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2023 Appalachian Research in Business Symposium

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It is our pleasure to present the Proceedings of the Appalachian Research in Business Symposium from the 2023 conference. The conference was held on March 30-31, 2023, hosted by the Davis College of Business and Economics at Radford University.

The Appalachian Research in Business Symposium provides a venue for presenting new research, discovering contemporary ideas, and building connections among scholars at Appalachian State University, Eastern Kentucky University, East Tennessee State University, Marshall University, Radford University, and Western Carolina University.

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CARBON DIOXIDE (CO₂) EMISSIONS LABELING: A CONSUMER PERSPECTIVE

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Introduction

Climate change and the need for sustainable development represent some the world's current challenges (Felsenthal 2021). Thus, in 2015 the United Nations created the 2030 Agenda for Sustainable Development that includes several calls-to-action (United Nations). This manifesto calls on global partners to focus on initiatives that solve issues from climate change to poverty and health care. At the macro-level, the challenges and outcomes of various decisions have the potential to be measured. However, at the individual level, several questions remain including: What can I do to make change? Does it matter? What/ who can I trust? Why should I care?

Utilizing depth interviews with US consumers, we explore consumer perceptions of climate change, sustainability, and food choice. We then concentrate on perceptions of carbon dioxide emission labeling and decision making on food choice (Albinsson and Connor 2011, 2014).

Literature Overview

Although consumers are aware of concerns related to climate change and the need for sustainable solutions, it is difficult to assess what one can individually do to affect change. Sustainable

initiatives such as recycling, renewables, etc. seem straightforward, but execution can be lacking due to limitations in individual resources (Harmann and Siegrist 2017). Essentially, consumers lack the skills and knowledge to always make, or want to make, the 'best' decision. For example, Edenbrandt, Lagerkvist, and Nordström, (2021), in their study on carbon labels, find some consumers may choose to avoid unwanted or uncomfortable information to not feel guilty over their consumption choices. Additionally, some studies show that consumers avoid information about animal welfare in some food choice situations (Bell et al. 2017) while others have shown that consumers avoid looking at nutrition information (Thunström, et al. 2016). In addition, while a larger number of consumers state that they care for the environment, there is an observed attitude-behavior gap in the marketplace (Röös and Tjärnemo 2011).

Overall, the ideals around these initiatives are broad and complex. In fact, the United Nations has seventeen sustainable goals as part of the 2030 agenda (United Nations). However, they do not represent tangible initiatives organizations or individuals can make to affect positive change. For example, Goal 12 calls for responsible production and consumption with an emphasis on food. However, consumers in general have limited knowledge about the climate impact of their food choices (Harmann and Siegrist 2017) with many consumers left confused by the concept of carbon labeling (Albinsson and Conner 2011, 2014). It is essential for food marketers to identify strategies to inform customers about the environmental impact of their food products if they claim they are using sustainable sourcing and production methods. Alternatively, if some restaurants offer so called eco-friendly or low-carbon alternatives (see Max Restaurants, Panera etc.), they must educate their customers about their processes and the impact of consumers' choices. While some literature has investigated carbon labeling on food menus in a limited capacity (Albinsson and Conner 2011, 2014; Babakhani, Lee, and Dolnicar 2020), there is currently no widespread use of such labels at a global scale nor is there strong understanding of consumer perceptions surrounding the use of such labeling. This study seeks to qualitatively assess consumer knowledge of these issues and its potential impact on facilitating behavioral modifications.

Method

As the field is still in its infancy, an exploratory approach was considered. In-depth interviews were structured to uncover participant perceptions, attitudes, and behaviors around climate change, sustainability, food label awareness, and food preferences. During the interviews, informants were shown examples of industry practices of carbon labeling such as Panera's Cool Foods Meals and Max Restaurants in Sweden's kgCO₂e information. Informants were recruited from the southeastern United States via email and word-of-mouth. Twenty depth interviews with eight males and twelve females, ages 20-63, were conducted via Zoom video-conferencing software and data was transcribed and analyzed by the authors. The analysis of the data began with iterative readings (Strauss and Corbin 1998) and then, using a hermeneutic and phenomenological approach (Thompson, Locander, and Pollio 1989), emergent themes were developed, explored, and presented below.

