOC_5	1.000				0.967	0.732
	OCE_LOC_10	1.149	0.070	16.395	0.000	1.112	0.774
	OCE_LOC_13	1.001	0.073	13.790	0.000	0.968	0.721
OCELDR =~							
	OCE_AUT_9	1.000				1.067	0.727
	OCE_AUT_12	1.223	0.072	16.931	0.000	1.305	0.857
	OCE_REA_2	1.169	0.083	14.069	0.000	1.247	0.808
	OCE_REA_4	1.129	0.079	14.269	0.000	1.205	0.799
OCETER =~							
	OCE_TER_1	1.000				0.885	0.708
	OCE_TER_3	1.216	0.083	14.672	0.000	1.076	0.767

	OCE_TER_4	1.245	0.100	12.483	0.000	1.102	0.776
OCEUNA =~							
	OCE_UNA_2	1.000				0.855	0.750
	OCE_UNA_4	0.736	0.089	8.252	0.000	0.629	0.611
	OCE_UNA_5	0.746	0.094	7.938	0.000	0.638	0.632
ADVTHR =~							
	ADV_THR_2	1.000				1.226	0.807
	ADV_THR_5	0.981	0.050	19.518	0.000	1.202	0.813
	ADV_THR_8	1.023	0.049	20.738	0.000	1.254	0.830
	ADV_THR_11	0.999	0.047	21.112	0.000	1.224	0.774
ADVRTC =~							
	ADV_RTC_1	1.000				0.824	0.677
	ADV_RTC_2	1.394	0.099	14.100	0.000	1.149	0.818
	ADV_RTC_3	1.342	0.096	13.953	0.000	1.106	0.803
	ADV_RTC_4	1.247	0.088	14.243	0.000	1.028	0.768
CRMPSYCH =~							
	CRM_COM_3	1.000				0.738	0.644
	CRM_COM_6	1.073	0.089	12.101	0.000	0.792	0.713
	CRM_PAR_2	1.285	0.137	9.385	0.000	0.948	0.745
	CRM_PAR_3	1.164	0.117	9.977	0.000	0.859	0.710
	CRM_PAR_4	1.304	0.136	9.571	0.000	0.962	0.778
	CRM_FAC_2	1.156	0.118	9.829	0.000	0.853	0.690
	CRM_FAC_5	0.969	0.099	9.782	0.000	0.715	0.667
CRMPHYS =~							
	CRM_NEG_1	1.000				0.676	0.621
	CRM_NEG_5	1.462	0.138	10.594	0.000	0.989	0.800
	CRM_NEG_9	1.189	0.126	9.410	0.000	0.804	0.729
COR =~							
	CRM_COR_2	1.000				1.066	0.753
	CRM_COR_4	0.701	0.076	9.275	0.000	0.747	0.581
	CRM_COR_5	0.879	0.064	13.820	0.000	0.937	0.758
OCE =~							
	OCESTR	1.000				0.727	0.727
	OCELOC	1.029	0.101	10.150	0.000	0.941	0.941
	OCELDR	0.930	0.079	11.759	0.000	0.771	0.771
	OCETER	0.844	0.097	8.709	0.000	0.844	0.844
	OCEUNA	0.500	0.067	7.415	0.000	0.517	0.517
ADV =~							
	ADVTHR	1.000				0.916	0.916
	ADVRTC	0.699	0.060	11.681	0.000	0.952	0.952
CRM =~							
	CRMPSYCH	1.000				0.791	0.791
	CRMPHYS	1.010	0.183	5.530	0.000	0.872	0.872

The regressions from the structural model yielded significant relationships reflective of the study hypotheses. OCE and COR were shown to have a significant and positive relationship with ADV, and CRM was shown to have a significant negative relationship with ADV, as hypothesized.

The control variables FIRM_OPYEARS and FIRM_NUMEMP were shown to have negative relationships with ADV. However, the FIRM_NUMEMP relationship was found to be insignificant. These regression values are shown in Table 27.

Table 27

CB-SEM - Structural Model Regression Estimates

Regressions:							
		Estimate	**Std.Err**	**z-value**	**P(>|z|)**	**Std.lv**	**Std.all**
ADV ~							
	OCE	1.210	0.263	4.608	0.000	0.953	0.953
	CRM	-0.984	0.397	-2.479	0.013	-0.512	-0.512
	COR	0.492	0.132	3.713	0.000	0.467	0.467
	FIRM_OPYEARS	-0.015	0.006	-2.456	0.014	-0.013	-0.195
	FIRM_NUMEMP	-0.010	0.045	-0.225	0.822	-0.009	-0.012

Interaction Model Analysis

The interaction model to validate the hypotheses of the moderating factors was run in RStudio, utilizing the SEM R package. In preparation for these analyses, interaction terms were created via double-mean-centering each item to be included within the interaction term. This methodology was employed to alleviate

any computational issues that might arise from data where normality is slightly askew (J.-M. Becker et al., 2018; Lin et al., 2010).

Interaction and error covariance terms were created in the model, describing the interaction of each item within each factor against each item of each associated factor. This led to the creation of a very large number of interaction and error covariance terms due to the large number of variable combinations in the model.

After creating the model definition, the interaction model was run within RStudio on the researcher's machine (2023 MacBook Pro, Apple M2 Max processor with 32 GB RAM). After more than eight hours of running, the run was terminated as it would not complete.

In an effort to create a model that would complete and converge, parceling was employed to reduce the number of interactions between observed variables and reduce the computational load required to compute the model (G. W. Cheung et al., 2021; Cortina et al., 2021; Sardeshmukh & Vandenberg, 2017). Through this methodology, factors were simplified to have no more than three parceled, observed variables per factor. After parceling the data and modifying the interaction term and error covariance definitions, the model was rerun within RStudio. Again, this model would not run to completion on the researcher's machine, and the run was terminated.

Data was considered again to determine if there were outlier issues that could be the cause of non-convergent interaction model behavior. IER within the data

was captured via an analysis of the interquartile range (IQR) of the individual responses within the remaining participant data. Conditional formatting within the Microsoft Excel spreadsheet software was used to highlight responses to individual items that fell outside of the IQR * (+/-) 1.5 (Höhne & Schlosser, 2018; Leiner, 2019). Participants with multiple items outside of the IQR * 1.5 range (10+) were considered outliers based on IER and were jettisoned from the data set. This left a total of 465 participants in the study.

After removing further outliers via IQR analysis, the model (utilizing the same R code as on the researcher's machine) was run within Microsoft Azure's Machine Learning Studio on a Standard_E16s_v3 virtual machine with 16 cores and 128 GB RAM in the hopes that a machine with more RAM would provide room for the model to solve. In this instance, the interaction model did run to completion. However, the model did not converge, thus yielding no useful results for the study.

The lack of interaction model results, due to model complexity, led to an exploration of partial least squares SEM to complete the interaction model evaluation.

Hypothesis Testing via Partial Least Squares Structural Equation Modeling

Partial least squares structural equation modeling (PLS-SEM) is an SEM framework that focuses on the prediction and explanation of constructs. It is well-

suited for analyses where “the structural model is complex and includes many constructs, indicators, and/or model relationships” and where “the research objective is to better understand increasing complexity by exploring theoretical extensions of established theories.” Also, PLS-SEM is “not constrained by identification issues, even if the model becomes complex – as is the situation that typically restricts CB-SEM use” (Hair et al., 2021, pp. 22-23). Further, the results from CB-SEM and PLS-SEM can be used as complements for each other in the analysis of the study results (Awang et al., 2015). Due to these benefits, the complexity of the second-order model under study, and the difficulties in arriving at a converged interaction model in CB-SEM, PLS-SEM became a logical choice in the extension of analysis for this study.

PLS-SEM analysis was accomplished using RStudio 2023.06.1 (Posit team, 2023). The seminr 2.3.2 library was utilized for PLS-SEM calculations and bootstrapping. Further, the methodology for model evaluation demonstrated by Hair et al. (2021) was extensively followed in this work. After migrating from CB-SEM to PLS-SEM, the SEM evaluation was reinitiated to evaluate the measurement and structural models as well as moderation effects utilizing PLS-SEM.

Assessment of the Quality of the Reflective Measurement Model

Analysis of the model showed sufficient reliability and validity through analysis of the metrics of indicator loading and reliability, internal consistency and reliability, and convergent validity, described below.

Indicator Loading and Reliability

Indicator loading (Table 28) showed that all observed variable loading values exceeded the recommended threshold of 0.708, with the exception of two values of CRM_PSYCH, which were shown to be slightly lower at 0.688 and 0.701. These lower loading values were kept, as their removal was not found to substantially increase internal consistency reliability (Hair et al., 2021).

Indicator loading also showed that the control of NUMEMP was too low to consider. Thus, this variable was jettisoned from future calculations.

Table 28

Indicator Loading of Measurement Model Factors

	OCESTR	OCELOC	OCEUNA	OCETER	OCELDR	CRMPSYCH	CRMPHYS	COR	OPYEARS	ADVTHR	ADVRTC
OCE_STR_1	0.882										
OCE_STR_2	0.920										
OCE_STR_3	0.914										
OCE_LOC_1		0.815									
OCE_LOC_2		0.855									
OCE_LOC_3		0.810									
OCE_UNA_1			0.859								
OCE_UNA_2			0.726								
OCE_UNA_3			0.770								
OCE_TER_1				0.825							
OCE_TER_2				0.849							
OCE_TER_3				0.813							
OCE_LDR_1					0.798						
OCE_LDR_2					0.858						
OCE_LDR_3					0.858						
OCE_LDR_4					0.867						
ADV_THR_1										0.849	
ADV_THR_2										0.863	
ADV_THR_3										0.839	
ADV_THR_4										0.824	
ADV_RTC_1											0.773
ADV_RTC_2											0.829
ADV_RTC_3											0.815
ADV_RTC_4											0.837

CRM_PSYCH_1	**0.688**			
CRM_PSYCH_2	0.760			
CRM_PSYCH_3	0.767			
CRM_PSYCH_4	0.751			
CRM_PSYCH_5	0.768			
CRM_PSYCH_6	0.718			
CRM_PSYCH_7	**0.701**			
CRM_PHYS_1		0.727		
CRM_PHYS_2		0.856		
CRM_PHYS_3		0.817		
COR_1			0.824	
COR_2			0.724	
COR_3			0.831	
FIRM_OPYEARS				1.000

Indicator reliability in the PLS-SEM model was established by examining indicator-explained variance. The values demonstrated good indicator reliability and communality within each factor, with only two of the indicators falling just below the suggested threshold of 0.5 at 0.473 and 0.491 (Hair et al., 2021).

Table 29

Indicator Reliability of the Measurement Model Items

	OCESTR	OCELOC	OCEUNA	OCETER	OCELDR	CRMPSYCH	CRMPHYS	COR	OPYEARS	ADVTHR	ADVRTC
OCE_STR_1	0.777										
OCE_STR_2	0.846										
OCE_STR_3	0.836										
OCE_LOC_1		0.664									
OCE_LOC_2		0.731									
OCE_LOC_3		0.656									
OCE_UNA_1			0.737								
OCE_UNA_2			0.527								
OCE_UNA_3			0.593								
OCE_TER_1				0.681							
OCE_TER_2				0.721							
OCE_TER_3				0.661							
OCE_LDR_1					0.637						
OCE_LDR_2					0.737						
OCE_LDR_3					0.736						
OCE_LDR_4					0.752						
ADV_THR_1										0.720	
ADV_THR_2										0.746	
ADV_THR_3										0.704	
ADV_THR_4										0.679	
ADV_RTC_1											0.598
ADV_RTC_2											0.688
ADV_RTC_3											0.665

ADV_RTC_4					0.700
CRM_PSYCH_1	**0.473**				
CRM_PSYCH_2	0.577				
CRM_PSYCH_3	0.588				
CRM_PSYCH_4	0.564				
CRM_PSYCH_5	0.590				
CRM_PSYCH_6	0.515				
CRM_PSYCH_7	**0.491**				
CRM_PHYS_1		0.528			
CRM_PHYS_2		0.733			
CRM_PHYS_3		0.667			
CRM_COR_1			0.679		
CRM_COR_2			0.524		
CRM_COR_3			0.691		
FIRM_OPYEARS				1.000	

Internal Consistency and Reliability

All factors are shown in Table 30 to have good internal consistency and reliability with Cronbach's alpha, rhoC, and (the more conservative) rhoA values at or exceeding 0.7 (Hair et al., 2021; Jöreskog, 1970).

Convergent Validity

Based on average variance extracted (AVE), convergent validity is shown in Table 30 to be acceptable for all factors as values exceeded the floor of 0.5 (Hair et al., 2019).

Table 30

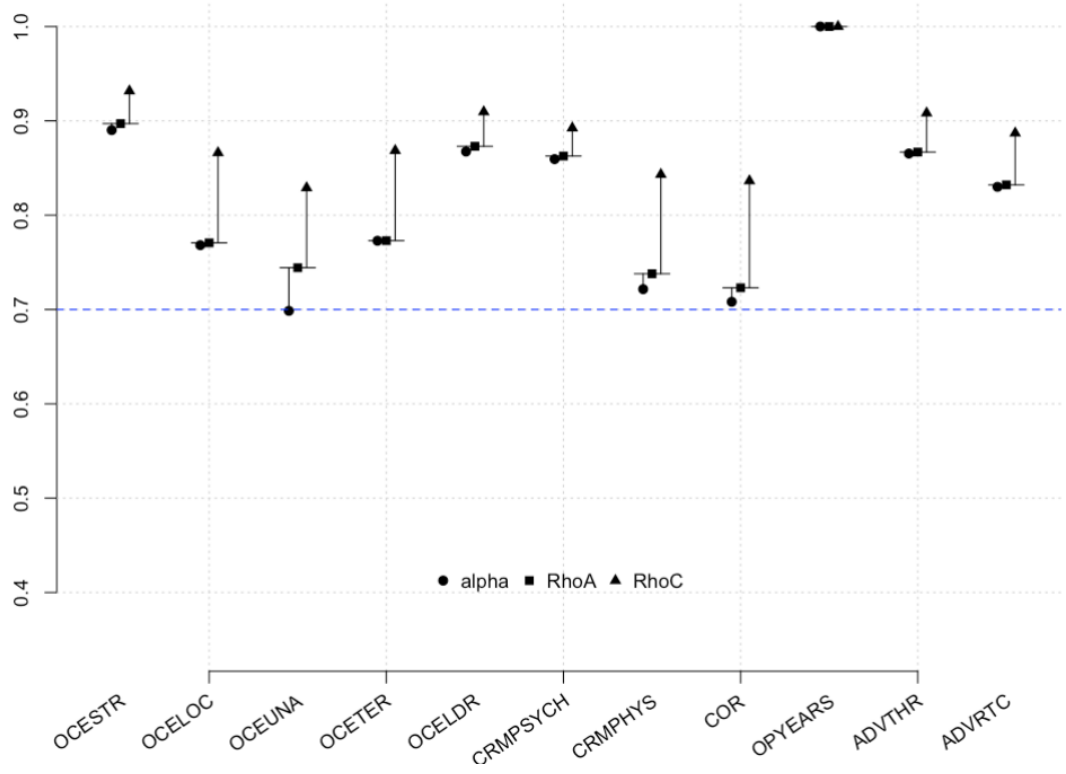
Factor Internal Consistency and Reliability

	alpha	rhoC	AVE	rhoA
OCESTR	0.890	0.932	0.820	0.897
OCELOC	0.768	0.866	0.683	0.771
OCEUNA	0.699	0.829	0.619	0.744
OCETER	0.773	0.868	0.688	0.773
OCELDR	0.867	0.910	0.716	0.873
CRMPSYCH	0.859	0.892	0.543	0.863
CRMPHYS	0.722	0.843	0.643	0.738
COR	0.708	0.836	0.631	0.723
OPYEARS	1.000	1.000	1.000	1.000
ADVTHR	0.865	0.908	0.712	0.867
ADVRTC	0.830	0.887	0.663	0.832

These measures of consistency and reliability are depicted as exceeding a threshold of 0.7, as in the plot shown in Figure 13. Note that the control variable OPYEARS has a value of 1.0 as it is measured as a single observed variable.

Figure 13

Measure Composite Reliability Plot



Discriminant Validity

Discriminant validity was assessed using the Heterotrait-Monotrait ratio of correlations (HTMT), Fornell-Larcker criterion, and cross-loading analysis. Analysis was completed on first-order factors only as the second-order components repeated the indicators from the first, leading to erroneously high HTMT values (Sarstedt et al., 2019, p. 203). This assessment found that observed variables from all reflective factors within the model share the strongest relationships with their given factors. The HTMT values all fell below the more conservative threshold of

0.85, except for ADVRTC-ADVTHR (0.864) and ADVRTC-COR (0.858), which still fell below the prescribed ceiling of 0.90 (Hair et al., 2021). Note also that OCELDR is of slight concern because of HTMT and cross-loading findings.

Table 31

Heterotrait-Monotrait (HTMT) Correlations for Discriminate Validity

	OCESTR	OCELOC	OCEUNA	OCETER	OCELDR	CRMPSYCH	CRMPHYS	COR	OPYEARS	ADVTHR	ADVRTC
OCESTR											
OCELOC	0.675										
OCEUNA	0.269	0.578									
OCETER	0.621	0.770	0.633								
OCELDR	0.806*	0.693	0.302	0.680							
CRMPSYCH	0.410	0.737	0.746	0.703	0.433						
CRMPHYS	0.423	0.690	0.779	0.734	0.478	0.746					
COR	0.500	0.773	0.635	0.658	0.625	0.659	0.706				
OPYEARS	0.169	0.198	0.101	0.218	0.126	0.165	0.168	0.143			
ADVTHR	0.651	0.835	0.319	0.652	0.732	0.397	0.482	0.782	0.214		
ADVRTC	0.607	0.828	0.418	0.785	0.645	0.589	0.569	0.858*	0.138	0.864*	

Note. * Factor pairs that are of slight concern for discriminate validity within HTMT, Forell & Larker analysis, and cross-loading investigation

The Fornell & Larcker analysis showed the square root of the constructs' AVE on the diagonal with correlations to the construct in the values below. This measure is assumed to show sufficient discriminate validity if the correlations below the AVE for each factor are less than the factor AVE (Hair et al., 2021, p. 86). This analysis supports the discriminate validity of each factor. Note that the OPYEARS control variable is a single-item factor, thus showing an AVE of 1.000, as is expected.