Results and Implications

Data analysis illustrates that few informants, although voicing concern for global warming and climate change, are familiar with carbon labeling practices and their implications in the

marketplace. As we will see in the following excerpts consumer sentiments varies greatly on a continuum from concern, denial, indifference to fear about Climate Change. Only three informants in our sample noticed carbon labeling information while doing either research on products or during their shopping experience. However, while they may not have noticed or been exposed to much carbon labeling practices their awareness of lower carbon emission products and practices are quite noticeable.

"I would definitely reconsider buying a product if the CO2 emissions from it were high" (Bob, 23).

"I think it would sway my decision to a certain extent...I don't have a ton of money in college so if it's going to be twice as expensive because it's carbon neutral I'm probably not going to go with that option" (George, 22)

While fourteen informants show great concern for global warming and the environment in general, six informants stated they are indifferent or ambivalent. Interestingly all informants that show no or little concern do state they engage in various reduce, reuse, recycling practices such as minimalistic consumption, purchasing organic foods and bringing reusable bags when shopping. Additionally, the same informants who state they are indifferent to global warming, agree that one should reduce one's carbon footprint. For several informants, while they could be placed on a continuum on low concern to high concern and even fear, there seems to be lack of urgency and individual commitment in providing solutions through individual change in consumption practices. Bridget, 48, a High School Teacher, for example shared: *"Don't get me wrong, I love the environment but in order to really buy-in and "help" the environment then everyone in the world should too."*

On the opposite spectrum is Bob, who is scared of the lack of action to mitigate climate change and is going above and beyond to reduce his carbon footprint: *"I live off grid in a tiny home community outside of town. All of our power is run off of the solar panels on the property. We have rain collection barrels that we fill up buckets of water from to pour into our filtration system inside to drink from and wash dishes. We have a wood burning fireplace inside where we use firewood from the property to heat the home. We have a compostable toilet inside to use as well."* (Bob, college student).

The informants who fall on the more concerned/ fearful end of the continuum, express that they look for organic whole foods, sustainable packaging, grass fed beef, sustainable palm oil, and quality when shopping for foods. For example, Gabriella (20, college student) who describes herself as being scared of the current climate situation shares: *"I recycle and stuff and make sure to not waste food and water when I am eating. These are probably the two biggest things; I also try to use reusable shopping bags which helps with carbon footprint."* Her concern for global warming is expressed in her sentiment on reducing carbon footprint.

Two informants admitted they do not look at labels on food products, instead they make their purchasing decisions using heuristics (Chalamon and Nabec 2016). These informants are among a group that distrust the information provided. Savannah, 21, a college student, is concerned about the lack of regulations on words such as "natural" that are favoring producers and not consumers who will have to do the *"heavy lifting in terms of educating themselves to make ethical and*

sustainable decisions in the marketplace.” Joe, 22, also distrusts governmental agencies such as the Food and Drug Administration: *“I barely trust the FDA, I just know there are people behind the FDA that are not trustworthy.”*

However, the opposite is experienced by George, 22, who expressed trust in food labels as he has not been given a reason not to trust them. Elisabeth, 22, an event marketing specialist, shared about her level of trust: *“yes...but I feel that I really don't have a choice...meaning that as consumers we are forced to believe the information the labels provide.”*

Our findings on consumer (dis)trust in labels should concerning to food manufacturers who therefore should examine their communication strategies and perhaps offer additional transparency in their use of raw materials, sourced materials, and their manufacturing processes.

Several informants want manufacturers and brands to provide more information on food's negative impact on the environment, but governments should also put more emphasis on educating consumers about their consumption choices. Bob, for example, stated: *“I feel like there isn't enough education on this subject, so people turn a blind eye to it all and just eat whatever they think is good for them without really knowing much.”*

When asked the question if they identified as an informed consumer, over a fourth of the sample stated they did not think they were informed about foods' impact on the climate enough. Bridget, while admitting that she is not so concerned about climate change she does admit that she is not that knowledgeable about the topic: *“...The amount of knowledge I am missing, there is no way I am truly informed.”* Elliot, 21, who is an avid meat eater still cares about what he buys and consumes: *“It's hard to gage where every piece of food your eating is coming from, there are things you have absolutely no idea about, to be informed you really have to take initiative and research where these things are coming from”*

While several informants show clear distrust towards food producers, findings show that informants believe that food producers are responsible to engage in more sustainable practices. There is a desire for food producers to provide more information and improve their practices. Bridget shares: *“Absolutely everyone is responsible for what they do and how they do things. If a company lives by a certain code then they are responsible for upholding that code. That certainly involves their production process. If they do not know how their production works or what is being done then they are not running an effective business.”* Savannah holds a more shared responsibility view: *“We all have a social responsibility, and everyone has to play a part, while food producers should have responsible and sustainable operations, consumers are also responsible for making sustainable food choices.”*

While there are mixed responses on how much informants pay attention to labels on food packaging, several informants shared their desire to see additional information from producers on product packaging and restaurant menus. Informants listed that they wanted more transparency for GMO processes, ingredients, general processing (and how it affects nutrition), carbon impact, animal welfare, water and electricity consumption during production, carbon footprint of goods, animal feed for meat products, original producer name, source origin, and any negative effects from chemicals used.

Conclusion

Consumer perceptions and understanding of sustainability-focused initiatives, particularly “newer” practice-based applications, such as carbon labeling, are clearly in their infancy. While some consumers are skeptical of product labels in general, others trust information labels and would use carbon information presented on labels as part of their overall purchase evaluations. In fact, with regards to nutritional information like ingredients, GMOs, various nutritional macros, etc., many consumers already incorporate labeling information into their consumption-based decisions. Clearly, our preliminary, qualitative examination indicates that there is potential to educate and influence consumer choice based on detailed carbon labeling. However, several fundamental questions remain. The willingness from consumers to learn to make better choices presents opportunities for responsible food marketers engaging in sustainability-oriented practices to adopt carbon labels for use on their products. Crucially, as carbon labeling is still in limited use, an empirical examination that experimentally tests whether these identified behavioral intentions translate into actual behavioral change is necessary. Furthermore, future research should assess cross-cultural differences.

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INTERNATIONAL STUDENT SUCCESS: A GUIDE TO THRIVE IN AND OUT OF THE CLASSROOM

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Introduction

Historically, the College of Business and Technology at a regional state university has been home to nearly half of all international students studying at the university. Despite their comprising nearly 10% of the students enrolled in the college, few if any support mechanisms were in place to serve international students. Within the college, international programs had always been handled in an entirely decentralized manner. This state of affairs largely reflected the international programs strategy, or lack thereof, at the university-level. Beyond a brief international student

orientation provided by the university which focused primarily on visa compliance, only minimal programming to support international students was offered. And, despite hosting the largest single proportion of international students in a college, the College of Business and Technology did not provide a specialized orientation for international students, a dedicated international student advisor, or any other services supporting the success of international students. The purpose of this study is to illuminate the need for and creation of an in-depth onboarding of visiting international undergraduate and graduate students that may be utilized by other universities with international students who have similar unmet needs.

Literature Overview

Living and studying in a foreign country requires many sociocultural, environmental, and physiological adjustments. Chen (1999) suggested two categories of stressors for international students: stressors related to the academic and educational environment, and stressors in the sociocultural and personal domain. Educational stressors include performance expectations, system adjustment, and test-taking anxiety (Chen, 1999). Chen's (1999) four sociocultural stressors includes: culture shock, social isolation, financial concerns, and racial discrimination or prejudice. Understanding these international student stressors can assist in the development of coping strategies for the individual student supported by the host university.