Table 32

Fornell & Larcker Discriminate Validity Check

	OCESTR	OCELOC	OCEUNA	OCETER	OCELDR	CRMPSYCH	CRMPHYS	COR	OPYEARS	ADVTHR	ADVRTC
OCESTR	0.905										
OCELOC	0.561	0.827									
OCEUNA	0.222	0.426	0.787								
OCETER	0.517	0.595	0.465	0.829							
OCELDR	0.712*	0.569	0.240	0.562	0.846						
CRMPSYCH	0.358	0.598	0.579	0.572	0.376	0.737					
CRMPHYS	0.337	0.519	0.548	0.546	0.381	0.594	0.802				
COR	0.399	0.578	0.449	0.492	0.487	0.525	0.512	0.794			
OPYEARS	-0.161	-0.173	0.075	-0.191	-0.119	-0.143	-0.149	-0.127	1.000		
ADVTHR	0.573	0.682	0.255	0.535	0.637	0.345	0.386	0.619	-0.200	0.844	
ADVRTC	0.523	0.664	0.334	0.630	0.551	0.501	0.441	0.664*	-0.126	0.734*	0.814

Note. * Factor pairs that are of slight concern for discriminate validity within HTMT, Fornell & Larcker analysis, and cross-loading investigation

The final measure of discriminate validity was a cross-loading analysis. This analysis showed some similarities in items between OCESTR and OCELDR. According to Tehseen & Sajilan (2017), cross-loading analysis shows acceptable discriminant validity if the loading of items onto their respective latent variables exceeds that of other latent variables. The cross-loading values for the model showed good discriminant validity based on this definition in Table 33.

Table 33

Analysis of Item Cross-Loading

	OCESTR	OCELOC	OCEUNA	OCETER	OCELDR	CRMPSYCH	CRMPHYS	COR	OPYEARS	ADVTHR	ADVRTC
OCE_STR_1	**0.882**[a]	0.449	0.199	0.447	0.583[a]	0.287	0.334	0.310	-0.103	0.456	0.446
OCE_STR_2	**0.920**[a]	0.543	0.230	0.481	0.682[a]	0.350	0.303	0.405	-0.160	0.573	0.497
OCE_STR_3	**0.914**[a]	0.526	0.172	0.474	0.663[a]	0.331	0.281	0.361	-0.171	0.520	0.475
OCE_LOC_1	0.450	**0.815**	0.383	0.496	0.448	0.523	0.519	0.486	-0.166	0.562	0.503
OCE_LOC_2	0.507	**0.855**	0.321	0.521	0.527	0.485	0.424	0.477	-0.134	0.586	0.587
OCE_LOC_3	0.434	**0.810**	0.357	0.456	0.434	0.476	0.349	0.472	-0.131	0.542	0.553
OCE_UNA_1	0.222	0.367	**0.859**	0.388	0.228	0.481	0.412	0.388	0.025	0.234	0.341
OCE_UNA_2	0.129	0.284	**0.726**	0.331	0.170	0.433	0.448	0.357	0.109	0.151	0.206
OCE_UNA_3	0.154	0.349	**0.770**	0.379	0.160	0.456	0.460	0.314	0.065	0.204	0.212
OCE_TER_1	0.400	0.481	0.411	**0.825**	0.383	0.437	0.506	0.392	-0.182	0.449	0.490
OCE_TER_2	0.425	0.480	0.426	**0.849**	0.445	0.519	0.450	0.428	-0.168	0.419	0.529
OCE_TER_3	0.457	0.516	0.323	**0.813**	0.561	0.465	0.405	0.402	-0.126	0.460	0.545
OCE_LDR_1	0.539[b]	0.414	0.205	0.434	**0.798**[b]	0.279	0.299	0.373	-0.080	0.462	0.414
OCE_LDR_2	0.609[b]	0.511	0.227	0.535	**0.858**[b]	0.343	0.342	0.414	-0.116	0.588	0.501
OCE_LDR_3	0.637[b]	0.491	0.198	0.478	**0.858**[b]	0.332	0.333	0.437	-0.093	0.541	0.467
OCE_LDR_4	0.619[b]	0.502	0.184	0.447	**0.867**[b]	0.314	0.314	0.421	-0.108	0.554	0.474
ADV_THR_1	0.524	0.576	0.230	0.437	0.533	0.298	0.314	0.548	-0.175	**0.849**[c]	0.634[c]
ADV_THR_2	0.449	0.607	0.203	0.475	0.544	0.279	0.336	0.545	-0.176	**0.863**[c]	0.609[c]
ADV_THR_3	0.470	0.582	0.249	0.487	0.523	0.306	0.365	0.532	-0.184	**0.839**[c]	0.638[c]
ADV_THR_4	0.495	0.533	0.177	0.404	0.552	0.283	0.285	0.461	-0.138	**0.824**[c]	0.597[c]
ADV_RTC_1	0.402	0.470	0.228	0.500	0.382	0.343	0.382	0.510	-0.068	0.528[c]	**0.773**[c]
ADV_RTC_2	0.445	0.596	0.306	0.522	0.477	0.433	0.357	0.575	-0.081	0.642[c]	**0.829**[c]
ADV_RTC_3	0.422	0.561	0.314	0.524	0.457	0.444	0.407	0.550	-0.158	0.613[c]	**0.815**[c]
ADV_RTC_4	0.432	0.528	0.234	0.504	0.471	0.405	0.293	0.524	-0.103	0.601[c]	**0.837**[c]

CRM_PSYCH_1	0.311	0.405	0.366	0.438	0.264	**0.688**	0.396	0.291	-0.146	0.202	0.356
CRM_PSYCH_2	0.310	0.455	0.461	0.432	0.318	**0.760**	0.456	0.349	0.005	0.244	0.403
CRM_PSYCH_3	0.220	0.442	0.457	0.388	0.248	**0.767**	0.462	0.469	-0.157	0.299	0.388
CRM_PSYCH_4	0.238	0.432	0.406	0.413	0.208	**0.751**	0.407	0.400	-0.185	0.242	0.341
CRM_PSYCH_5	0.250	0.482	0.400	0.484	0.295	**0.768**	0.468	0.418	-0.194	0.315	0.378
CRM_PSYCH_6	0.266	0.411	0.444	0.355	0.333	**0.718**	0.389	0.397	0.021	0.246	0.384
CRM_PSYCH_7	0.261	0.454	0.449	0.446	0.269	**0.701**	0.485	0.371	-0.081	0.215	0.322
CRM_PHYS_1	0.255	0.314	0.374	0.428	0.248	0.375	**0.727**	0.337	-0.050	0.245	0.314
CRM_PHYS_2	0.266	0.494	0.491	0.473	0.324	0.562	**0.856**	0.450	-0.174	0.351	0.388
CRM_PHYS_3	0.290	0.423	0.443	0.414	0.339	0.474	**0.817**	0.436	-0.119	0.322	0.356
CRM_COR_1	0.279	0.490	0.366	0.406	0.381	0.524	0.367	**0.824**	-0.164	0.523	0.571
CRM_COR_2	0.311	0.347	0.323	0.325	0.396	0.305	0.337	**0.724**	0.004	0.405	0.438
CRM_COR_3	0.363	0.521	0.378	0.431	0.391	0.403	0.508	**0.831**	-0.119	0.534	0.561
FIRM_OPYEARS	-0.161	-0.173	0.075	-0.191	-0.119	-0.143	-0.149	-0.127	**1.000**	-0.200	-0.126

Note. Some factor pairs are of slight concern for discriminate validity within HTMT, Fornell & Larcker analysis, and cross-loading investigation and are noted here:

[a] Loadings of OCELDR items are lower than OCESTR, but are approaching a significant value.

[b] Loadings of OCESTR items are lower than OCELDR, but are approaching a significant value.

[c] Loadings of ADVTHR and ADVRTC are approaching a significant cross-loading range across each.

The factors of OCESTR and OCELDR, ADVRTC and ADVTHR, ADVRTC and COR showed a tendency toward weak discriminate validity. However weak, all these factors fell within prescribed ranges. Each of these factors is theoretically significant to the study and have been intuited by the integration of salient literature (Rönkkö & Cho, 2022). Further, with the significant sample size, there are more than 45 participants per independent variable, ensuring sufficient observations for regression analysis (J. E. Bartlett et al., 2001). The assumption is that increasing the sample will continually improve discriminate validity. Therefore, each factor has been maintained as distinct within this work.

Assessment of the Structural Model

Given that the measurement findings show that the model is both reliable and valid, we turn to an assessment of the structural model. This evaluation will ensure that excess collinearity does not exist among predictor constructs. Further, the significance and relevance of structural relationships will be examined. Finally, the model's explanatory and predictive power will be assessed.

Assessment of Collinearity Issues

Collinearity among the antecedent factors of OCE, CRM, COR, and the control OPYEARS was measured using variance inflation factor (VIF) calculation (Table 34). Given that all VIF values for antecedent factors fell below 2.4, the risk of collinearity is low (J.-M. Becker et al., 2015).

Table 34

Variance Inflation Factor (VIF) Check for Collinearity

	ADV
OCE	2.149
CRM	2.004
COR	1.758
OPYEARS	1.035

Assessment of Significance and Relevance of Structural Model Relationships

The structural model calculations were generated via bootstrapping with a run of 10,000 iterations in RStudio (Abdi et al., 2013; Streukens & Leroi-Werelds, 2016). The bootstrapped loadings show significant relationships on all first and second-order items. Note that OPYEARS is a single-item construct, thus the estimate of 1.000.

Table 35

Bootstrapped Loadings for All First- and Second-Degree Model Items

	Original Est.	Bootstrap Mean	Bootstrap SD	T Stat.	2.5% CI	97.5% CI
OCESTR -> OCE	0.806	0.805	0.023	34.565	0.756	0.847
OCELOC -> OCE	0.841	0.842	0.017	48.903	0.807	0.874
OCEUNA -> OCE	0.524	0.525	0.051	10.285	0.420	0.621
OCETER -> OCE	0.815	0.816	0.021	39.757	0.772	0.853
OCELDR -> OCE	0.829	0.829	0.021	40.433	0.785	0.866
ADVTHR -> ADV	0.932	0.932	0.010	91.033	0.910	0.949
ADVRTC -> ADV	0.930	0.930	0.010	91.428	0.909	0.948
CRMPSYCH -> CRM	0.895	0.895	0.018	50.956	0.856	0.924
CRMPHYS -> CRM	0.890	0.890	0.015	59.196	0.857	0.917
CRM_COR_1 -> COR	0.824	0.824	0.018	44.656	0.785	0.856
CRM_COR_2 -> COR	0.724	0.723	0.034	21.217	0.648	0.781
CRM_COR_3 -> COR	0.831	0.831	0.018	45.009	0.791	0.864
FIRM_OPYEARS -> OPYEARS	1.000	1.000	3.06E-15	NA	1.000	1.000
OCE_STR_1 -> OCESTR	0.882	0.881	0.016	54.625	0.846	0.909
OCE_STR_2 -> OCESTR	0.920	0.920	0.007	134.593	0.905	0.932
OCE_STR_3 -> OCESTR	0.914	0.914	0.008	108.439	0.896	0.929
OCE_LOC_1 -> OCELOC	0.815	0.814	0.023	35.862	0.765	0.854
OCE_LOC_2 -> OCELOC	0.855	0.855	0.016	54.789	0.822	0.883
OCE_LOC_3 -> OCELOC	0.810	0.810	0.022	36.281	0.762	0.849
OCE_UNA_1 -> OCEUNA	0.859	0.859	0.023	37.853	0.815	0.905
OCE_UNA_2 -> OCEUNA	0.726	0.722	0.041	17.611	0.631	0.791
OCE_UNA_3 -> OCEUNA	0.770	0.767	0.036	21.665	0.687	0.827
OCE_TER_1 -> OCETER	0.825	0.825	0.022	36.920	0.777	0.863
OCE_TER_2 -> OCETER	0.849	0.848	0.018	46.281	0.808	0.880

OCE_TER_3 -> OCETER	0.813	0.813	0.022	36.554	0.767	0.853
OCE_LDR_1 -> OCELDR	0.798	0.798	0.023	34.197	0.748	0.840
OCE_LDR _2 -> OCELDR	0.858	0.858	0.015	56.042	0.826	0.886
OCE_LDR _3 -> OCELDR	0.858	0.858	0.014	59.865	0.828	0.884
OCE_LDR _4 -> OCELDR	0.867	0.867	0.013	66.776	0.840	0.891
ADV_THR_1 -> ADVTHR	0.849	0.848	0.016	52.906	0.814	0.878
ADV_THR_2 -> ADVTHR	0.863	0.863	0.015	58.225	0.832	0.890
ADV_THR_3 -> ADVTHR	0.839	0.839	0.018	47.126	0.801	0.872
ADV_THR_4 -> ADVTHR	0.824	0.824	0.020	41.505	0.782	0.860
ADV_RTC_1 -> ADVRTC	0.773	0.772	0.028	27.433	0.711	0.822
ADV_RTC_2 -> ADVRTC	0.829	0.829	0.019	44.648	0.790	0.862
ADV_RTC_3 -> ADVRTC	0.815	0.815	0.017	48.314	0.780	0.846
ADV_RTC_4 -> ADVRTC	0.837	0.837	0.017	48.965	0.800	0.868
CRM_PSYCH_1 -> CRMPSYCH	0.688	0.687	0.033	20.552	0.617	0.748
CRM_PSYCH_2 -> CRMPSYCH	0.760	0.759	0.026	29.068	0.702	0.805
CRM_PSYCH_3 -> CRMPSYCH	0.767	0.767	0.022	34.568	0.721	0.807
CRM_PSYCH_4 -> CRMPSYCH	0.751	0.750	0.024	30.864	0.699	0.795
CRM_PSYCH_5 -> CRMPSYCH	0.768	0.767	0.023	33.842	0.720	0.809
CRM_PSYCH_6 -> CRMPSYCH	0.718	0.718	0.032	22.402	0.651	0.776
CRM_PSYCH_7 -> CRMPSYCH	0.701	0.699	0.033	21.153	0.630	0.759
CRM_PHYS_1 -> CRMPHYS	0.727	0.725	0.040	18.355	0.639	0.794
CRM_PHYS_2 -> CRMPHYS	0.856	0.857	0.016	52.109	0.822	0.886
CRM_PHYS_3 -> CRMPHYS	0.817	0.816	0.022	36.724	0.768	0.855

The structural paths showed a significant positive relationship between OCE and ADV, which was hypothesized. The path between the moderator CRM and ADV showed a significant negative relationship, which was hypothesized. The relationship between COR and ADV is positive and significant, which was also hypothesized.

The control variable OPYEARS is shown to have a negative yet insignificant effect on ADV.

Table 36

Structural Paths of the Bootstrapped Model (excluding interactions)

	Original Est.	Bootstrap Mean	Bootstrap SD	T Stat.	2.5% CI	97.5% CI
OCE -> ADV	0.633	0.630	0.063	10.058	0.503	0.749
CRM -> ADV	-0.153	-0.145	0.052	-2.979	-0.243	-0.040
COR -> ADV	0.382	0.378	0.060	6.358	0.258	0.490
OPYEARS -> ADV	-0.044	-0.046	0.031	-1.418	-0.109	0.012

R^2: 0.683; Adjusted R^2: 0.680

Assessment of Model's Explanatory Power

To assess the model's explanatory power, the R^2 value of the endogenous factor was considered, as well as the f^2 effect size of the predictor factors.

R^2 analysis indicates that the factors of OCE, CRM, COR, and the control variable of OPYEARS account for roughly 68% of the variance in the dependent variable of ADV with an R^2 value of 0.683. Also, the adjusted R^2 value of 0.680 reflects this 68% variance, when accounting for the number of independent

variables. These values suggest that the study model has a moderate-to-substantial explanatory power, particularly as the model seeks to predict social behavior (Hair et al., 2011).

The f^2 effect size analysis reflects magnitudes that are similar to the path coefficients. Kenny (2018), suggests that effect sizes of 0.005, 0.01, and 0.025 represent small, medium, and large effect sizes, respectively. Therefore, this analysis indicates that OCE, CRM, and COR have large individual effects in explaining ADV. These effects vary in contribution by effect size with OCE having the highest effect on the endogenous variable. The control variable OPYEARS has a small effect, which is expected. These results are shown in Table 37.

Table 37

f^2 Effect Size Analysis

	OCE	CRM	COR	OPYEARS	ADV
OCE	0.000	0.000	0.000	0.000	0.578
CRM	0.000	0.000	0.000	0.000	0.037
COR	0.000	0.000	0.000	0.000	0.261
OPYEARS	0.000	0.000	0.000	0.000	0.006
ADV	0.000	0.000	0.000	0.000	0.000

Assessment of Model's Predictive Power

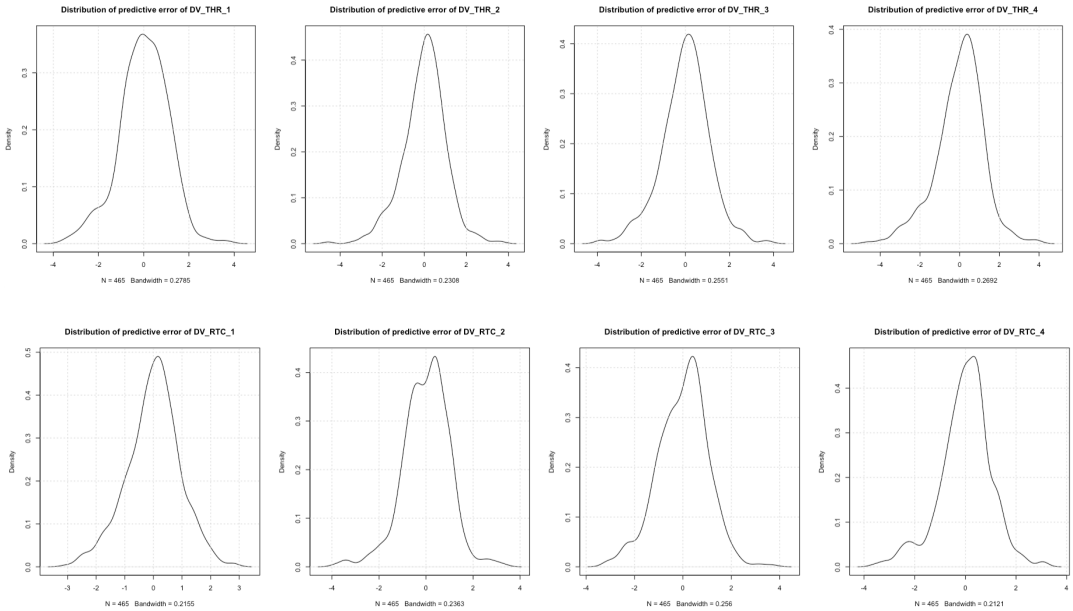
To assess the model's predictive power, a model consisting of only the first-order factors was evaluated, as the R software reports that it has no published solution for applying PLSpredict to higher-order models. The assessment was

completed utilizing the direct antecedent approach with ten folds and ten repetitions.

To determine the best metric for evaluating predictive power, prediction error was evaluated by plotting the indicators for the dependent (output) variables (Figure 14). Given that the predictive error plots for these indicators show a fairly symmetric distribution, the literature suggests that the RMSE methodology should be used over the MAE methodology for assessing predictive power (Hair et al., 2021).

Figure 14

Predictive error plots for the endogenous indicators of ADV



Analysis of the outcome construct items utilizing the RMSE methodology shows that, four of the eight PLS model outcomes have lower error than those of

the naïve LM model (Table 38). Therefore, we conclude that the PLS model has medium predictive power (Hair et al., 2021).

Table 38

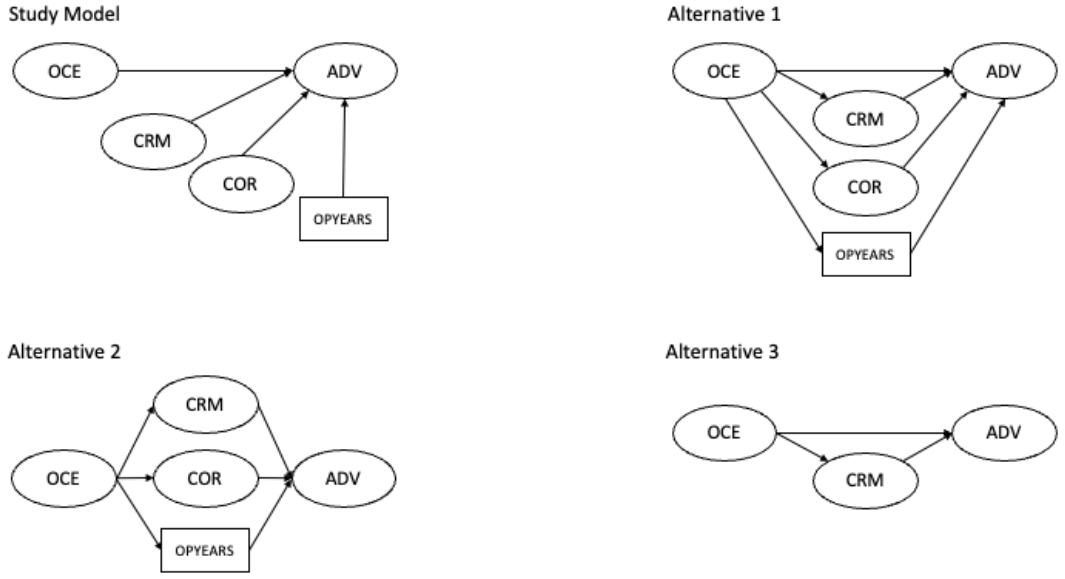
Prediction Metrics for Dependent Variable Indicators

PLS in-sample metrics:								
	ADV_THR_1	ADV_THR_2	ADV_THR_3	ADV_THR_4	ADV_RTC_1	ADV_RTC_2	ADV_RTC_3	ADV_RTC_4
RMSE	1.059	0.998	1.049	1.176	0.91	0.968	0.999	0.979
MAE	0.829	0.757	0.803	0.891	0.705	0.75	0.79	0.738
PLS out-of-sample metrics:								
	ADV_THR_1	**ADV_THR_2**	**ADV_THR_3**	**ADV_THR_4**	**ADV_RTC_1**	**ADV_RTC_2**	**ADV_RTC_3**	**ADV_RTC_4**
RMSE	**1.087**	**1.025**	**1.082**	**1.210**	**0.931**	**0.995**	**1.024**	**1.009**
MAE	0.846	0.772	0.823	0.911	0.719	0.765	0.808	0.756
LM in-sample metrics:								
	ADV_THR_1	ADV_THR_2	ADV_THR_3	ADV_THR_4	ADV_RTC_1	ADV_RTC_2	ADV_RTC_3	ADV_RTC_4
RMSE	0.948	0.912	0.935	1.065	0.776	0.867	0.888	0.868
MAE	0.73	0.7	0.706	0.808	0.6	0.668	0.699	0.652
LM out-of-sample metrics:								
	ADV_THR_1	**ADV_THR_2**	**ADV_THR_3**	**ADV_THR_4**	**ADV_RTC_1**	**ADV_RTC_2**	**ADV_RTC_3**	**ADV_RTC_4**
RMSE	**1.077**	**1.045**	**1.073**	**1.233**	**0.894**	**0.989**	**1.038**	**1.021**
MAE	0.819	0.789	0.792	0.908	0.675	0.741	0.796	0.744

Finally, predictive model comparisons were made between the study model and three alternatives. Alternative one utilized CRM, COR, and OPYEARS as partial mediators. Alternative two utilized CRM, COR, and OPYEARS as full mediators. Alternative three utilized only CRM as a partial mediator. These models are depicted in Figure 15.

Figure 15

Competing Models for Predictive Model Comparison



This analysis found that the BIC values of the study and alternative models were -503.8594, -487.2051, -297.3475, and -297.3475, respectively, suggesting that the study model has a superior fit. Further, examination of the BIC-based Akaike weights of the models (1.000, 2.42^{-04}, 1.43^{-45}, and 1.43^{-45}) clearly show weighting in favor of the study model as being superior to the alternatives (Table 39).

Table 39

Bayesian Information Criterion Values and Weighting – Study Versus Alternative Models

BIC Values for Study and Alternative Models			
Study Model	Alternative 1	Alternative 2	Alternative 3
-503.8594	-487.2051	-297.3475	-297.3475

BIC Akaike Weight Values for Study and Alternative Models			
Study Model	Alternative 1	Alternative 2	Alternative 3
1.00	$2.42e^{-04}$	$1.43e^{-45}$	$1.43e-^{45}$

Moderation Analysis

Moderation analysis was conducted to determine the effect of the moderating variables of CRM and COR on the endogenous variable, ADV. Interaction terms, OCE*CRM and OCE*COR were introduced. The moderation was most effectively described with slope plots, described below.

Moderating Variables and Interaction Terms

The continuous moderator variables of CRM and COR were evaluated for the effect of their interactions between OCE and ADV. The two-stage approach was utilized to create and evaluate the interaction terms OCE*CRM and OCE*COR because of its superiority over the product indicator and orthogonalizing approaches (J.-M. Becker et al., 2018).

Model Evaluation

The analysis revealed a significant direct effect between CRM and ADV, and COR and ADV, but showed the interaction effect of OCE*COR to be insignificant.

Therefore, the interaction effect of OCE*COR was removed from the model, leaving the direct effect of COR to ADV intact.

The analysis showed that the interaction term OCE*CRM is significant, and the final moderation analysis showed the results in Table 40.

Table 40

Bootstrapped Paths of Interaction Model – OCE as IV

	Original Est.	Bootstrap Mean	Bootstrap SD	T Stat.	2.5% CI	97.5% CI
OCE -> ADV	0.601	0.596	0.058	10.344	0.479	0.707
CRM -> ADV	-0.101	-0.094	0.047	-2.159	-0.185	$-7.98e^{-05}$
COR -> ADV	0.349	0.343	0.060	5.817	0.221	0.455
OPYEARS -> ADV	-0.075	-0.077	0.031	-2.458	-0.138	-0.019
OCE*CRM -> ADV	0.128	0.136	0.035	3.699	0.073	0.201

As hypothesized, the model shows a significant, positive effect between OCE and ADV. Also, as hypothesized, the model shows a significant negative effect between CRM and ADV. The model also showed a significant, positive effect between CRM and ADV, as hypothesized.

The control variable, OPYEARS, was shown to have a significant negative effect on ADV. This was not hypothesized, yet shows a relevant relationship between this control variable and the factor of ADV.

Moderation Results Interpretation

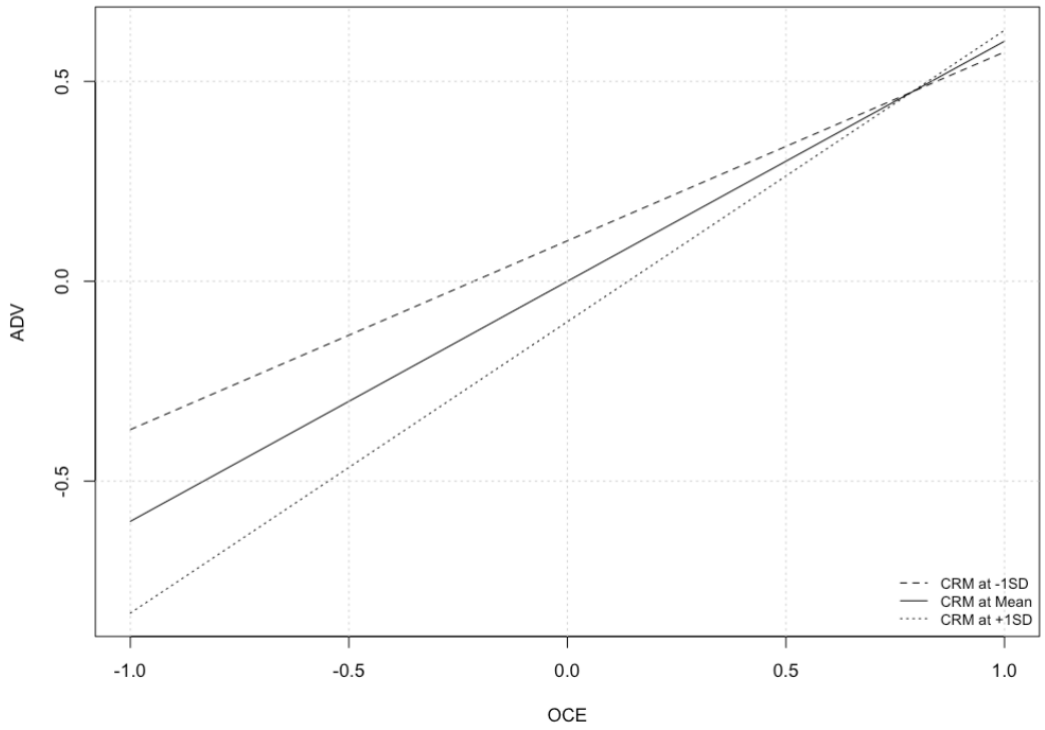
The interaction effect of OCE*CRM was shown to have a significant effect on ADV. The positive nature of this mathematical relationship is the product of the three factors involved (OCE, CRM, and ADV), and as Frost notes, “the reality is

that the coefficient sign for an interaction term really doesn't mean that much by itself." Frost goes on to suggest that the sign is not of concern "as long as the interaction plot makes sense theoretically" (Frost, 2019, pp. 115-116). Further, Memon et al. (2019) suggest that a slope plot be utilized for the inspection of the direction and strength of the moderating effect.

The significant interaction effect of OCE*CRM between OCE and ADV shows that when OCE is low, CRM efforts have the effect of lowering ADV. As OCE increases, the data show that CRM efforts are continuously less effective in reducing ADV, having almost no effect in lowering ADV when OCE is at a high level. This effect is shown in the slope plot in Figure 16.

Figure 16

*OCE*CRM Interaction Effect Between OCE and ADV*



This effect may be better conceptualized by placing CRM in the position of the independent variable and OCE in the place as moderator. By switching these variables, the interaction coefficients do not change, as shown in comparing values from the prior Table 40 and Table 41.

Table 41

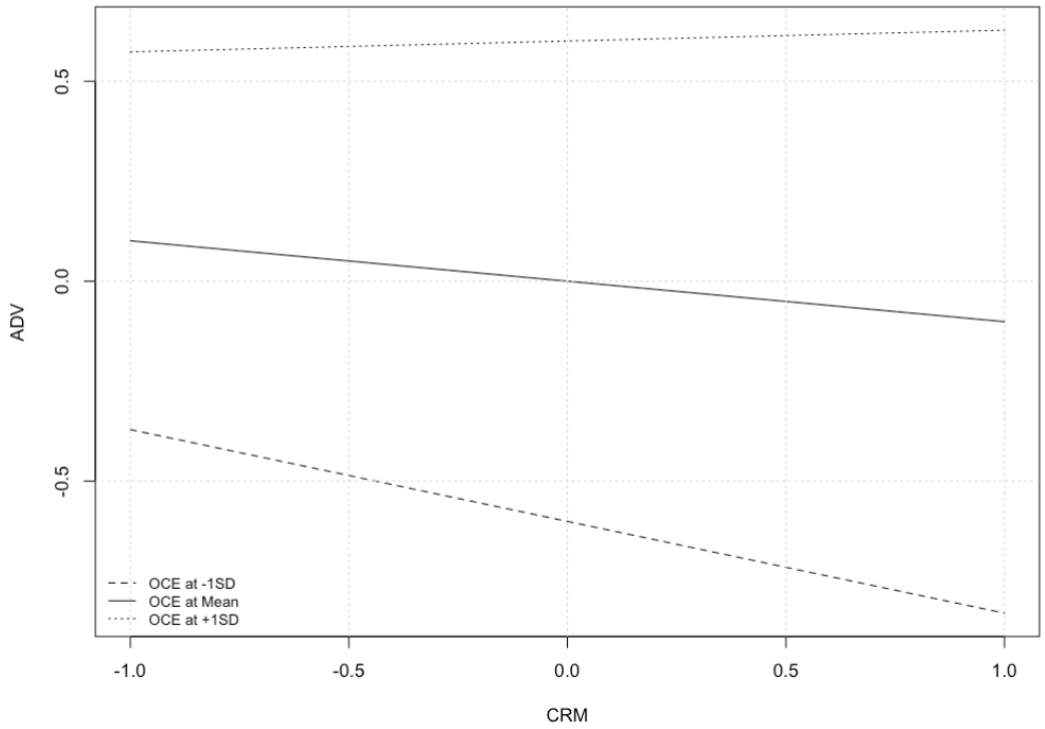
Bootstrapped Paths of Interaction Model – CRM as IV

	Original Est.	Bootstrap Mean	Bootstrap SD	T Stat.	2.5% CI	97.5% CI
CRM -> ADV	-0.101	-0.094	0.047	-2.159	-0.185	$-7.98e^{-05}$
OCE -> ADV	0.601	0.596	0.058	10.344	0.479	0.707
COR -> ADV	0.349	0.343	0.060	5.817	0.221	0.455
OPYEARS -> ADV	-0.075	-0.077	0.031	-2.458	-0.138	-0.019
CRM*OCE -> ADV	0.128	0.136	0.035	3.699	0.073	0.201

The visualization in Figure 17 provides a different perspective on the effect of CRM on ADV. This figure shows that at lower levels of OCE (the bottom, longer-dashed line), CRM efforts can take hold, lowering the effect of OCE on ADV. However, in companies with high levels of OCE (the top, shorter-dashed line), there is barely any change in ADV through the application of CRM. This graph, with its line depicting OCE at +1 SD illustrates most fully the stubborn effects of high OCE that resists the treatments of CRM.

Figure 17

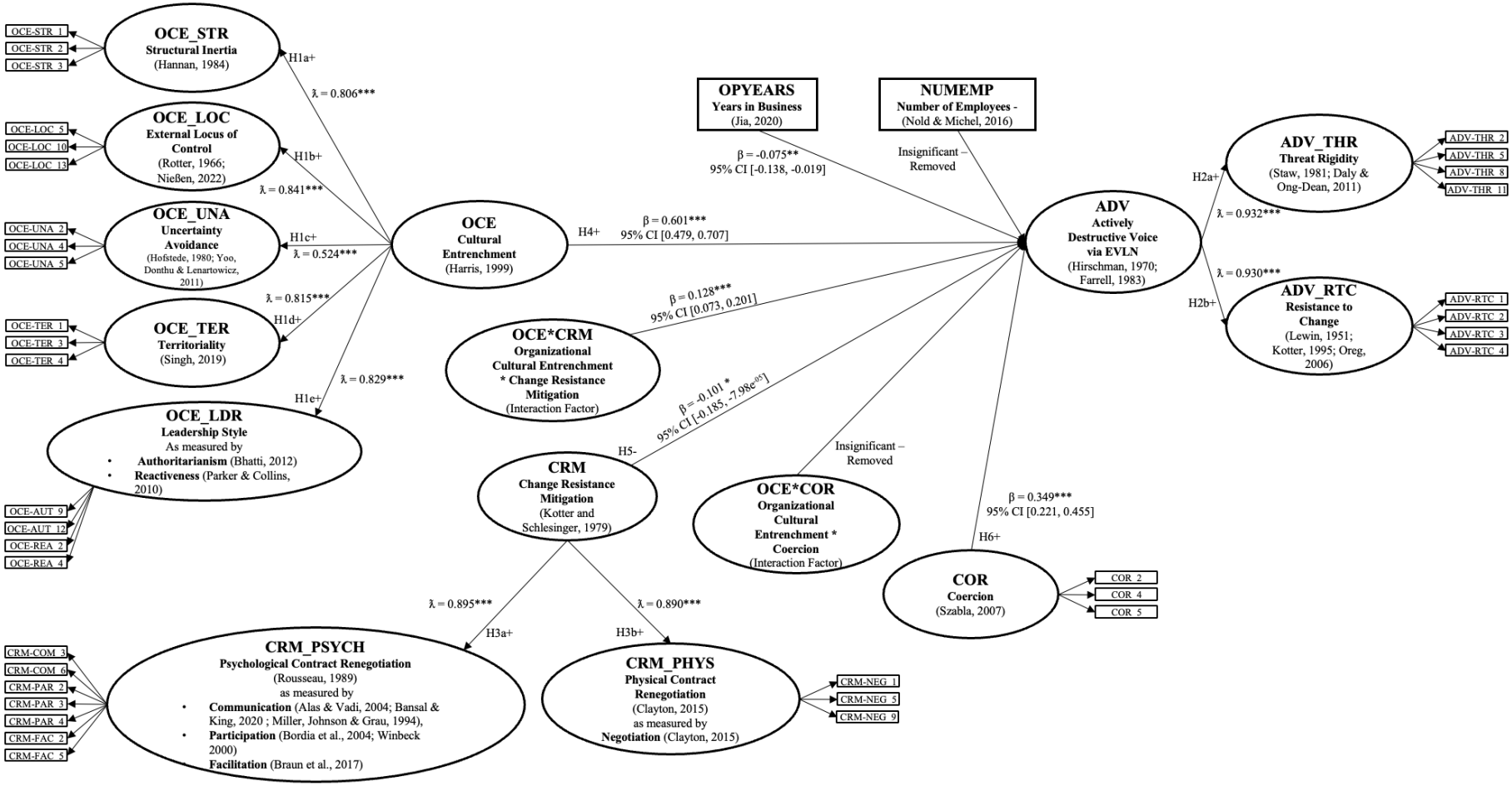
Interaction Effect Between CRM and ADV with OCE as a Moderator



These slope plots confirm that when OCE is high, ADV is high. They also show that in companies where OCE is very high, CRM efforts have little to no effect on the OCE->ADV relationship. Further, in companies with low OCE, CRM does lower the effect of OCE on ADV, thus supporting this hypothesized relationship.

The path diagram of the interaction model with its paths, coefficients, and significance is shown in Figure 18.