Onboarding international students can be compared to orienting or onboarding new employees. According to Zalaznick (2014), onboarding international college students should recognize and address five major barriers for international students to aid in their adjustment: language, engagement, inhibitions to utilize support services, navigating campus life, and compliance with legal requirements. Recognizing these five major barriers to international student adjustment can assist in the creation of more effective onboarding programs to support the study abroad experience.

Most universities offer short, compressed international student orientations focused on immediate student needs which take place shortly after students arrive on campus. Students often find such compressed orientations to be overwhelming and, thus, retain little, if any, of the information. In contrast to compressed orientations, integrated seminars can be delivered over an extended period of time which allow increased engagement among international students, domestic students, and faculty. Such integrated seminars can focus more strategically on the long-term social, academic, and professional success of international students.

Methodology

This is a case study of how one college at a regional state university developed integrated seminars for visiting international students to be delivered over an extended period of time. The details of this case would be informative to universities with no strategic international student onboarding program.

With the arrival of a new dean from a university with outstanding international programs campus-wide, a new strategic plan was launched in the college of the present study. Recognizing that the college offered many of the programs in highest demand by international students and faced with a university-level enrollment growth agenda, the new dean proposed that international students

would need to play an expanded role in the college's growth. He also foresaw that to properly host currently enrolled and future international students, the college needed to take a much more strategic approach to the full enrollment cycle for international students (e.g. from recruitment to alumni relations). Since financial resources for international programs were not available within the College at that time, obtaining funding required a proposal to the university's Board of Trustees to support a new international programs initiative within the college.

With the charge from the new dean, an associate dean created a series of integrated international student seminars for new international students studying in the business and technology programs. The International Student Seminar (ISS) program in the present study was configured as four one credit-hour courses; a requirement for all international undergraduate and graduate students studying in the College. A course fee was attached to each ISS course to support the ISS program with materials and supplies, meals, activities and events as well as other international programs' initiatives within the College.

The primary goal for the ISS program is to orient, develop, and educate international students. The four ISS courses are designed with a common format: each class meeting covers an academic module, a cultural module, and a professional module. Each ISS course module and each semester has strategic learning objectives. Pedagogical methods employed in the seminar courses include: group work and team assignments, group and semester games and competitions, self-assessments, public discussion board posts and responses, private journal posts, quizzes, course assessments, and student success partner emails and meetings. Some pedagogical methods and assignments also span multiple semesters to advance students' academic, cultural and professional skills.

Each ISS course is cross listed as an undergraduate and graduate course, is required to have 15 contact hours with students, and is delivered over three Saturdays during the semester. Student attendance is mandatory and comprises a significant portion of the ISS course grade. To properly develop and deliver integrated international student seminar courses, resources are required. Some of these costs are primarily necessary for design and development while other costs are recurring. The program coordinator prepared all materials and assignments; faculty volunteer to teach the ISS courses as a service to the College. Instructors deliver modules based on their expertise and recruit assistance from other units on campus (e.g., career services, advising) and from the community.

Results and Implications

Not surprisingly, the development of this new program faced multiple administrative challenges and barriers such as approvals regarding fees, curriculum content, student communication, and enforcement of ISS course requirements. Further, in its second year of implementation, the COVID pandemic forced the ISS program to immediately pivot to a remote, asynchronous format. Though this was difficult for all university students and faculty, international students struggled with significant additional burdens including: concern over family members' wellbeing, concerns over travel home and potential problems re-entering the U.S. to return to study at the University, decisions about whether or not to return to study, and exacerbated financial concerns. In order to better support the students, the college conducted a survey to determine international students' immediate and longer-term needs. Students identified as "at risk" were contacted by college staff members and were matched with university resources. The ISS courses continued to be delivered

online in asynchronous format through the next academic year though online learning did not support the desired community-building of international students. Fortunately, the college's ISS courses returned to face-to-face delivery in the fall of 2022.

In the four years since the launch of the ISS program, the following best practices have been illuminated:

- Non-native English language learners need most information presented in writing. Although common presentation slide guidelines recommend minimal words, international students need things spelled out more clearly.
- Lecture videos aid students learning English.
- Homework and due date reminders should be posted in several locations because many international students are not used to the amount of homework required in the U.S.
- Student-workers in the seminar classrooms are particularly helpful for international students because they are much more likely to ask questions of other students than of faculty.
- International students may be hesitant to answer questions in class but are often willing to summarize the responses of a group; thus, working in teams and having one student report on the group's answer is more effective.

In summary, the College of Business and Technology that houses nearly half of all international students studying at the regional state university has undertaken a significant effort to orient and support visiting international students over a period of four semesters.

Conclusion

The primary limitation of this study is that it includes only one College of Business in one regional university making it impossible to generalize to all colleges and universities; however, it is a valuable case study of how one college sought to improve international student onboarding. The details of creating and implementing such a program are available to provide guidance to future ISS programs.

During the initial four years of the ISS program, international students completed course assessments which provided valuable feedback for instructors. This student feedback has been used to make adjustments to assignment due dates, classroom organization, course assignments, and class lectures to support the international students' success. With IRB approval, further data from course evaluations can be used to make recommendations for future international student orientation programs. Further, opportunities exist to create community among university international students, domestic students, faculty, and staff as well as the larger community/region. In addition, longer-term opportunities for an international summer school program within the college could generate additional revenue and provide additional opportunities for domestic and international student collaboration.

The contribution of this study is to demonstrate the need for an in-depth orientation process for visiting international students and to present one possible solution to the hasty and decentralized orientation programs offered by many universities. A comprehensive onboarding program such as this case study presents can be used as a strategic approach to the full enrollment cycle for international undergraduate and graduate students.

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CHARACTER ANALYSIS FROM TEXT STORIES USING SENTIMENT ANALYSIS AND UNSUPERVISED CLUSTERING

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Natural Language Processing, Text Mining, Text Analysis, Storytelling, Unsupervised learning.

Introduction

In storytelling, readers, authors, and academics hold opinions on what characters represent. People relate to popular characters from literature - Achilles, the brash general; Perseus, the quick-witted hero; Medusa, the unfortunate villain; etc. Traditionally, researchers analyze these characters qualitatively and hold different opinions on what they stand for. Machine learning models can offer a distinct perspective by drawing statistical correlations that humans may overlook, and because of their quantitative nature are unbiased analysts. We used natural language tools to mine the unstructured text of classical works of fiction and model how the story's characters change

over time. Then, we used clustering to find insight into character types. In tandem, we used these two techniques to better understand the texts.

In this paper, we propose a novel model to analyze characters in textual stories and identify the change of characters over time. The proposed model uses two main state of the art techniques- Natural Language Processing (NLP) and unsupervised clustering. The former is used to mine the unstructured text of classical stories and analyze the characters' sentiments, while the latter is used to draw insights into the character types in stories. The motivation behind this study is to learn to what degree we can use computer programs to understand characters. This is a two-fold endeavor: to find if a computer program can understand characters over the course of a story, and to what degree it can effectively cluster them into distinct groups of shared characteristics. This paper addresses three main research questions: First, can NLP be used to capture character sentiment with time tracking and to understand how characters in stories change? Second, do the captured sentiments provide any insights about the character type? Third, can NLP cluster characters from stories into meaningful categories/clusters with shared characteristics?