Figure 18 *Path Diagram of the Bootstrapped Model (with Interactions)*



Summary of Findings

This work employed a pilot and refined pilot study to support an EFA and PCA analysis of observed variables and their latent factors. These analyses yielded a set of distinct factors with their related observed variables, supporting the use of the study instrument. The work also utilized an EFA and PCA with the full study data to confirm the validity of the factors under study. A CFA was executed to confirm the factors of the study. Following these analyses, CB-SEM and PLS-SEM were employed to assess the study hypotheses. Given this work, the findings of the study lead to the following conclusions:

Hypothesis 1a:

There is a positive relationship between the cultural factor of structural inertia and organizational cultural entrenchment.

Finding: Supported

The bootstrapped PLS-SEM model showed a positive, significant loading ($\lambda = 0.806$) of the factor of structural inertia on the second-order factor of organizational cultural entrenchment. Based on this significant loading, it is concluded that structural inertia is a contributor to the phenomena of OCE.

Hypothesis 1b:

There is a positive relationship between the cultural factor of external locus of

control and organizational cultural entrenchment.

Finding: Supported

The bootstrapped PLS-SEM model showed a positive, significant loading ($\lambda = 0.841$) of the factor of external locus of control on the second-order factor of organizational cultural entrenchment. Based on this significant loading, it is concluded that external locus of control is a contributor to the phenomena of OCE.

Hypothesis 1c:

There is a positive relationship between the cultural factor of uncertainty avoidance and organizational cultural entrenchment.

Finding: Supported

The bootstrapped PLS-SEM model showed a positive, significant loading ($\lambda = 0.524$) of the factor of uncertainty avoidance on the second-order factor of organizational cultural entrenchment. Based on this significant loading, it is concluded that uncertainty avoidance is a contributor to the phenomena of OCE.

Hypothesis1d:

There is a positive relationship between the cultural factor of territoriality and organizational cultural entrenchment.

Finding: Supported

The bootstrapped PLS-SEM model showed a positive, significant loading ($\lambda = 0.815$) of the factor of territoriality on the second-order factor of organizational cultural entrenchment. Based on this significant loading, it is concluded that territoriality is a contributor to the phenomena of OCE.

Hypothesis 1e:

There is a positive relationship between authoritarian and reactive leadership styles and organizational cultural entrenchment.

Finding: Supported

The bootstrapped PLS-SEM model showed a positive, significant loading ($\lambda = 0.829$) of the factors of authoritarian and reactive leadership styles on the second-order factor of organizational cultural entrenchment. Based on this significant loading, it is concluded that authoritarian and reactive leadership styles are contributors to the phenomena of OCE.

Hypothesis 2a:

There is a positive relationship between the factor of threat rigidity and actively destructive voice.

Finding: Supported

The bootstrapped PLS-SEM model showed a positive, significant loading ($\lambda = 0.932$) of the factor of threat rigidity on the second-order factor of

actively destructive voice. Based on this significant loading, it is concluded that threat rigidity is a contributor to the phenomena of ADV.

Hypothesis 2b:

There is a positive relationship between the factor of resistance to change and actively destructive voice.

Finding: Supported

The bootstrapped PLS-SEM model showed a positive, significant loading ($\lambda = 0.930$) of the factor of resistance to change on the second-order factor of actively destructive voice. Based on this significant loading, it is concluded that resistance to change is a contributor to the phenomena of ADV.

Hypothesis 2c:

The voice behavior of restriction of information processing will fall within the active and destructive quadrant of a multidimensional scale of active/passive and constructive/destructive behavior.

For Future Research

This hypothesis was proposed for future research and to contextualize Farrell's work as related to this study. As such, conclusions to this hypothesis will be drawn from future work.

Hypothesis 2d:

The voice behavior of constriction in control will fall within the active and

destructive quadrant of a multidimensional scale of active/passive and constructive/destructive behavior.

For Future Research

This hypothesis was proposed for future research and to contextualize Farrell's work as related to this study. As such, conclusions to this hypothesis will be drawn from future work.

Hypothesis 2e:

The voice behavior of vocal criticality will fall within the active and destructive quadrant of a multidimensional scale of active/passive and constructive/destructive behavior.

For Future Research

This hypothesis was proposed for future research and to contextualize Farrell's work as related to this study. As such, conclusions to this hypothesis will be drawn from future work.

Hypothesis 2f:

The voice behavior of support of vocal criticality will fall within the active and destructive quadrant of a multidimensional scale of active/passive and constructive/destructive behavior.

For Future Research

This hypothesis was proposed for future research and to contextualize Farrell's work as related to this study. As such, conclusions to this hypothesis will be drawn from future work.

Hypothesis 3a:

There is a positive relationship between psychological contract renegotiation and its incumbent treatments of communication, participation, and facilitation with the factor of change resistance mitigation.

Finding: Supported

The bootstrapped PLS-SEM model showed a positive, significant loading ($\lambda = 0.895$) of the factor of psychological contract renegotiation and its incumbent treatments of communication, participation, and participation on the second-order factor of change resistance mitigation. Based on this significant loading, it is concluded that psychological contract

renegotiation, constructed of the treatments of communication, participation, and facilitation, is a contributor to the effect of CRM.

Hypothesis 3b:

There is a positive relationship between the factor of physical contract renegotiation and change resistance mitigation.

Finding: Supported

The bootstrapped PLS-SEM model showed a positive, significant loading ($\lambda = 0.890$) of the factor of physical contract renegotiation on the second-order factor of change resistance mitigation. Based on this significant loading, it is concluded that physical contract renegotiation is a contributor to the effect of CRM.

Hypothesis 4:

There is a positive relationship between organizational cultural entrenchment and the behaviors of actively destructive voice.

Finding: Supported

The bootstrapped PLS-SEM model showed a positive, significant relationship ($\lambda = 0.601$) between the factor of organizational cultural entrenchment and the factor of actively destructive voice. Based on this significant loading, it is concluded that ADV increases and decreases

corresponding to the direction of these changes within an organization's depth of OCE.

Hypothesis 5:

There is a negative relationship between change resistance mitigation and the behaviors of actively destructive voice.

Finding: Supported

The bootstrapped PLS-SEM model showed a negative, significant relationship (λ= -0.101) between the factor of change resistance mitigation and the factor of actively destructive voice. Based on this significant loading, it is concluded that CRM has the effect of dampening the deleterious effects of OCE on ADV within an organization.

Hypothesis 6:

There is a positive relationship between the factor of coercion and actively destructive voice.

Finding: Partially Supported

The bootstrapped PLS-SEM model showed a positive, significant relationship (λ= 0.349) between the factor of coercion and the factor of actively destructive voice. However, the interaction term OCE*COR was insignificant. Based on the significant direct loading, it is concluded that applying coercion to employees has the effect of increasing ADV.

However, since the interaction term was insignificant, this relationship assessment is only partially supported by the results of the study.

Chapter 5: Discussion, Implications, and Recommendations

Overview and Summary of Research Results

Mergers and acquisitions often fail to meet their objectives and frequently destroy shareholder value. This study has shown that OCE contributes to these failures because of its exacerbating effect on negative behaviors within the ranks of the acquired company.

This study has synthesized a definition of OCE and has reflectively studied this phenomenon via the incorporated effects of multiple contributing organizational factors. The study has extended Hirschman's work on voice within the organization by investigating actively destructive behaviors resulting from threat rigidity and resistance to change. The study has evaluated the relationship between OCE and ADV and has found that a significantly positive relationship exists between these two factors, thus supporting the need for caution, care, and mitigation efforts when merging a moderate-to-highly culturally entrenched organization.

The study demonstrates that the change resistance mitigation efforts of psychological and physical contract renegotiation can effectively reduce ADV in organizations where OCE is not excessive. This relational effect was hypothesized and expected. However, an unexpected extension of this relationship showed that CRM efforts have almost no effect in organizations with high OCE. The obvious extension

to this phenomenon would be incorporating more invasive treatments to moderate actively destructive behaviors.

This chapter focuses on the study's results by revisiting the questions that initially guided the research and outlining the answers provided through the study. The study's contributions to literature and practice will be discussed, along with the study's limitations. Finally, the chapter and study conclude with recommendations for future research.

Discussion of Study Results and Conclusions

The study results are based on an investigation of hypotheses yielded from seven research questions (RQs). This section presents those RQs, maps them to their associated hypotheses, and then discusses the study results of each one.

Review of Research Question Mapping to Hypotheses

This study began in search of answers to seven RQs. These questions logically preceded the creation of literature-guided hypotheses for which the study was designed to investigate. Table 42 shows a mapping of these hypotheses to their associated RQ:

Table 42

Summary Table of RQs with Supporting Hypotheses and Conclusions

RQ	Hypotheses Supporting RQ
RQ 1 - What is organizational cultural entrenchment (OCE)?	No hypothesis, supported by literature. Definition is given in this chapter, as well as in

	Chapter 2, along with a discussion of its synthesis.
RQ 2 - What premerger or acquisition cultural factors contribute to the phenomenon of OCE?	H1a: Supported - There is a positive relationship between the cultural factor of structural inertia and organizational cultural entrenchment. H1b: Supported - There is a positive relationship between the cultural factor of external locus of control and organizational cultural entrenchment. H1c: Supported - There is a positive relationship between the cultural factor of uncertainty avoidance and organizational cultural entrenchment. H1d: Supported - There is a positive relationship between the cultural factor of territoriality and organizational cultural entrenchment. H1e: Supported - There is a positive relationship between authoritarian and reactive leadership styles and organizational cultural entrenchment.
RQ 3 - What are the organizational behaviors resultant from OCE that contribute to actively destructive voice (ADV) in the merged with or acquired company?	H2a: Supported - There is a positive relationship between the factor of threat rigidity and actively destructive voice. H2b: Supported - There is a positive relationship between the factor of resistance to change and actively destructive voice.
RQ 4 - What change resistance mitigation (CRM) treatments can be applied before and during the integration phase of an M&A to reduce the effect of OCE on ADV?	H3a: Supported - There is a positive relationship between psychological contract renegotiation and its incumbent treatments of communication, participation, and participation with the factor of change resistance mitigation.

	H3b: Supported - There is a positive relationship between the factor of physical contract renegotiation and change resistance mitigation.
RQ 5 – Does coercion of employees by leadership change the relationship between OCE and ADV when applied during the premerger or integration phase of an M&A?	H6: Partially Supported - There is a positive relationship between the factor of coercion and actively destructive voice.
RQ 6 – How does increased OCE in a premerger or acquisition company affect the amount of ADV behaviors in the integration phase of the M&A?	H4: Supported - There is a positive relationship between organizational cultural entrenchment and the behaviors of actively destructive voice.
RQ 7 – What effect do CRM treatments have on the relationship between OCE and ADV? Can these treatments lower ADV in the merged with or acquired company?	H5: Supported - There is a negative relationship between change resistance mitigation and the behaviors of actively destructive voice.

RQ1 – Conclusions for the Definition of Organizational Cultural Entrenchment

RQ 1 - What is organizational cultural entrenchment (OCE)?

The first research question (RQ1) asked, "What is organizational cultural entrenchment?" This question led to research into literature on general

organizational culture and to specific research on culture as related to mergers and acquisitions. The work of Lewin, Hofstede, Schein, Deming, Kotter, Schlesinger, Kendrick, Uljin, Duysters, Meijer, and others was explored to better understand organizational culture.

This research synthesized a definition of OCE based on explicit definitions found in the literature on culture and through implicit definitions found in studies across a broad set of disciplines. Each salient article of this definition was rooted in literature and context pertaining to organizations, their culture, and the entrenched state encountered within these entities.

OCE was found to be anchored in the tendencies of organizations through structural inertia, external locus of control, uncertainty avoidance, territoriality, and the style of leadership within the unit. OCE is also revealed through the behaviors resulting from these tendencies, especially when extant culture is under threat.

RQ1 was preliminarily resolved by the definition of OCE constructed during the work of the literature review in Chapter 2. Upon the conclusion of the broader study, RQ1 was revisited to ascertain whether its initial resolution held true. Upon review of the study results, this study finds the conclusion to RQ1 in the definition of organizational cultural entrenchment is defined as follows:

> *Organizational Cultural Entrenchment*: The embedded, inflexible, rigid, territorial, and inertial tendencies that cause active resistance to the external

influences or pressures that threaten firmly established and widely held cultural norms, knowledge, and policies within an organization.

RQ2 – Conclusions for Cultural Factors of Organizational Cultural Entrenchment

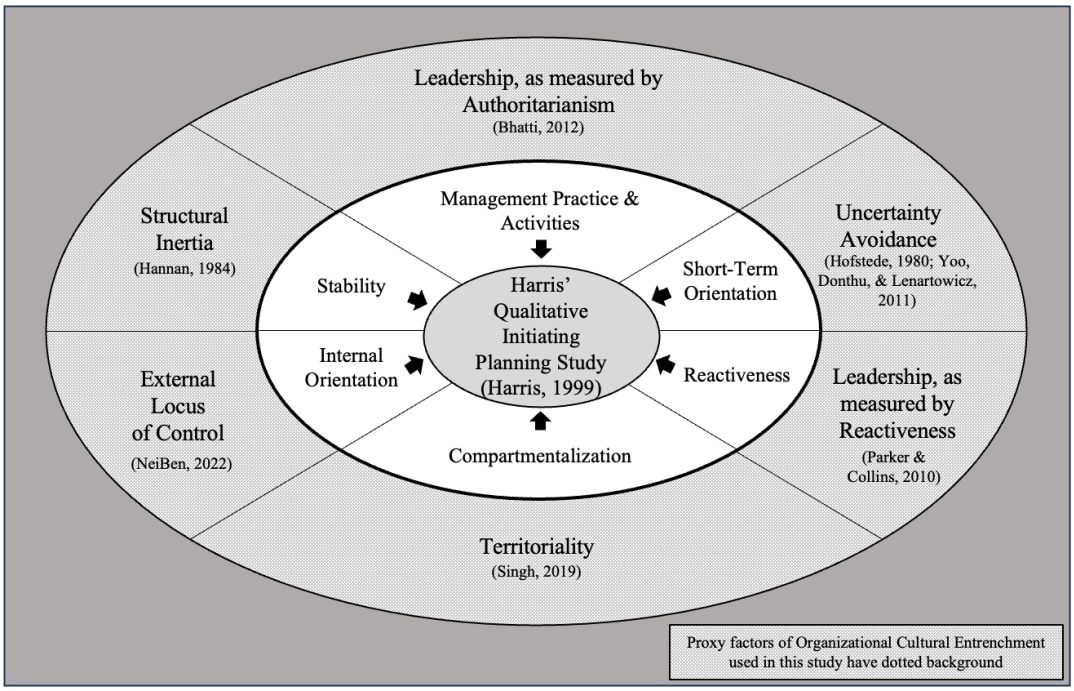
RQ 2 - What premerger or acquisition cultural factors contribute to the phenomenon of OCE?

RQ2 asked what cultural factors lead to entrenched behaviors within an organization in order to discover the elements that additively contribute to a group's cultural zeitgeist. RQ2 sought to identify measurable cultural characteristics leading to an entrenched group mindset so that the elements of OCE could be measured. To this end, Harris' qualitative work on entrenched cultural values yielded a set of factors selected as a bounding set for exploring this question.

Harris' factors led to proxy factors that this study hypothesized (Hypotheses 1a-e) and revealed to be significantly related to the phenomenon of OCE. While other factors could extend this set, the question is answered, at least in part, by the positive relationships of this set of proxy factors to the higher-order factor of OCE. The mapping of these proxy factors to those of Harris' study is shown in Figure 19.

Figure 19

Extension of Harris' "entrenched cultural values" diagram with proxies



The study posited that the proxy factors of structural inertia, external locus of control, uncertainty avoidance, territoriality, and leadership style would all be contributors to the phenomenon of OCE. The study results shown in Chapter 4 conclude that these factors are all contributors to the phenomenon of OCE.

RQ3 – Conclusions for Behavioral Factors of Actively Destructive Voice

RQ 3 - What are the organizational behaviors resultant from OCE that contribute to actively destructive voice (ADV) in the merged with or acquired company?

RQ3 sought to find the behaviors contributing to actively destructive voice behaviors within the organization. This question explored behaviors associated with threat rigidity and resistance to change that were hypothesized to have a positive relationship to the higher-order factor of actively destructive voice (hypotheses 2a-b). The study measured these actively destructive factors through a set of resultant behaviors. Of these, restriction of information processing and constriction in control were found to be associated with threat rigidity. Vocal criticality and support of this criticality in coworkers were key negative behaviors resulting from strong resistance to change in the organization.

The answers to this RQ yield essential insights into those actively destructive behaviors in an M&A, marking restriction of information, constriction in control, vocal criticality, and support of vocal criticality as significant contributors to many failed M&As. These behaviors are, as Judson posited, on the aggressive end of the spectrum of resistance and are both active and destructive.

While not a goal of this work, the study discussed the possibility of augmenting Farrell's multidimensional scale model from his extension of Hirschman and Rusbult's research on the EVLN framework. The output of this potential sub-study was captured in hypotheses 2c-f. This future work will be discussed later in this chapter as an extension and cementing of the ties of actively destructive voice within the EVLN framework.

RQ4 – Conclusions for Treatments to Moderate the OCE-to-ADV Relationship

RQ 4 - What change resistance mitigation (CRM) treatments can be applied before and during the integration phase of an M&A to reduce the effect of OCE on ADV?

RQ4 asked if there are CRM treatments that can be applied to mitigate the effects of OCE on ADV during the integration phase of an M&A. The research sought to determine if any help could be found to combat the effects of OCE to reduce ADV, thus improving M&A outcomes.

Guided by the work of Kotter and Schlesinger in their seminal 1979 Harvard Business Review article, the literature revealed two mitigating factors: psychological and physical contract renegotiation. A parent company may leverage communication, participation, and facilitation to forge a new psychological contract (hypothesis 3a) and the power of negotiation to build a new physical contract (hypothesis 3b) with employees. The study showed that these factors positively affected the higher-order factor of CRM, thus supporting the study's hypotheses.

These findings demonstrated that psychological contract renegotiation is, in part, a higher-level construct of communication, participation, and facilitation and that negotiation of pay, benefits, and other physical remuneration make up the

elements of physical contract renegotiation. These findings reveal measurable attributes that, in aggregate, make the effects of CRM measurable.

RQ5 – Conclusions for the Moderating Effect of Coercion

> RQ 5 – Does coercion of employees by leadership change the relationship between OCE and ADV when applied during the premerger or integration phase of an M&A?

RQ5 questioned how the coercion of employees by leadership affected the relationship between OCE and ADV. This question was asked because, while Kotter and Schlesinger posited that this would be a valuable method of reducing resistance to change, literature suggested that it could also lead to negative effects. Therefore, RQ5 was listed to drive the study to understand better the effect of coercion on behaviors in the context of the M&A.

The study hypothesized that while coercion can reduce resistance to change, it will lead to an increase in ADV (hypothesis 6). The study supported this hypothesis, showing that coercion is a cause of increased ADV. Interestingly, the interaction effect of OCE and COR as a combined influencer on ADV behavior was insignificant, leading to only partial support of hypothesis 6.

Because this study found coercion to increase negative voice, this tactic should only be used in extreme and dire circumstances when time is of the essence and when there are no other alternatives.

RQ6 – Conclusions for the Effect of OCE on ADV

RQ 6 – How does increased OCE in a premerger or acquisition company affect the amount of ADV behaviors in the integration phase of the M&A?

RQ6 sought to understand how or if OCE affects ADV. This relationship is important in M&As because ADV leads to cultural clashes that contribute to M&A failure. Because of this, any contributor to ADV should be studied and understood to mitigate its effects.

Literature suggested, and the study hypothesized (hypothesis 4), that as OCE increases in an organization, ADV will have a corresponding increase. As evidenced in Chapter 4, this research showed a strong, definitive, and positive correlation between OCE and ADV, supporting the hypothesized relationship and showing a corresponding increase in ADV as OCE increases. The research concludes that OCE is linked to ADV.

This study's conclusion is vital, as determining an organization's level of OCE should be of paramount concern to M&A practitioners and leaders. Every effort should be made to find M&A targets with manageable levels of OCE to ensure that ADV levels are not so high as to contribute to M&A failure. Practical applications from gathering and applying knowledge of OCE levels will be discussed later in the practical applications section of this chapter.

RQ7 – Conclusions for the Moderating Effect of CRM Treatments on the OCE-to-ADV Relationship

RQ 7 – What effect do CRM treatments have on the relationship between OCE and ADV? Can these treatments lower ADV in the merged with or acquired company?

The final question, RQ7, sought to determine if CRM treatments influence the relationship between OCE and ADV and if they can lower ADV in the merged with or acquired company. This knowledge was sought to understand methods to reduce OCE-predicted ADV behaviors to facilitate more positive M&A outcomes.

The study showed that CRM treatments have a significant moderating effect that can lower ADV, thus supporting hypothesis 5. This research demonstrated that when leaders and M&A practitioners manage the psychological and physical contract renegotiations intrinsic to the M&A, outcomes will be improved through reduced ADV.

Interestingly, the study also demonstrated that CRM treatments have little to no effect in companies with high OCE. This finding implies that more invasive treatments may be required in acquired companies with high OCE. These potential treatments will be discussed later in this chapter.

Contributions of the Study to Literature and Research

This study forms a nexus of data from past research along with the findings yielded within the scope of the work itself. Therefore, this study significantly extends past research on organizational culture, M&A execution, and change management. The work is a synthesis of existing ideas and newfound knowledge.

Also, the study gathered data via a newly-formed instrument on a crowdsourced data platform, yielding a unique measure and lessons learned in data acquisition and participant filtering.

Finally, the pilot and full study data were evaluated and analyzed utilizing a variety of methodologies to determine goodness-of-data and goodness-of-fit, as well as hypothesis testing. The exposition of these methods through this work yields interesting insights into the mechanics of each, adding to the knowledge of best-practice use of these tools.

Study Factors

This study began with the creation of an extensive discussion and literature review of M&As and organizational culture. This literature review holds value as a compendium of authors and works related to the challenges of M&As, particularly related to the blending of organizational cultures. The review provides a background of organizational culture from authors such as Lewin, Tichy and

Devanna, Kotter, Schein, and Hofstede, as well as a host of authors who have built upon the seminal works of these authors.

This study is an extension of past work, particularly in the area of organizational cultural entrenchment, actively destructive voice, and change resistance mitigation. The contributions to the literature of each of these will be discussed here, in turn.

Organizational Cultural Entrenchment

Before this study, no clear definition of the term "Organizational Cultural Entrenchment" was found within extant organizational literature. This study has synthesized a cogent, concise, and clear definition of OCE by thoroughly investigating articles and books on organizational culture and examining the breadth of culture and entrenchment documentation across various disciplines. This definition sets the stage for future OCE research in organizational change, whether in the context of M&As, reorganizations, restructuring, expansion, divestiture, or any other catalyst that disrupts the organization's cultural position.

This study extends Harris' qualitative work, taking his qualitative factors and building a set of proxy factors for research. The proxy factors of structural inertia, uncertainty avoidance, external locus of control, territoriality, and leadership style were all shown to positively load onto the higher-order factor of OCE, thus forming a set of constructs that the study has shown to be valid as a salient set for measuring the OCE within an organization.

Finally, OCE was found to correlate positively with ADV. This pairing is novel to literature and will form the basis for future studies.

Actively Destructive Voice

This study extensively reviewed organizational change literature, harkening back to Lewin's Unfreezing, Moving, Freezing model and his Force Field Theory. The study offers a view into how Lewin's Force Field Theory helps to explain the concept of OCE as a force of resistance against the forces of change initiated via an M&A.

The study then naturally progressed to contextualizing Judson and Coetsee's work on the Continuum of Resistance within the study of organizational cultural disruption. ADV was shown to extend Judson's Continuum of Resistance as a concept, demonstrating how organizational change through M&As leads to particular and negative behaviors found on Judson's scale. The study of the behaviors of restriction of information processing, constriction in control, vocal criticality, and support of vocal criticality showed that these actions belong among those that Judson and Coetsee described as actively resistant in their work.

The study explores the work of Hirschman, Rusbult, and Farrell and the EVLN framework as a base from which to discuss the effect of change on employee voice. This work extends the EVLN framework, with its dichotomous relationship between exit and loyalty, by delving deeply into the concept of voice and how it can be used destructively.

Hirschman mentioned that voice could be negative, but his focus was on the positive aspects of voice, moderated by employee loyalty. In contrast, this study explored the antecedents of negative voice when exit is not utilized and employees stay with the company after a tumultuous change. The ADV measured as the result of OCE shows that Hirschman's EVLN framework has an added dimension of negative voice that may have deleterious organizational effects in the wake of disruptive organizational change.

Change Resistance Mitigation

The study extends Kotter and Schlesinger's change management work described in their seminal 1979 Harvard Business Review article. In their article, they describe methods of reducing resistance to change. This study operationalized their concepts and showed that the methods they describe have a significant moderating effect between OCE and ADV.

The study categorized Kotter and Schlesinger's concepts as psychological and physical contract renegotiation and discussed how large-scale organizational change via the catalyst of an M&A leads to renegotiation between the employee and the parent company.

The study utilized Kotter and Schlesinger's communication, participation, and facilitation methods to measure the perception of a company's psychological contract renegotiation efforts with its employees. This adds a new way to measure

this construct within organizational behavior, as the survey items for these constructs were highly correlated.

Coercion

The study also hypothesized and measured the effect of employee coercion by leadership and found this method of change resistance mitigation to be significantly and positively related to ADV. This knowledge provides researchers with another set of measurements on negative behaviors resulting from employee coercion.

Control Variable – Company Years in Operation

The study had two control variables: number of employees and years in operation for the merged with or acquired company. The findings showed that only years in operation significantly affected the study outcomes. This addition to the literature provides another touchpoint for researchers considering antecedents to organizational behaviors.

The Organizational Cultural Entrenchment Inflection Point

Research on the phenomenon of OCE's effect on ADV found that an inflection point exists at which the effect of OCE on the acquired organization is so high that attempts to minimize this effect via CRM treatments will be ineffective. This "Organizational Cultural Entrenchment Inflection Point" is an important addition to scholarly work, as it is the genesis of thought around the crucial point at

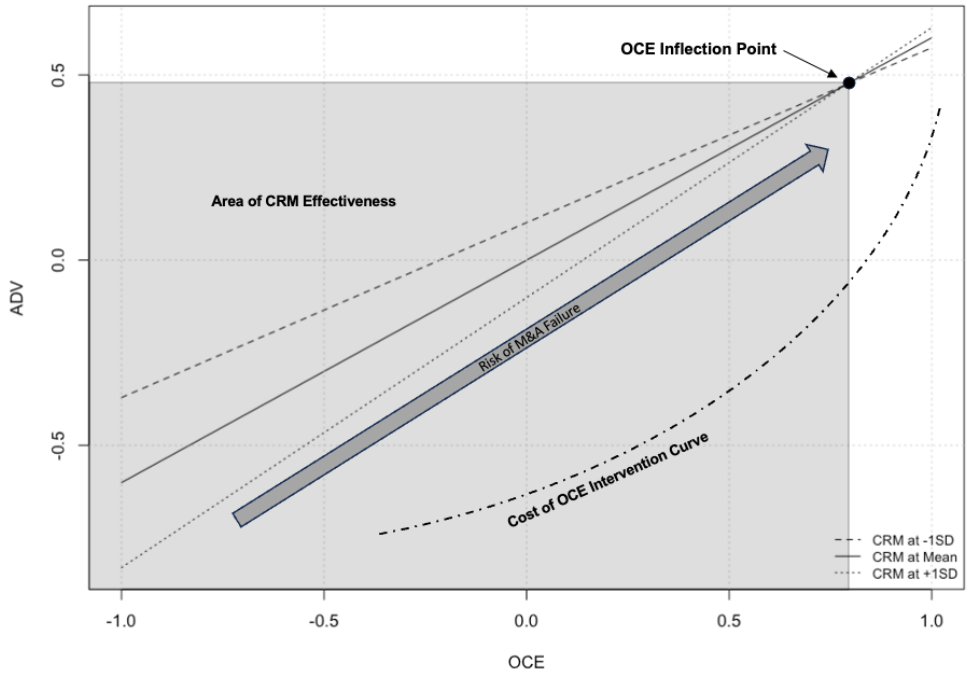
which OCE treatments must be augmented with more extensive and costly injections into the acquired company's culture.

This point is depicted in Figure 20. Here, the inflection point is shown as the point where the Area of CRM Effectiveness ends, yielding a void beyond where these CRM treatments no longer reduce the effect of ADV. Further, in extreme cases of OCE, further treatments of CRM could even have deleterious effects. These effects could be caused by a feeling of patronization or "tone-deafness" on the part of the M&A leadership.

Figure 20 also shows that, as the effect of CRM effectiveness wanes due to extensive OCE, the risk of M&A failure rises, as do the costs associated with OCE interventions via the Cost of OCE Intervention Curve.

Figure 20

The Organizational Cultural Entrenchment Inflection Point



The OCE Inflection Point must be considered in future scholarly work, as M&A practitioners must be made cognizant of this point and the negative effects of not limiting OCE before this point. The future works section of this document will delve more deeply into the next steps in the study of this important inflection point.

Data Gathering

Survey Instrument

In gathering data for this study, a new survey instrument was created to amalgamate existing instruments from prior literature. Instruments for each factor were gathered into a single survey, cherry-picking the most salient items from each

and jettisoning the lowest loading questions and those deemed by the research to be less relevant to the study. This methodology led to a poorly fit set of results in the initial pilot.

Because of the issues of the original survey, the entire set of items from each contributing instrument was added to the complete survey. This led to data that was more fully loaded on the latent factors of interest.

This study provides an example of how cherry-picking survey items can lead to poor factor loading. It provides future researchers with a documented example of the need to utilize full survey item sets from previously validated instruments to ensure proper internal consistency and reliability.

CloudResearch and Amazon's Mechanical Turk

This study utilized the CloudResearch platform to manage Amazon's Mechanical Turk crowdsourcing service in gathering participant data. As discussed in the extant literature, the Mechanical Turk platform is a valuable and valid tool for gathering social science data. This research yielded several items to be considered as best practices for researchers in the future.

First, the initial pilot study did not limit MTurk participants based on their HIT success rate. This contributed to the poor quality of the data from this stage. Future researchers will benefit from the knowledge that data quality improved during the refined data pilot run from (among other things) limiting participants to only those with a 95% or greater HIT success rate.

This study demonstrated the use of a qualifying survey for both the pilot and full study, where potential participants were accepted or rejected based on their responses to an initial survey with only a few questions. The example of using this methodology to limit participants and crowdsourcing costs will further the work of future researchers in the social science arena.

Finally, after discovering that the first round of participant gathering for the full study yielded too small a number of non-U.S. participants, the data-gathering platforms were modified to target specific sets of countries. This methodology will be helpful to future researchers who want to utilize CloudResearch, MTurk, and Qualtrics to gather data from specific countries.

Management of Insufficient Effort Responding

The study utilized several methods for rejecting participants whose data was suspect because of IER. Attention and logic checks were placed in the survey instrument and were improved from the pilot to the full study. These refinements will prove helpful in future research.

The study also discusses using standard deviation calculations and IQR range checks to reject participants who clearly were not reading the questions and were "speeding" through the survey, thus polluting the sample set. These examples of participant data evaluation will serve future researchers in the social science arena in their use of Likert scale instruments.

Data Analysis

The study utilized both EFA and PCA analysis in determining item-to-latent factor salience. A discussion of specific and common variances and a reference to the literature regarding EFA and PCA was given. This study provides future researchers with an example of using EFA and PCA within a single study to compare and confirm item consistency and reliability. It gives a comparison of the two that will aid in the selection of which methodology is most relevant for future work.

The study uses a complex, second-order structural equation model with multiple moderators and control variables. The study is an excellent example of compiling literature on first- and second-order latent factor models, designing instruments to measure models of this type, and calculating the complicated measurement, structural, and interaction models.

The study gave an in-depth treatment of structural equation modeling of the second-order factor model in both CB-SEM and PLS-SEM. For CB-SEM, this study provides an example and discussion of utilizing the JASP tool to perform calculations by first building and evaluating the measurement model, then performing structural equation modeling, and finally, interaction modeling. The CB-SEM discussion provides an example of double-mean-centering and parceling

to alleviate data normalcy and number of item size issues. These examples will be helpful to researchers managing large datasets with complex models.

Because of the model complexity and data size, the CB-SEM interaction model would not converge. Therefore, PLS-SEM was used to create a complete set of measurement, structural, interaction, and predictive SEM calculations. This change to PLS-SEM provides future researchers with an example study comparing CB-SEM and PLS-SEM methodologies.

Azure's Machine Learning Studio was employed because the CB-SEM interaction model would not complete or converge on the researcher's machine. This study's use of this cloud computing resource provides future researchers with an example of a cloud service resource that may be utilized in calculating future large and complex models.

The study reveals that the choice of quantitative analysis methodology should be guided, in part, by model complexity. In second-order models with many factors, PLS-SEM was found to be a superior analysis method because of its calculation of factors as composites. Use of these PLS proxy values for factors was found to greatly reduce processing load in calculations compared to the indicator co-variance calculations required in CB-SEM.

Further, the study compared EFA and PCA methodologies in determining items most highly-loading to each factor. These analysis tools were compared because some methodologists argue that PCA is superior to EFA as it aims to

account for variance among observed measures, rather than correlations between them (T. A. Brown, 2015). The output of these methods was compared in a mutually confirmatory manner (Joliffe & Morgan, 1992). However, when these factor indicator tools were considered in light of CB- and PLS-SEM methods, it revealed that EFA or PCA may have greater salience with one SEM tool of choice or the other due to similar benefits or constraints. For example, PCA is a more appropriate technique when managing large sets of measures because its component analysis is more comparable to the composite methodology of PLS-SEM, while EFA yields results more generalizable to CFA as it is based on the same common factor model (T. A. Brown, 2015; Floyd & Widaman, 1995).

Contributions of the Study to Applied Practice

Along with contributions to social science and organizational behavior literature, this work contributes several significant findings to be utilized to improve M&A outcomes. The study provides a definition and significant factors that lead to OCE, a set of ADV behaviors resulting from OCE, and treatments that may be employed to offset the negative effects of ADV exacerbated by high OCE. The study also introduced a new instrument that may be utilized in practice to measure OCE, the perceived behaviors of ADV, CRM treatments, and COR's effects on ADV. The contributions of these will be discussed in this section.

Organizational Cultural Entrenchment as an Antecedent of Actively Destructive Voice

This study provides a definition of OCE that leaders, consultants, and M&A practitioners may use to describe this phenomenon.

> *Organizational Cultural Entrenchment*: The embedded, inflexible, rigid, territorial, and inertial tendencies that cause active resistance to the external influences or pressures that threaten firmly established and widely held cultural norms, knowledge, and policies within an organization.

More than simply a cultural state of being, OCE is defined as the organization's cultural state, coupled with an active posture of resistance to change. This component of activeness is the cause of a significant shift in an organization toward higher OCE and, thus, higher negative behaviors.

This study exposed OCE as being a significant contributor to ADV. Companies seeking to merge with or acquire others must be cognizant of this phenomenon. They should measure OCE in their potential purchase and take steps to mitigate its effect on ADV. This study has shown that ignoring OCE is done at the peril of the parent company.

Ignoring OCE and cultural integration issues comes at a significant cost as extant literature has shown a greater than 50% failure rate in M&As. Miller and Fernandes of Deloitte (2009) note that, in one study, culture was found to be the

cause of 30% of these failed integrations. When considering the $497 trillion in M&A value in all G7 and EU nations from 2000-2022, a conservative 50% failure rate of M&As with 30% of those failures caused by cultural issues, and a conservative 10% loss in value, this would result in a loss of $7.5 trillion across 22 years (for an average loss of $339 million annually) due to cultural integration issues in G7 and EU nations (*M&A Statistics by Countries*, 2023). Therefore, it is paramount that the measurement and mitigation of OCE be integrated into due diligence processes of M&A practitioners as nearly 1/5 of M&As fail due to cultural integration issues.

This study also provides practitioners with factors that may be managed as contributors to OCE. Practitioners should consider the effect of structural inertia and its effects on the organization as a potential cause of OCE. Firm attributes such as age, size, static processes, lock-in, and the desire to hold on to "local knowledge" should be considered carefully when considering entering into a merger or acquisition with a firm.

Practitioners should also consider attitudes of external locus of control in the firm to be merged with or acquired. Outlooks that tend to place blame or focus on external events or actors as antecedents or stimuli for outcomes within the organization would be indicative of these outward-facing attitudes. In an M&A, these attitudes may lead to a feeling that the purchasing company is acting as a puppet master and that all control is being lost to this "conquering" entity. This

attitude can poison the merging of company cultures and contribute significantly to ADV behaviors.

Groups and companies with a propensity for uncertainty avoidance should be considered ripe for OCE and its resultant ADV behaviors. With their desire to avoid what they consider to be threatening and unstructured situations, these groups will be most uncomfortable with the ambiguities inherent in an M&A. These groups will likely try to impose structure to avoid this discomfort, resulting in increased threat rigidity as a component of ADV.

Territoriality is another attribute that must be considered and managed in the company being merged with or acquired. The feelings of ownership embodied by this trait can lead to feelings of infringement in the acquired when the parent company is seen as violating their psychological and physical space. This can lead to a defensive posture in the acquired, leading to more ADV behaviors.

This study has shown that the leadership style of the merged with or acquired company significantly impacts the level of OCE encountered. Acquiring companies must evaluate leaders and their methodologies to consider how these may impact OCE and, thus, M&A outcomes. Companies with leaders who act in authoritarian and autocratic ways, responding reactively to external stimuli, have been shown to have increased OCE in this study. Purchasers should be aware of leadership styles and the depth to which these leader characteristics are embodied in those who lead within the company to be merged with or acquired.