Literature Overview

Prior work has been done in computational fiction analysis. Dekker et al. (2019) created a program that uses NER (Named Entity Recognition) to find characters and their relationships. The authors looked to create a topological social network of characters for both classic and modern works. This study would answer how well these tools can analyze fictional characters and enable comparison between novels. Of the forty classic and modern novels analyzed (split 20/20), the authors found no significant difference in modeling. However, they found that third-person novels were much easier to summarize than first-person novels. Short (2019), in contrast, was focused on text mining and subject analysis. He performed his analysis on a collection of seven thousand digitized dime novels held by Northern Illinois University (of the over 55000 in their possession waiting to be digitized). This study aimed to aid researchers and librarians in classifying dime novels, which often lack documentation. He wanted to add subject headings to these novels based on their textual content. Another aim was subject analysis, for example, finding all novels that are about Salt Lake City. The author used OCR to extract the text from scanned books. Then, the words were tokenized and converted to vectors with TD-IDF. The study found that with five distinct genres, it was possible to classify novels correctly 77 percent of the time.

One important component of fiction analysis concerns mining data from large unstructured text corpora. Sami (2020) used natural language processing to find topics and trends in an unstructured corpus. The author used data summarization and visualization to perform contextual storytelling on the dataset. The corpus was 332 articles from the COVID-19 bioRxiv/medRxiv corpus that are on the topic of China. The goal was to extract the most important topics and sort them into meaningful groups: positive sentiment, negative sentiment, same topic, core content, and other topics. The author visualized these groups in a bubble chart that showed the biggest topics of each group. The groups were then used to provide a narrative about how China was interpreted within the corpus relative to other topics. A general theory of large text mining was motivated by Rehm, et al. (2019) who outline their vision for how semantic storytelling could be used to mine large text corpora. This method of text analysis would use natural language processing to extract entities, form connections, and map events and could assist knowledge workers in making sense of large unstructured textual data. The authors divide semantic storytelling into semantic analysis, text

genre-specific story knowledge, and semantic generation. Semantic analysis involves entity extraction through tools such as Named Entity Recognition, which can then be linked to concepts from external sites such as Wikidata. Semantic generation packages and visualizes the semantically extracted information, while story knowledge is dependent on the genre and could take the form of a timeline or text extracts.

Character analysis has often included classifying characters into archetypes. Yusufvna (2022) motivated several types of characters that are emergent in English literature aimed at children. These types are protagonist, antagonist, deuteragonist, and foil. The protagonist is the hero who embodies the ideals of society and shows how to act. The antagonist, often embodying evil, works to prevent the protagonist from achieving their goals. The deuteragonist helps the protagonist in their journey. The foil contrasts with the protagonist and can be a deuteragonist or antagonist. The author cites Charles Dicken’s *Great Expectations* as exemplifying these types: the antagonist Orlick kills, steals, and attacks the protagonist, Pip. The novel instructs on moral living through the actions the characters take per their types.

Methodology

This section describes our approach to character clustering analysis. We start by presenting the dataset that we used to experiment with our proposed model. Our dataset comprised two well-known fictional works: *The Odyssey* (Heinemann, 1919) and *Harry Potter and the Sorcerer’s Stone* (Rowling, 1999). We sourced the former book from the Internet Archive and the latter from a GitHub repository. We downloaded the books as raw text files and manually removed book and chapter titles from the sources so that the unstructured body text would be used as input to our proposed model. The dataset includes a total of 9693 sentences with 195629 words. Table 1 depicts the specifications of each book in the dataset.

Book	Sentence Count	Word Count	Average Sentence Length
Homer’s <i>The Odyssey</i>	3556	78324	32
J.K. Rowling’s <i>Harry Potter and the Sorcerer’s Stone</i>	6137	117305	13

Table 1. Dataset overview

As shown in Figure 1, the proposed model comprises 5 main steps. These steps include: (i) Text Preprocessing, (ii) Sentence Extraction, (iii) Character Extraction, (iv) Feature Engineering and (v) Character Clustering. In the following subsections, we present these steps in detail.