Practitioners and consultants should utilize the questionnaire of this study to measure the loadings of these factors onto OCE to understand the relative strengths of each factor within the organization as a matter of pre-M&A due diligence. These strengths may then be compared with those loadings from the generalized sample found within this study. M&A teams may then use this information to more effectively administer treatments that target leadership deficiencies, territorial issues, process rigidity, and psychological concerns.

The Amplifying Effect of Coercion on Actively Destructive Voice

This study showed a significant and positive effect of coercion on the behaviors of ADV. Therefore, it is in the interest of practitioners to tread very lightly when considering coercive tactics. While Kotter and Schlesinger mention that coercion can effectively manage change when speed is essential, they also warn that it can "spark intense resentment toward change initiators" (Kotter & Schlesinger, 1979, p. 1). This admonishment to consider the second effect of resentment was well-founded, as this work revealed that coercion is an amplifier of ADV effects and should be avoided.

Treatments to Reduce the Effects of Organizational Cultural Entrenchment

This study measured psychological and physical contract renegotiation as methods to reduce the perceived effect of OCE on ADV. The study found that these treatments reduce the behaviors of ADV and, thus, should be considered tools

for those leading and managing an M&A or other cultural change within an organization.

Psychological Contract Renegotiation

This research explored the efficaciousness of communication, participation, and facilitation in reducing OCE-influenced ADV. The study found that when applied together, these treatments help employees of the acquired company form a new psychological contract with the new parent company that has a reductive effect on ADV. Therefore, practitioners should include these as a minimum base set of treatments in their change management plans.

The first of these treatments, communication, provides employees with details that allow them to frame the need for the change in their minds. This transfer of information will reduce employee uncertainty, fear, and anxiety related to the change and improve how employees perceive change.

Change communication should be embarked upon during the pre- and early-merger phases when it will have the most significant impact on employees and establish a more positive frame of reference for changes in culture due to the M&A or other organizational change.

Practitioners and leaders should also foster and encourage the participation of employees in the management of the M&A. Employees may be placed on panels or working groups to create plans and merge processes. They may be asked to bring the experiences and expertise to bear in forging a unified way forward. This

will encourage buy-in to the newly joined organization and provide an early opportunity for employees and leaders of the parent and integrated companies to explore existing cultures and initiate the bonding of cultures.

Finally, practitioners and leaders in M&As should provide facilitation treatments to reduce OCE-induced ADV behaviors. These treatments include training on new processes and ways of work related to changing responsibilities. They include instruction to employees on how to find resources and needed services within the new company. Facilitation can also take the form of emotional support and counseling to reassure employees during change. These facilitation treatments will build trust in the parent organization, thus further blunting the effect of change. Also, they will provide another avenue for employees to renegotiate their psychological contract, improving their relationship with the newly formed company and, thus, reducing ADV behaviors.

Physical Contract Renegotiation

This research found that physical contract renegotiation through applying higher wages for performance was effective as an attenuator for OCE-induced ADV behaviors. Therefore, M&A practitioners and leaders should consider pay increases, bonuses, stock options, retention bonuses, and other financial incentives to renegotiate employee contracts to reduce ADV.

Both Kotter, Schlesinger, and Clayton suggest that these methods are most effective in middle management, as they are employees who bear the greater

weight of work in the wake of an M&A and have the most influence over workers. Making advocates and champions of cultural change of these employees should be a first consideration in M&A planning and execution.

The Organizational Cultural Entrenchment Inflection Point

Psychological and physical contract renegotiation are table stakes in managing M&A cultural change, and this study has shown the efficacy of managing these renegotiations. However, the study also found that these renegotiation efforts alone have no effect in groups with very high OCE. That is, some organizations will have entrenched processes and attitudes to the extent that these treatments alone will have no effect on the merging of cultures and reduction of ADV behaviors. This point has been referred to in this work as the "Organizational Cultural Entrenchment Inflection Point."

In these cases of high OCE where the OCE Inflection Point has been reached, the M&A plan will require more extensive and costly action. Restructuring, organizational redesign, terminating resistive employees, hiring champions for the M&A, or diluting the existing employee pool of the merged with or acquired company with employees from the parent company may be required to minimize change resistance and threat rigidity.

M&A practitioners and leaders must avoid acquisition targets with high OCE to avoid the increased costs associated with mitigating OCE that is beyond the OCE

Inflection Point. Further, OCE must be managed throughout the M&A life cycle to avoid levels approaching this point.

It is incumbent upon practitioners to avoid targets high in OCE to avoid this inflection point. The outcome of this study may be utilized to provide an OCE baseline against which potential target company OCE levels may be compared.

Instrument for the Measurement of OCE

This study created an instrument for the study of OCE, its relationship with ADV, and the moderating effects of CRM and COR. The instrument is the aggregate of several pre-validated surveys constructed specifically for measuring OCE and its effects. Through this research, each survey item was validated, checking for internal validity, reliability, consistency, and discriminate validity among factors.

The survey was found to be a reliable and useful instrument through the measurement of over 400 participants. Therefore, this survey stands as a good and valid tool for use in ex-post analyses of M&As and in ex-ante reviews of company culture in preparation for M&As. M&A practitioners and leaders should use the survey to evaluate acquired companies to determine the extent to which OCE will play in their pre-and post-merger periods.

In the premerger period, M&A practitioners and leaders should have a sufficient sample of employees within the merged with or acquired company take the OCE portion of the survey. This sample should be sufficient in range to

encompass front-line workers through middle-managers. Upper management is excluded from this grouping because it is assumed that they will be biased toward the M&A, either by financial incentives or by unavoidable business realities driving the M&A.

The outcome of the OCE study within the acquired company should be considered against the outcome data of this study. This study's outcomes may be considered a general baseline against which to compare for OCE. Any first-level factor loadings higher than those in this study within the acquired company should be considered areas for extra concern and attention within the pre-and-post-merger period within the M&A.

Limitations of the Study

Given the expansive field of organizational behavior, social science, and human endeavor, it is very difficult to capture the full scope of the phenomenon of OCE. Further, applying this study across a vast expanse of geography and culture is equally challenging. Because of these issues, this study has limitations that may be partially addressed in future works.

Study Perspective

This study is based on the perspective of those within acquired companies. That is, the study assumes a neutral effect from the acquiring parent company. The study assumes that the employees of the parent are capable, willing, ready, able,

unentrenched, and have a neutral effect on the culture and integration of the acquired. This naïve view was necessary to bound the scope of the study. While the study considered the perceptions of the acquired company most fully, the lack of consideration of the parent company is a significant limitation of this study, which was accepted for purely pragmatic reasons. The future research considerations in this paper will outline possible study improvements for follow-up work in this area.

Generalizability

The first limitation of the study is generalizability across all G7 and EU nations. During the data-gathering phase of the study, an attempt was made to acquire a proportionately relevant sample across all nations of the G7 and EU. However, due to low responses from all non-U.S. nations, range restriction issues were present. These issues lead to the conclusion that this study is broadly applicable to M&As in companies within the United States, but that caution should be taken in assuming that the results of this study can be broadly applied across all G7 and EU nations.

Bounding of First-Order, Latent Variables

The results of this study are based on research of thirteen different factors loading on first- and second-order latent variables. These different factors were chosen by literature and extant scholarly works from Harris, Hirschman, Rusbult, Farrell, Judson, Coetsee, Kotter, and Schlesinger. However, this list was not meant

to be exhaustive. Indeed, completing a study of this nature requires that the researcher limit the scope of items under study to a manageable list from the vast number of contributing and confounding factors that exist in the world of social science.

Recommendations and Future Research

This research has yielded significant findings in organizational behavior by defining and studying OCE, ADV, CRM, and COR. As such, the work forms the basis for more extensive investigation in the social sciences. Further, the study used multiple methods of statistical analysis of a complicated, second-order structural equation model, leading to possible future best-practice studies in statistical analysis. These recommendations for future research are described in this section.

Likelihood and Exploration of Probabilistic Causality

This study considered the effect of OCE on ADV from a probabilistic perspective. That is, the results show that the cause of OCE raises the probability that ADV will occur. This is in contrast to a deterministic view that claims the cause of OCE is sufficient to be the complete cause of ADV (Gianicolo et al., 2020; Hesslow, 1976).

This study was probabilistic in nature since a deterministic, experimental design would require uniting multiple companies and inducing the conditions required to cause OCE and ADV behaviors. Obviously, this sort of experiment would be irrational, as it would precipitate one or more M&A failure conditions that would destroy company value and thus be anathema to the general goals of business and M&As. Because of this inability to perform an experimental study, deterministic causality cannot be assigned from OCE to ADV as the result of this research.

This study, with its documented correlations, does not claim to report a causal effect between OCE and ADV. However, the results clearly indicate a causal inference between OCE and ADV and its resultant behaviors. It can be established that OCE is a prima facie cause of ADV due to its time sequence, the probabilities of both OCE and ADV, and the probability that OCE increases the probability of ADV (Reynolds, 1998; Suppes, 1970). Further, the logic of Suppes may be utilized to express that OCE is a potential prima facie cause of ADV due to the subsequent occurrence of this phenomenon, because "when both events occur [in this case OCE and ADV], the potential becomes actual" (Suppes, 1970, p. 40).

Singular Necessity and Joint Sufficiency

Causal inference can further be established by considering the joint sufficiency of the factors of OCE along with the singular necessity of each one.

It could be said that any single factor comprising OCE in this study does not alone provide the environment to cause ADV behaviors. However, it could also be stated that these individual factors are needed as catalysts to form OCE. Structural inertia has its own bearing on OCE, as does territoriality and the other factors of OCE. These individual factors are necessary components in the composition known as OCE.

The first-order factors of OCE are needed to form the higher-order construct of OCE, but their joint sufficiency builds the causal inference, establishing probabilistic causality. The probabilistic causality yielded from the statistical analysis of this study leads to the conclusion that OCE causally impacts ADV and its incumbent behaviors. That is, ADV is a logical, downstream effect resulting from OCE (Befani, 2012).

Future research may continue to provide meta-analyses and studies of other contributing factors to strengthen the probabilistic causality between OCE and ADV found in this study. Further, the first-order factors of OCE, ADV, and CRM may be augmented to strengthen the causal inferences found within this work.

Meta-Analysis of Studies Across Multiple M&As

The case for causality of OCE on ADV may be strengthened in future research through methodological pluralism. This method utilizes triangulation to compare results from multiple studies to increase confidence in the sufficiency and necessity of factors and relationships. When similar findings arise from multiple

datasets, these meta-analyses will strengthen the probabilistic cause of OCE as a driver of ADV (Gianicolo et al., 2020).

Further, analyses may be executed in specific populations and companies to determine the effect and causal inferences within that given population. This would allow for the analysis of the effect of OCE within specific study populations, thus providing further data for meta-analysis. These data may also be used in establishing baselines across multiple industries, countries, cultures, and geopolitical boundaries for use in meta-analysis.

Augmentation of Study Factors

This study used prior studies to derive first-order, latent factors for study. The works of Harris, Hirschman, Kotter, Schlesinger, and others were source material for the factors of OCE, ADV, CRM, and COR. Future work could expand upon these factors, exploring other possible contributors to the causation of the study phenomena. Do other factors load more highly on OCE? On ADV? To what degree have we identified and eliminated confounding variables? What unmeasured items contributed to the error of the study model? Future works could selectively add observable behavioral factors to measure their loading on the second-order factors, thus yielding an ever-growing set of contributors that could be even more salient than the initial factor set of this study. Control variables such as the total length of the M&A period, the average age of company personnel, the

amount of company training, or the generation of employees since the company inception could be examined to probe for contributors to the model's error quotient.

The study could also investigate the point at which first-order factors lead to an appreciable increase in second-order factors such as OCE, ADV, and CRM. The addition, removal, and meta-analysis of these first-order factors could yield a threshold at which OCE becomes a barrier to the execution of an M&A, or this analysis could yield the point at which ADV has become so toxic that more invasive actions must be taken.

Conclusion of Causality Discussion

Hesslow (1976, p. 4) stated that "the fact that determinism is doubtful or extravagant … is not really relevant to the analysis of causation. What is relevant is if a deterministic assumption is so embedded in ordinary discourse as to affect the language of causality." Through its extensive statistical analysis, this study strongly suggests that OCE is an inferred cause of ADV. There is a clear pattern of effects that are temporally consistent across the timeframe of all study participants, all countries represented, and for each specific observed effect, suggesting a coherence supporting inferred causality. These measured effects of OCE, ADV, CRM, and COR are part of the ordinary discourse of perception for the participants of this study, thus lending to the inference of cause between OCE and ADV.

This study finds that OCE is a probabilistic cause of ADV. Further, it can be concluded that the first-order factors comprising OCE and ADV have an inferred

causal effect on these second-order phenomena. Future research is suggested to augment these factors, controls, and participants further to explore their causal effects. It is also recommended that future findings in this area emphasize the need for M&A practitioners and leaders to heed the risk inherent in acquiring organizations with high OCE.

Criterion of Consequentiality

This study found that one of the consequences of OCE is that of ADV. For the utilitarian, reducing OCE and its resultant ADV would be of the highest value as it would reduce the risk of M&A failure. However, what level of concern should be given to employees' quality of life in the M&A? What responsibility does the M&A leadership have for return to shareholders? What is the balance between utility and egoistic consequentiality?

Future research in OCE and M&As could explore the consequentialist perspective of OCE and ADV, exploring business ethics, social utility, and efficiency (Gustafson, 2018). For example, at what point should action be taken based on high OCE and ADV? Should action be taken on behalf of the shareholder or the employee? At what point does action or inaction become effective, and to what end?

Population and Sample

This study attempted to gather a significant sample proportionately spread across all G7 and EU nations. However, the sample was less than proportionate,

with a significantly higher population of participants from the United States. Future work could more fully sample non-U.S. G7 and EU nations, thus providing a more generalizable sample and study result.

The study sample could also be gathered from single nations, considering their cultural dimensions as moderators between OCE and ADV. This study would be particularly interesting by comparing countries with distinct cultural differences from the U.S., such as Japan, with its comparatively high sense of uncertainty avoidance and long-term orientation (G. H. Hofstede et al., 2010).

The study could also be extended to compare OCE between differing religious, philosophical, ethnic, class, and generational cohorts. Further, OCE tendencies in nonprofit and for-profit organizations could be compared.

Cross-Border M&As

This study did not concern itself with whether the M&A was executed across national borders. Therefore, the interplay of OCE between an acquirer and acquired in different countries was not considered. This study is distinct from comparing OCE effects between countries, as this future work would study the phenomenon of OCE that connects companies across borders. How does cultural distance affect OCE?

Study Perspective

This study considered OCE and its effects through the lens of the acquired as all participants were screened to ensure that they had been part of an acquired

company before, during, and after an M&A. Study participants were asked questions based on their perceptions of that company during pre- and intra-merger periods.

This same study could be executed to gather the perspective of employees of the purchasing parent company. This study would be useful in determining the attitudes and behaviors within the parent company to see if significant OCE exists within the parent or if ADV is a consideration within the parent. Further, this would yield an interesting comparison of OCE and ADV between the acquirer and the acquired that M&A practitioners could utilize when determining the best treatments and processes in executing the M&A.

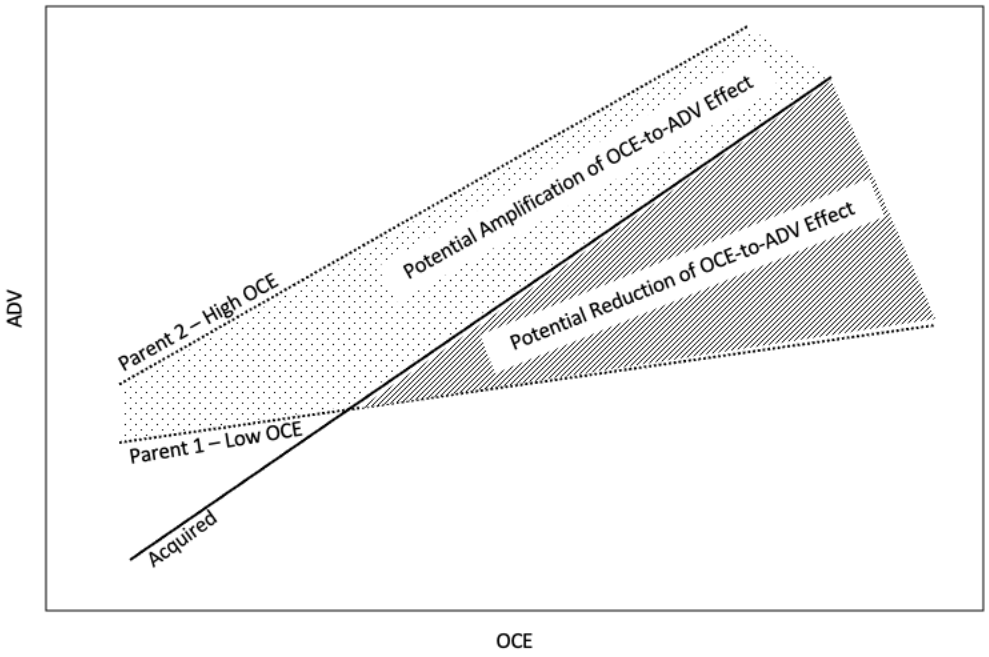
The study could also be extended to consider OCE as a function of both the acquiring and the acquired as a single study, looking for the effect on ADV. Does the combined effect of premerger culture in both parties yield an amplifying effect on ADV? Does the OCE of one party offset the other? How does the power dynamic of the acquiring company affect OCE in the acquired? Does this power inequity result in low OCE in the acquirer since their processes may take precedence? How does the interplay of the imposition of culture and process onto the acquired affect OCE within the acquired when coupled with factors of the acquirer?

Figure 21 diagrams the amplifying or reducing effects that might be found if a combined study of OCE-to-ADV were performed on both the parent and acquired

company within an M&A transaction. This diagram depicts the potential reduction of OCE-to-ADV effects that might be yielded if the parent (Parent 1) has a low OCE and the potential amplification that could be found if the parent (Parent 2) has high OCE. These combined phenomena should be considered in future research.

Figure 21

Possible Combined Effects of OCE-to-ADV in Combined Parent/Acquired Study



Instrument

The study instrument was constructed from previously validated instrument sources. Utilizing the questions asked in this study as a framework, a newly created, targeted instrument could be generated and validated through iteration. This new research could use the existing instrument but could slowly introduce and test new questions for validity within each new study generation to continually

improve the saliency of the study instrument. This would ensure that salient items are asked for each generation of study and that new items could be validated for use within the existing item set or could be added to measure new phenomena.

Qualitative Study

This study extended Harris' qualitative study on entrenched cultural values. This qualitative work could be extended to other populations via interviews and coding, comparing the most salient cultural factors across industry, national, and other boundaries.

Qualitatively extending this work could yield other factors of OCE but could also uncover yet-to-be-explored effects of OCE beyond ADV. These newly found effects could be utilized in future literature reviews and quantitative instrument extensions.

Secondary Data as a Source for OCE Approximation

This study utilized primary data as its source in measuring OCE, ADV, CRM, and COR. Future work could analyze secondary, public company data sources as a way to approximate OCE within a company. This would be useful to companies as the prospect for acquisition targets, helping them to avoid companies whose OCE is measured to be high through proxy measures.

Secondary data sources for OCE approximations could be comprised of company 10Ks, annual shareholder reports, press releases, social media chatter, and business newswire reports. Data yielded within these sources that could be

considered for its effects on OCE could be product initiatives, launches, and updates along with their frequency, upticks or stagnation in hiring, tenure of employees, cash flow, leverage, industry position, reputation, or industry regulation. These and other indicators could be evaluated for their effect or non-effect on OCE, yielding another measure that acquiring companies might use in choosing the best targets for successful M&A execution.

Future studies could include elements of these secondary data sources along with the existing instrument to investigate correlations that could lead to discovering those secondary data sources most salient to the factors under study.

Measuring OCE via Sentiment Analysis

This work measured OCE via a post-ante survey of employee perceptions. However, future research could strive to measure OCE within a company before and during an M&A via sentiment analysis of company communications, including email, voice, and chat traffic. These communications could be analyzed via machine learning, deep learning methods, and natural language processing (Chinnalagu & Durairaj, 2021; Jamil et al., 2023).

Sentiment could be yielded by mining for terms that are specific to OCE. These terms could be mined from a particular lexical database. Further, the mining could be used to code terms, looking for repeated phrases and words pertaining to OCE's first-order factors. Research could then utilize these findings in measuring the loading of the findings onto the second-order factor of OCE.

Extension of Farrell's EVLN Study

This study discussed Farrell's extension of Hirschman and Rusbult's work (Farrell, 1983). The study leaned on Farrell's work in describing active and destructive behaviors. The study suggested a further extension of his work that would extend his multidimensional scale model to include not just active and positive behaviors but active and negative behaviors. These latter behaviors were not a part of Farrell's study, and their inclusion would be an interesting extension of his work, bridging to ADV.

This work would require the inclusion of his initial study behaviors along with those ADV behaviors from this study, as discussed in Chapter 2. His multidimensional scale model should be recreated to yield a new version of his two-dimensional plot, containing actively positive and negative behaviors. This study would require special care to prevent bias and lead participants toward conclusions via biased questions.

The Effect of Company Age on OCE

This work found that the company's age, prior to the M&A, has a significant and slightly negative direct effect on ADV. This effect could be explored more in-depth to determine factors correlated to the reduction in ADV based on company age. Exploration into employee generational cohorts between the company founding and the M&A would yield insights into this phenomenon that could interest practitioners studying potential acquisition targets.

Leadership and OCE

This work measured observed leadership traits of authoritarian and reactive leadership styles as antecedents of OCE. It is believed that these styles of leadership are separate, but teasing these out was not the goal of this work, nor was it within the scope of the study. However, future research could delve more deeply into differing styles of leadership, assessing the effect of each on OCE and, thus, any downstream effects. These styles could be autocratic, democratic, directive, participative, task-oriented, relations-oriented, or initiation versus consideration-oriented (Bass et al., 2008). Further, transactional versus transformational leadership styles could be assessed for their individual influences on OCE (Burns, 2003, 2010).

Divestiture and OCE

This study was concerned with the effect of OCE on the integration of the acquired company. However, further study could examine the point at which OCE leads to the divestiture of a larger company's existing or acquired segment. Future research could measure the OCE of individual business segments or units to determine which units have higher OCE and then determine if there is a specific point at which selling that unit is advantageous to the company's total value.

Other Phenomena Affected by OCE

This study evaluated the effect of OCE on ADV. Future works could consider a host of other factors that OCE could influence. These factors could be

employee satisfaction, turnover, financial outcomes, job-related stress, or various other factors.

Treatments to Reduce ADV

This study evaluated CRM treatment factors suggested by Kotter and Schlesinger. Future work could explore other similar factors for their efficacy in reducing ADV.

This research showed that, at the OCE Inflection Point, the treatments suggested in this study are ineffective in reducing ADV. Future research could explore the point at which these treatments should be set aside or augmented with more invasive treatment measures. Further, research could delve into the efficacy of the treatments themselves to determine if they are most useful in reducing ADV or if other treatments would be more effective. The timing of the treatments, as well as the target employees, could be assessed to validate that they are being utilized correctly.

Future research could explore the effect of more invasive treatment measures as a moderator to the OCE to ADV relationship. Activities such as reorganization, terminations, and personnel dilution could be quantified and studied to determine their efficacy in moderating the OCE-to-ADV relationship. A study could be made to determine if more invasive treatments cause damage in companies with lower levels of OCE and at what level of OCE in an acquired company these treatments begin to have deleterious effects on outcomes.

The Organizational Cultural Entrenchment Inflection Point

The findings of this study formed the genesis of the term "Organizational Cultural Entrenchment Inflection Point." This is the pivotal point where an organization's OCE is so high as to negate any further CRM attempts and where more invasive and costly treatments must be applied to blunt the effects of OCE on ADV.

Future research could be applied to determine 1) which antecedent behaviors are most highly contributing to reaching the OCE Inflection Point, 2) if there are measurable behaviors, perceptions, and attitudes that can be seen as precursors to reaching this point, 3) what treatments should be applied when this point is reached to reduce ADV behaviors, and 4) what effects are found when CRM treatments are applied beyond this point with no other treatments. Future work could also measure risks associated with higher OCE as the inflection point is approached. Further, the Cost of OCE Intervention Curve could be explored to better measure and characterize the rising costs associated with managing OCE, from simple communication, participation, and facilitation activities to full reorganization and personnel dilution activities.

Future research should be executed to gather data so that M&A practitioners and leaders are made aware of the pitfalls of ignoring this inflection point. They must be made aware of the contribution to M&A failure, resulting in the loss of business value, that may be exacerbated in acquiring businesses with OCE beyond

this point. Further research should provide practitioners with evidence to support limiting OCE from reaching this tipping point.

Statistical Meta-Analyses

This study utilized a variety of statistical techniques in the verification and validation of the survey instrument. Structural equation modeling was accomplished via both covariance-based and partial-least-squares methods. Further, various computing resources were brought to bear in the quest to investigate the study's data fully. These analyses have led to a set of possible future research in these areas.

PCA versus EFA Meta-Analysis

This study used both EFA and PCA to determine the validity of the survey instrument. While this made for an interesting comparison, analysis could be given across multiple studies to determine whether one method is superior or if both yield results that suggest their inclusion together is merited in future studies.

This meta-analysis could specifically measure the delta of specific and common variance between methodologies to determine the significance of these values and contemplate which is superior across various situations or within a specific set of study criteria.

CB-SEM versus PLS-SEM Meta-Analysis

This study made use of both covariance-based and partial-least-squares SEM methodologies. While literature exists that describes the virtues and proper applications of both, further analyses, like this study, could be introduced as examples of best practices and when one methodology would be superior.

The meta-analysis could focus on the superiority of PLS-SEM in measuring the interaction of multiple moderating effects, as was found in this study. This meta-analysis could create and evaluate multiple second-order models, each with multiple moderators, to compare PLS-SEM convergence and execution time to that of CB-SEM.

Cloud Computing as a Research Tool

Using cloud computing resources to evaluate SEM models could be an area for future research in a statistical meta-analysis. From a research perspective, are cloud computing resources more cost-effective in terms of core-compute hours? Does the scalability, concurrency, and flexibility in resource types available in the cloud yield an increase in research throughput at a lower cost? This meta-analysis could be particularly useful in research dealing with large datasets requiring iterative analysis.

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Appendices

Appendix A: M&A Statistics of G7 and EU Countries

The total number of M&As for G7 nations from 2000-2022 is 659,893.

Table 43

G7 M&A Statistics, 2000-2022, part 1 of 2 (M&A Statistics by Countries, 2023)

	Canada		France		Germany		Italy	
Year	Number	Value	Number	Value	Number	Value	Number	Value
		in bil. USD		in bil. USD		in bil. USD		in bil. USD
2000	2,862	247.8	2,416	260.19	3,078	233.2	1,141	130.68
2001	2,212	103.2	1,823	131.87	2,069	129.8	907	75.21
2002	2,057	57.4	1,213	112.65	1,636	92.6	573	65.40
2003	1,720	68.0	1,066	58.79	1,580	67.3	742	84.56
2004	2,154	99.8	1,352	139.99	1,657	84.1	722	75.43
2005	2,220	129.7	1,593	146.21	1,921	163.1	878	135.56
2006	2,811	240.3	1,996	286.36	2,364	301.7	1,055	157.38
2007	3,361	365.6	2,267	252.02	2,694	248.3	1,100	223.81
2008	2,953	137.7	1,918	186.99	2,273	146.4	1,123	63.77
2009	3,089	110.4	1,572	81.99	1,770	118.4	854	35.73
2010	3,006	206.3	1,883	107.05	1,759	55.9	795	71.45
2011	2,887	152.9	2,099	104.27	2,082	74.3	760	37.21
2012	2,608	191.8	2,011	51.40	1,876	93.9	604	42.81
2013	2,303	139.6	1,903	96.57	1,778	99.2	628	35.72
2014	2,389	194.0	2,612	250.72	2,028	181.7	721	46.79
2015	2,184	225.9	3,232	157.64	2,032	116.4	980	68.58
2016	2,262	181.3	3,241	151.41	2,175	220.3	1,164	51.03
2017	3,566	165.0	2,660	201.42	2,102	143.7	1,317	81.53
2018	4,275	342	3,050	199.30	3,468	181.4	1,265	86.91
2019	3,892	326	2,789	179.99	3,068	267.05	1,241	49.90
2020	3,773	220.1	2,899	177.72	3,005	234.38	1,039	90.50
2021	4,543	506.8	2,914	146.94	3,267	263.66	1,329	123.14
2022	3,523	282.4	2,890	139.60	2,897	111.04	1,284	111.11
Totals	66,650	4693.74	51,399	3621.09	52,579	3627.75	22,222	1944.20

Table 44

G7 M&A Statistics, 2000-2022, part 2 of 2 (M&A Statistics by Countries, 2023)

	Japan		United Kingdom		United States	
Year	Number	Value	Number	Value	Number	Value
		in bil. USD		in bil. USD		in bil. USD
2000	1,824	139.64	5,171	651	14,114	1,965.81
2001	1,588	65.25	3,826	239	9,652	1,010.58
2002	1,756	50.5	3,081	212	8,571	520.54
2003	1,976	68.78	3,498	180	9,272	668.86
2004	2,281	116.81	3,549	335	10,744	1,006.42
2005	2,893	188.68	3,837	373	11,436	1,342.10
2006	2,902	123.72	4,325	533	13,019	1,843.89
2007	3,043	137.14	4,901	904	13,999	1,967.06
2008	2,973	130.49	4,077	398	11,731	1,215.09
2009	2,815	109.37	2,901	261	9,466	877.61
2010	2,585	111.56	3,335	332	10,191	981.80
2011	2,385	131.01	3,399	246	10,536	1,247.04
2012	2,589	162.27	3,307	211	10,629	995.65
2013	2,565	114.17	2,975	157	10,877	1,214.79
2014	2,573	112.69	3,471	405	12,283	2,153.80
2015	2,866	162.32	3,733	521	12,885	2,417.39
2016	2,970	150.98	3,665	334	13,430	1,784.77
2017	3,208	127.08	4,312	428	15,558	1,761.54
2018	2,180	260.95	6,100	564	20,764	2,431.44
2019	1,992	242.56	5,586	418	21,559	2,358.46
2020	1,820	166.16	5,626	462	18,422	1,896.69
2021	1,706	140.61	5,667	505	25,170	3,474.24
2022	1,901	124.41	5,728	350	21,274	1,997.92
Totals	55,391	3137.15	96,070	9020.11	315,582	37133.48

The total number of M&As for EU nations from 2000-2022 is 255,938, with the exclusion of countries for which no data was available (Bulgaria, Croatia, Republic of Cyprus, Denmark, Estonia, Latvia, Lithuania, Luxembourg, Malta, Romania, Slovakia, and Slovenia).

Table 45

EU M&A Statistics, 2000-2022, part 1 of 4 (M&A Statistics by Countries, 2023)

	Austria		**Belgium**		**Czech Republic**		**Finland**	
Year	Number	Value	Number	Value	Number	Value	Number	Value
		in bil. USD		in bil. USD		in bil. USD		in bil. USD
2000	428	11.99	640	27.70	313	3.49	697	34.80
2001	388	4.58	488	36.04	221	8.05	589	16.75
2002	218	4.13	307	10.59	141	6.45	532	17.66
2003	234	6.25	283	8.74	140	2.40	405	11.85
2004	295	13.35	331	42.47	125	3.01	370	16.80
2005	346	14.73	333	29.05	122	11.10	367	13.50
2006	399	28.88	437	24.94	164	3.57	450	17.17
2007	447	43.71	483	29.71	230	9.39	479	21.13
2008	376	21.17	442	119.11	197	5.82	496	17.34
2009	268	10.68	302	20.60	122	5.56	295	5.89
2010	313	10.79	342	35.69	205	3.23	364	4.94
2011	312	4.54	339	34.13	214	1.46	364	9.94
2012	263	11.98	305	30.36	182	7.80	283	8.35
2013	272	8.10	284	18.68	154	10.73	278	19.05
2014	228	8.34	337	17.62	139	6.08	293	21.11
2015	272	4.52	433	129.14	201	5.16	311	23.01
2016	297	8.63	438	13.63	249	16.04	388	18.36
2017	256	11.25	479	8.52	177	3.30	354	9.00
2018	384	10.09	539	97.20	272	29.52	577	20.20
2019	373	16.27	490	26.09	275	5.80	500	54.25
2020	323	17.81	460	13.48	229	5.70	422	22.62
2021	367	22.12	515	23.18	275	15.30	607	26.46
2022	363	10.35	555	16.69	187	3.10	578	8.16
Totals	7,422	304.27	9,562	813.35	4,534	172.06	9,999	418.33

Table 46

EU M&A Statistics, 2000-2022, part 2 of 4 (M&A Statistics by Countries, 2023)

	France		**Germany**		**Hungary**		**Ireland**	
Year	Number	Value	Number	Value	Number	Value	Number	Value
		in bil. USD		in bil. USD		in bil. USD		in bil. USD
2000	2,416	260.19	3,078	233.2	279	1.59	373	19.13
2001	1,823	131.87	2,069	129.8	164	1.62	235	8.01
2002	1,213	112.65	1,636	92.6	138	0.75	167	7.45
2003	1,066	58.79	1,580	67.3	144	2.62	209	5.63
2004	1,352	139.99	1,657	84.1	104	2.69	209	7.66
2005	1,593	146.21	1,921	163.1	119	4.28	221	10.37
2006	1,996	286.36	2,364	301.7	123	4.97	310	18.27
2007	2,267	252.02	2,694	248.3	138	25.60	363	30.35
2008	1,918	186.99	2,273	146.4	114	2.51	297	13.95
2009	1,572	81.99	1,770	118.4	49	1.93	226	11.16
2010	1,883	107.05	1,759	55.9	88	3.74	206	19.03
2011	2,099	104.27	2,082	74.3	47	3.19	214	27.60
2012	2,011	51.40	1,876	93.9	62	1.51	268	25.68
2013	1,903	96.57	1,778	99.2	70	0.89	225	36.59
2014	2,612	250.72	2,028	181.7	56	0.64	313	131.17
2015	3,232	157.64	2,032	116.4	71	1.75	356	120.39
2016	3,241	151.41	2,175	220.3	106	1.31	306	44.21
2017	2,660	201.42	2,102	143.7	146	1.45	366	21.55
2018	3,050	199.30	3,468	181.4	112	19.65	547	159.90
2019	2,789	179.99	3,068	267.05	123	3.34	495	157.88
2020	2,899	177.72	3,005	234.38	97	4.31	462	157.34
2021	2,914	146.94	3,267	263.66	117	3.84	622	142.39
2022	2,890	139.60	2,897	111.04	97	3.51	539	73.11
Totals	51,399	3621.09	52,579	3627.75	2,564	97.69	7,529	1248.81

Table 47

EU M&A Statistics, 2000-2022, part 3 of 4 (M&A Statistics by Countries, 2023)

	Italy		**Netherlands**		**Poland**		**Portugal**	
Year	Number	Value	Number	Value	Number	Value	Number	Value
		in bil. USD		in bil. USD		in bil. USD		in bil. USD
2000	1141	130.68	1169	131.96	425	9.05	293	25.63
2001	907	75.21	848	63.26	313	7.06	233	7.12
2002	573	65.40	639	31.51	232	3.84	211	6.90
2003	742	84.56	630	23.25	194	2.93	121	4.39
2004	722	75.43	734	114.44	138	3.70	157	14.51
2005	878	135.56	856	78.16	218	11.98	175	8.32
2006	1055	157.38	960	136.32	291	17.34	161	29.76
2007	1100	223.81	1108	394.96	433	10.20	232	34.43
2008	1123	63.77	1142	91.92	497	6.55	261	6.21
2009	854	35.73	857	67.53	369	5.14	141	9.22
2010	795	71.45	889	82.11	499	17.52	170	10.08
2011	760	37.21	968	38.70	398	22.38	91	5.47
2012	604	42.81	836	63523.78	293	11.70	97	16.43
2013	628	35.72	761	75862.77	328	10.65	95	7.22
2014	721	46.79	807	55789.51	519	7.03	93	23.33
2015	980	68.58	894	197147.38	792	8.07	160	6.96
2016	1164	51.03	1077	94482.30	642	13.31	167	4.34
2017	1317	81.53	1028	88.83	485	9.87	184	4.54
2018	1265	86.91	1341	256.60	581	18.41	198	37.41
2019	1241	49.90	1666	204.47	480	8.46	192	8.04
2020	1039	90.50	1252	168.63	469	26.39	180	8.75
2021	1329	123.14	1487	206.03	420	17.52	227	8.20
2022	1284	111.11	1337	132.19	339	9.65	212	3.38
Totals	22,222	1944.20	23,286	489116.61	9,355	258.76	4,051	290.65

Table 48

EU M&A Statistics, 2000-2022, part 4 of 4 (M&A Statistics by Countries, 2023)

	Spain		Sweden	
Year	Number	Value	Number	Value
		in bil. USD		in bil. USD
2000	1138	114.91	1087	45.68
2001	921	40.56	854	35.38
2002	800	29.23	527	17.84
2003	995	50.83	499	19.00
2004	708	60.75	679	29.70
2005	715	143.76	884	49.29
2006	1101	251.67	1118	61.41
2007	1285	223.24	1414	70.09
2008	1519	141.26	1101	87.91
2009	964	47.26	831	19.80
2010	1159	101.98	1098	32.86
2011	1209	71.86	1141	42.29
2012	961	105.96	982	24.07
2013	848	34.05	917	26.82
2014	1074	72.60	827	40.15
2015	1101	47.92	931	24.84
2016	1088	48.76	1057	61.07
2017	1206	99.38	1138	42.98
2018	1731	128.76	1385	46.47
2019	1437	67.19	1299	68.52
2020	1237	74.54	1330	97.21
2021	2012	69.80	1933	212.85
2022	1404	58.39	1791	79.39
Totals	26,613	2084.66	24,823	1235.61

Appendix B: Instrument

The following is the study instrument with mean, standard deviation, and loading data from the full study. The four qualifying questions are followed by a total of 93 items from across each factor, along with the instructions used to prompt participants. The survey ended with six demographic and firmographic questions.