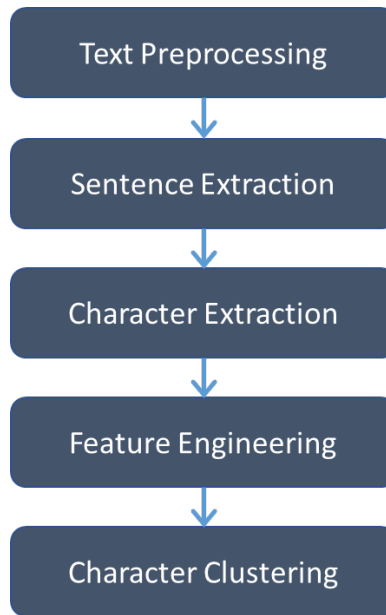


Figure 1. The proposed model

Text Preprocessing: this step includes removing all punctuation except apostrophes, hyphens, and periods, and removing newlines with whitespaces and all instances of multiple whitespaces with a single whitespace.

Sentence Extraction: this step creates a list of all sentences from the dataset.

Character Extraction: this step uses Named Entity Recognition (NER) to extract named entities from the dataset. Then, these named entities are used to create a list of all characters in the story, e.g., Odysseus, Telemachus, and Athena. We removed characters who were mentioned less than a drop threshold. This threshold is set to 10 sentences.

Feature Engineering: this step creates a feature vector for each extracted character. This feature vector includes 4 main features: the character name, a list of all sentences in the dataset that mention the character (sentences that do not mention them are *NULL* to preserve the sentence time-series sequence), sentence count, and the sentiment scores for each sentence. Then, we graphed the sentiment over time with a rolling average. We extracted the sentiment for each character for one-hundred sentences at a time, with an overlap of fifty sentences between points. We extracted that rolling sentiment average into a table in which each row corresponds to a character, and each column corresponds to the aggregate rolling sentiment score for a time window from the beginning to the end of the story.

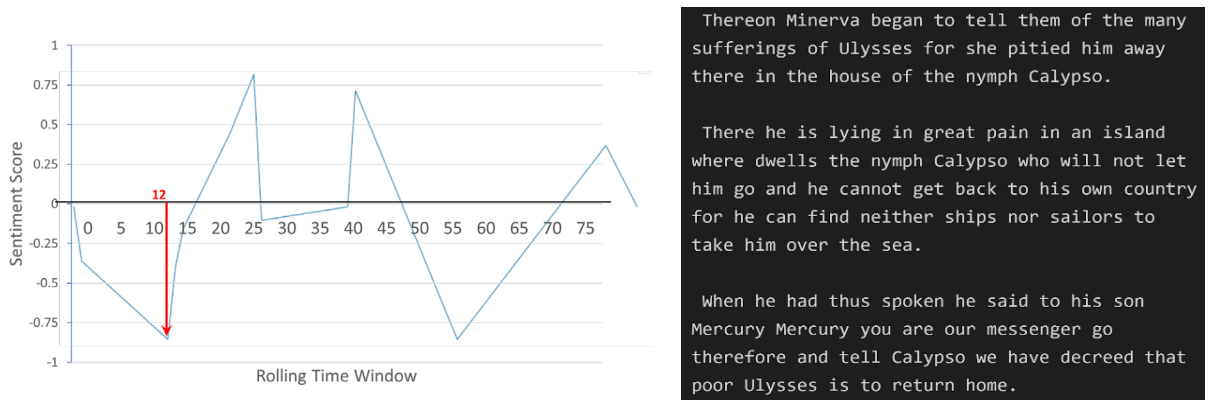


Figure 2. Feature Engineering; (a) Sentiment plot of the character Calypso from Homer's Odyssey, (b) Aggregate sentences from point 12 in Calypso's sentiment plot (local minimum)

Character Clustering: this step performs clustering on the dataset. Then, it creates a graph of the Sum of Squared Distances compared to the cluster number for the data. We use the elbow method to find the ideal number of clusters. Then, we use K-means clustering to perform group clustering based on the ideal cluster number.

Results and Implications

Using our proposed model, we plotted the sentiment for each character along with the sentences that mention them. An example of a sentiment plot for Calypso from Homer's Odyssey is shown in Figure 2.a. Examples of sentences that correspond to the 12th rolling time window (sentences 600-700) from the sentiment plot are shown in Figure 2.b. As can be noticed from the figure, the sentiment score of -0.89 which represents a negative sentiment and the words in the sentences corresponding to this point refer to negative sentiment. In general, the words in sentences tend to correlate with the sentiment plotted. These results hold for the characters used in our analysis.

Using the elbow method, the optimal value of k (the optimal number of clusters) is 4. We used this k value to cluster the characters' feature vectors using the K-means clustering algorithm. The results of the clustering algorithm are 4 clusters as follows:

- Cluster 0: Malfoy, Petunia, Vernon, Norbert, Percy, and Snape
- Cluster 1: (Ronan, Weasley, Firenze, Dumbledore, Potter, Hermione, Seamus, Ron, Charlie, Hagrid, Flitwick, Ollivander, Neville, Crabbe, Quirrell, and Harry
- Cluster 2: Voldemort, and Dursley
- Cluster 3: Fred, and George

The characters in these clusters can be categorized as: Cluster 0 – Bad, Cluster 1 – Beneficent, Cluster 3 – Villainous, and Cluster 4 – Chaotic. These clusters tend to reflect typical character classifications. The model identifies negative characters; however, it is not as good at splitting within benign character types.

We classified the clusters into several workable categories including protagonists and villains. Due to the nature of unsupervised learning creating unlabeled groupings, our labels are post hoc. We believe that the groupings are reflective of the kind of groups a human might create based on their

plot understanding. The model groups negative characters often with multiple tiers of malevolence; however, it is not as good at splitting within benign character types. With more model tuning, there is a potential to create this nuance.

Conclusion

This paper introduces a model for analyzing characters in textual stories and identifying the change of characters over time. The model uses Natural Language Processing (NLP) to mine the unstructured text of classical stories and analyze the characters' sentiments and unsupervised clustering to draw insights into the character types in stories. We asked two research questions at the start of this study: Can NLP understand how characters in stories change? Can NLP cluster characters from stories into meaningful categories? We believe that our study shows that NLP can track character sentiment over the course of the story; furthermore, our sentiment timelines match closely with the character's sentiment in the story, e.g., *The Odyssey* portrays Calypso negatively at the 12th point, a local minimum in her timeline. We believe that our study shows that it is possible to cluster characters from stories into meaningful groups using only latent sentiment data. In both *The Odyssey* and *Harry Potter* (but particularly in *Harry Potter*) the commonly understood villains are in their own clusters, while good characters are in a separate cluster. The results indicate that sentiment score and character categorization are correlated. It is possible to improve these clusters with more fine-tuning of the model. It may further be possible to generate labels automatically through a semantic analysis of the character's actions throughout the text.

There are several promising expansions to the proposed model. One expansion could be to assign a heavier weight to the analysis of characters near the end of the story because of plot twists. This consideration would be especially important in murder mysteries where it is not clear who is culpable of the crime until the climax. Another expansion is to follow the design of Dekker et al. and add a character social network to learn more about relationships between characters. These tools can be synthesized to express a comprehensive character profile that analyzes a character from multiple objective measurements.

There are two business applications for this tool. First, this tool can help authors and students analyze stories. Traditionally, these roles have relied on subjective literary analysis of their work. This tool provides a computational portrayal of characters that is not subject to the same biases as human interpretation. We can add a character social network to show characters interact and what characters are most related to one another. Second, this tool can help librarians and archivists understand stories that