Qualifying Questions

Did you work in a company that merged with or was acquired by another company between 2000 and 2022?
How long did you work with the company **before** the merger or acquisition?
How long did you work with the company **after** the merger or acquisition before leaving the company?
Please select the country of the headquarters of the company that was merged with or acquired.

Organizational Cultural Entrenchment

Structural Inertia (OCE-STR) (Kinnear & Roodt, 1998)

The following questions pertain to **your company's structure and agility of thought before the merger or acquisition**. In answering these questions, remember your time in the company you were employed in **before** it was merged with or acquired by another company.

		Exploratory Factor Analysis		
Item	Construct	M	S.D.	Loading
My company did not allow experimentation.	OCE-STR_1	4.636	1.552	0.817
My company did not allow suggestions for improvement.	OCE-STR_2	4.659	1.703	0.689
My company did not allow suggestions for change implementation.	OCE-STR_3	4.667	1.634	0.696
My company did not consider new ideas.	OCE-STR_4	4.613	1.736	-
My company did not reward creative contributions.	OCE-STR_5	4.728	1.650	-
My company did not allow mistakes.	OCE-STR_6	4.693	1.621	-
My company did not encourage creative problem-solving methods.	OCE-STR_7	4.701	1.651	-

External Locus of Control (OCE-LOC) (Nießen et al., 2022)

The following questions pertain to **your company's attitude toward your internal perspective before the merger or acquisition**. In answering these questions, remember your time in the company you were employed in **before** it was merged with or acquired by another company.

		Exploratory Factor Analysis		
Item	Construct	M	S.D.	Loading
There was very little my company could do in order to change the 'rules of competition' in our industry.	OCE-LOC_1	5.107	1.261	-
Many of the problems experienced by our company could have been avoided through careful planning and analysis.	OCE-LOC_2	5.314	1.182	-
To a great extent, the competitive environment in which my company operated was shaped by forces beyond its control.	OCE-LOC_3	5.229	1.133	-
Becoming a successful company was a matter of creating opportunities, luck had little or nothing to do with it.	OCE-LOC_4	5.301	1.196	-
There was little point in my company taking an active interest in the wider concerns of its industry. because only larger, more powerful companies had any real influence.	OCE-LOC_5	5.078	1.322	0.675
It was not always wise for my company to make strategic plans far ahead because many things might turn out to be a matter of good or bad fortune anyhow.	OCE-LOC_6	4.838	1.457	-
My company could pretty much accomplish whatever it set out to achieve.	OCE-LOC_7	5.208	1.187	-
My company could have an influence in shaping the structure of the market.	OCE-LOC_8	5.225	1.157	-
As regards competing in the market place, my company was the victim of forces it could not control.	OCE-LOC_9	5.036	1.352	-
There was little point in engaging in detailed strategic analyses and planning because often events would occur that my company could not control.	OCE-LOC_10	4.977	1.435	0.799
Usually, companies would fail because they had not taken advantage of their opportunities.	OCE-LOC_11	5.204	1.209	-
My company was able to influence the basis upon which it competed with other firms.				
Companies who rarely experienced strategic problems were just plain lucky.	OCE-LOC_12	5.221	1.110	-
There was a direct connection between the interest our company took in our competitors' businesses and the success of our company.	OCE-LOC_13	5.032	1.343	0.660
My company had a direct role in shaping the environment in which it competed.	OCE-LOC_14	5.286	1.124	-
Market opportunities in our industry were largely predetermined by factors beyond my company's control.	OCE-LOC_15	5.284	1.146	-
	OCE-LOC_16	5.259	1.201	-

Uncertainty Avoidance (OCE-UNA) (Yoo et al., 2011)

The following questions pertain to **how your company dealt with uncertainty before the merger or acquisition**. In answering these questions, remember your time in the company you were employed in **before** it was merged with or acquired by another company.

		Exploratory Factor Analysis		
Item	Construct	M	S.D.	Loading
It was important to have instructions spelled out in detail so that we always knew what we were expected to do at my company.	OCE-UNA_1	5.434	1.060	-
It was important to closely follow instructions and procedures at the company.	OCE-UNA_2	5.491	1.141	0.693
Rules and regulations were important because they informed us of what was expected of us at the company.	OCE-UNA_3	5.491	1.122	-
Standardized work procedures at the company were helpful.	OCE-UNA_4	5.476	1.030	0.614
Instructions for operations were important at the company.	OCE-UNA_5	5.657	1.010	0.660

Authoritarianism (OCE-AUT) (Bhatti et al., 2012)

The following questions pertain to **your company's leadership methods before the merger or acquisition**. In answering these questions, remember your time in the company you were employed in **before** it was merged with or acquired by another company.

Item	Construct	Exploratory Factor Analysis		
		M	S.D.	Loading
When something went wrong, I was afraid to tell my leader.	OCE-AUT_1	4.768	1.524	-
My leader did not think that I knew how to use my creativity and ingenuity to solve organizational problems.	OCE-AUT_2	4.724	1.568	-
When I made a mistake, my leader was impolite in telling me not to do it again.	OCE-AUT_3	4.825	1.603	-
My leader did not allow me to determine what needed to be done and how to do it in my assignments.	OCE-AUT_4	4.739	1.538	-
About any matter/decision, suggestions of employees were not considered by my leader.	OCE-AUT_5	4.766	1.554	-
My leader did not consider the suggestions of employees while making decisions.	OCE-AUT_6	4.653	1.621	-
Whenever there was a difference in expectation, my leader did not work with me to resolve it.	OCE-AUT_7	4.817	1.513	-
Employees were threatened or punished if we did wrong or made mistakes.	OCE-AUT_8	4.789	1.576	-
Employees were never included in votes whenever a major decision had to be made.	OCE-AUT_9	4.836	1.466	0.704
The approval of employees was never considered for major decisions to pass in the department/organization.	OCE-AUT_10	4.903	1.448	-
My leader liked the power that he/she held over his/her subordinates.	OCE-AUT_11	5.059	1.423	-
My leader did not create an environment where employees could take ownership of the project and he/she did not allow employees to participate in the decision-making process.	OCE-AUT_12	4.857	1.522	0.678
My leader considered his/her decision as final.	OCE-AUT_13	5.208	1.341	-

Reactiveness (OCE-REA) (S.K. Parker & Collins, 2010)

The following questions pertain to **how your company's leadership dealt with disruptions and issues before the merger or acquisition**. In answering these questions, remember your time in the company you were employed in before it was merged with or acquired by another company.

Item	Construct	Exploratory Factor Analysis		
		M	S.D.	Loading
My leaders did not create internal awareness of disruptions and did not make attempts to drive this awareness to employees.	OCE-REA_1	4.848	1.471	-
My leaders did not analyze and assess both probability and impact of potential disruptions.	OCE-REA_2	4.865	1.542	0.819
My leaders did not improve our disruption prevention capabilities.	OCE-REA_3	4.846	1.504	-
My leaders did not engage in contingency planning to prepare for potential disruptions.	OCE-REA_4	4.918	1.508	0.885

Territoriality (OCE-TER) (Singh, 2019)

The following questions pertain to **how your company managed ideas and knowledge before the merger or acquisition**. In answering these questions, remember your time in the company you were employed in **before** it was merged with or acquired by another company.

		Exploratory Factor Analysis		
Item	Construct	M	S.D.	Loading
In my company, we protected our ideas from being used by others in the organization.	OCE_TER_1	5.267	1.250	0.804
In my company, we would not allow people who worked with us to use our ideas without our permission.	OCE_TER_2	5.008	1.429	-
In my company, we guarded our knowledge from others at the workplace.	OCE_TER_3	5.114	1.404	0.827
In my company, we asked colleagues not to use information, ideas, and knowledge that we felt belonged to us.	OCE_TER_4	4.992	1.420	0.507

Actively Destructive Voice

Threat Rigidity (ADV-THR) (Daly et al., 2011)

This question pertains to your perception of the **behaviors** of the employees and leaders from your premerger or pre-acquisition company **6-12 months after the merger or acquisition**.

After we were merged with or acquired, we tended to

Item	Construct	Exploratory Factor Analysis M	S.D.	Loading
limit the pursuit of new information	ADV-THR_1	5.093	1.405	-
close off dialog	ADV-THR_2	4.939	1.519	0.699
make decisions based on preconceived judgements	ADV-THR_3	5.173	1.350	-
believe our leaders were unable to solve business problems	ADV-THR_4	5.048	1.451	-
withdraw from professional interaction	ADV-THR_5	4.989	1.479	0.836
use short-term fixes for complex problems	ADV-THR_6	5.084	1.383	-
respond to demands impulsively	ADV-THR_7	4.998	1.443	-
limit the flow of information	ADV-THR_8	5.069	1.511	0.712
limit outside assistance	ADV-THR_9	5.053	1.451	-
grasp for solutions in a frantic manner	ADV-THR_10	5.107	1.430	-
avoid opportunities for collaboration	ADV-THR_11	4.958	1.581	0.711

Resistance to Change (ADV-RTC) (Giangrecco & Peccei, 2005)

This question pertains to how you perceived the **resistance to change** from employees and leaders from your premerger or pre-acquisition company **6-12 months after the merger or acquisition**.

After we were merged with or acquired, there was a tendency to

Item	Construct	Exploratory Factor Analysis M	S.D.	Loading
be critical about the merger or acquisition in public discussions	ADV-RTC_1	5.204	1.218	0.616
be critical about the merger or acquisition with my superiors	ADV-RTC_2	5.206	1.405	0.610
support the actions of subordinates against the merger or acquisition	ADV-RTC_3	5.101	1.377	0.692
support the actions of colleagues against the merger or acquisition	ADV-RTC_4	5.181	1.338	0.867

Change Resistance Mitigation

In answering these questions, remember your time in the merged or acquired company in **both the premerger and integration phases** of the merger or acquisition. **That is, before the merger or acquisition and the 12-month period following when the company has been brought under new ownership.**

Communication (CRM-COM) (Miller et al., 1994)

The following questions pertain to the **effectiveness of communication** during the premerger and integration phases of the merger or acquisition:

		Exploratory Factor Analysis		
Item	Construct	M	S.D.	Loading
The information my group received about the implementation of the merger or acquisition was timely.	CRM-COM_1	5.394	1.055	-
The information my group received about the implementation of the merger or acquisition was useful.	CRM-COM_2	5.345	1.225	-
The information my group received about the implementation of the merger or acquisition adequately answered our questions about the merger or acquisition.	CRM-COM_3	5.364	1.146	0.714
The information provided about the merger or acquisition was positive.	CRM-COM_4	5.419	1.106	-
The information provided about the merger or acquisition was favorable.	CRM-COM_5	5.362	1.138	-
The way in which the information about the implementation of the merger or acquisition was communicated was done appropriately.	CRM-COM_6	5.375	1.111	0.753

Participation (CRM-PAR) (Bordia et al., 2003)

The following questions pertain to the **amount of participation allowed** by leadership during the premerger and integration phases of the merger or acquisition:

		Exploratory Factor Analysis		
Item	Construct	M	S.D.	Loading
My group was allowed to provide input regarding our job roles.	CRM-PAR_1	5.352	1.137	-
My group's supervisor sought our input on important decisions.	CRM-PAR_2	5.368	1.273	0.683
My group's ideas and opinions were valued and paid attention to.	CRM-PAR_3	5.442	1.209	0.746
My group was able to actively participate in decision-making regarding things that affected us.	CRM-PAR_4	5.398	1.237	0.690

Facilitation (CRM-FAC) (Braun et al., 2017)

The following questions pertain to the **facilitation and support given by leadership** during the premerger and integration phases of the merger or acquisition:

Item	Construct	Exploratory Factor Analysis		
		M	S.D.	Loading
The members of my group had someone at work with whom we could speak with confidentially for guidance.	CRM-FAC_1	5.429	1.060	-
When faced with concerns at work, the members of my group didn't feel alone, we had peers we could trust to talk with.	CRM-FAC_2	5.343	1.235	0.675
The members of my group could talk with people more than just about work, like personal interests and outside hobbies.	CRM-FAC_3	5.392	1.100	-
My group had strong social connections at work.	CRM-FAC_4	5.463	1.146	-
The members of my group felt like we were part of a team.	CRM-FAC_5	5.564	1.072	0.580

Negotiation (CRM-NEG) (Yu & Ming, 2008)

The following questions pertain to the **negotiation of pay and outcomes by leadership** during the premerger and integration phases of the merger or acquisition:

Item	Construct	Exploratory Factor Analysis		
		M	S.D.	Loading
Performance evaluations placed primary weight on results.	CRM-NEG_1	5.379	1.089	0.659
Pay consisted of performance-based rewards.	CRM-NEG_2	5.333	1.271	-
Pre-established targets were used as a benchmark for evaluations.	CRM-NEG_3	5.337	1.239	-
Numerical records were used as the chief index of effectiveness.	CRM-NEG_4	5.375	1.117	-
Differences in pay represented differences in performance levels.	CRM-NEG_5	5.282	1.236	0.774
Regardless of what group members were like personally, our performance was judged by results achieved.	CRM-NEG_6	5.366	1.175	-
The rewards we received were linked to results.	CRM-NEG_7	5.320	1.209	-
Those who did not reach objectives received a low rating.	CRM-NEG_8	5.200	1.344	-
Regardless of the absolute accomplishments of members of the group, our appraisals were based on whether we reached our goals.	CRM-NEG_9	5.293	1.103	0.692

Coercion

Coercion (COR) (Szabla, 2007)

The following questions pertain to **coercive tactics employed by leadership** during the premerger and integration phases of the merger or acquisition:

Item	Construct	Exploratory Factor Analysis		
		M	S.D.	Loading
The need for the merger or acquisition was justified by members of top management only.	COR_1	5.408	1.074	-
To get employees to join with the new company, those leading the merger or acquisition used their positions of power in the form of threats to force the joining of the companies.	COR_2	5.198	1.415	0.714
Those leading the merger or acquisition played the role of order giver.	COR_3	5.371	1.137	-
Those leading the merger or acquisition did not focus on how employees were accepting the change.	COR_4	5.232	1.287	0.607
Those leading the merger or acquisition created a division between themselves and those responsible for carrying out the joining of the companies.	COR_5	5.259	1.237	0.774

Demographic and Firmographic Questions

Select Industry Sector and Subsector. <List from NAICS>
How many years had the company been in business when it was acquired or merged? <Whole number picklist>
How many employees did the company have when it was acquired or merged? (0-20, 21-49, 50-99, 100-199, 200-999, 1000-9999, > 9999)
When was the company last acquired? (less than 90 days ago, 90 days to three years ago, more than three years ago)
Gender (Male, Female, Other)
Years employed by the company <Whole number picklist>

Appendix C: Institutional Review Board Approval

The following letter of approval was received from the Florida Institute of Technology Institutional Review Board on May 12, 2023, approving the research protocol for this study:

Florida Institute of Technology
Institutional Review Board

Notice of Exempt Review Status
Certificate of Clearance for Human Participants Research

Principal Investigator:	Keith Holloway
Date:	May 12, 2023
IRB Number:	23-066
Study Title:	Organizational Cultural Entrenchment: Exploring Cultural Antecedents of Active and Destructive Employee Behaviors in Mergers and Acquisitions as a Manifestation of Voice

Your research protocol was reviewed and approved by the IRB Chairperson. Per federal regulations, 45 CFR 46.101, your study has been determined to be minimal risk for human subjects and exempt from 45 CFR46 federal regulations. The Exempt determination is valid indefinitely. Substantive changes to the approved exempt research must be requested and approved prior to their initiation. Investigators may request proposed changes by submitting a Revision Request form found on the IRB website.

Acceptance of this study is based on your agreement to abide by the policies and procedures of Florida Institute of Technology's Human Research Protection Program (http://web2.fit.edu/crm/irb/) and does not replace any other approvals that may be required.

All data, which may include signed consent form documents, must be retained in a secure location for a minimum of three years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained on a password-protected computer if electronic information is used. Access to data is limited to authorized individuals listed as key study personnel.

The category for which exempt status has been determined for this protocol is as follows:

2. Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

a. The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects; or

b. Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation; or

c. The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and IRB can determine if there are adequate provisions in place to protect the privacy of the subjects and confidentiality of the data.

Appendix D: Informed Consent Letter

The following informed consent letter was presented to all study participants in the Qualtrics portal at the beginning of the study survey. If the user did not consent, they were immediately dismissed from the survey.

Purpose
The purpose of this research is to learn more about organizational culture and the factors of culture that lead to negative behaviors during mergers and acquisitions. The research also strives to learn methods to minimize the negative effects of change during mergers and acquisitions.

Procedures
Participants in this study will be asked to complete a survey that will take around 10 minutes to complete. All questions (with the exception of questions about number of years and number of employees) will require the participant to select a value on a scale to denote how they perceive the strength of the behavior regarding the item in question.

Risks
There is no risk of physical discomfort to the participant.

Questions will be asked about the perceptions of the participant during the period during a merger or acquisition. This could evoke memories of this period, but this is not considered a risk to the participant.

Benefits
This study will lead to greater knowledge of the factors of organizational culture that lead to negative behaviors during a merger or acquisition. Also, this study will help identify those treatments which, when applied, can reduce negative behaviors during a merger or acquisition. This knowledge can help leaders, human resource practitioners, and personnel involved in merger and acquisition strategy to prepare and execute mergers and acquisitions in such a way that culture is integrated more positively.

Alternatives
There are no alternatives to the completion of the survey. If the potential participant is uncomfortable or does not want to complete the survey for any reason, they may elect not to participate with no negative repercussions.

Confidentiality
All data collected as a result of this study will be kept on encrypted disks with access controlled via biometric security. No personally identifiable information will be gathered.

Primary Investigator Information
Keith Holloway, Doctoral Candidate at the Florida Institute of Technology is the primary investigator and point-of-contact for this study. He may be contacted at kholloway1998@my.fit.edu with any questions or concerns.

Voluntary Participation
Participation is voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled.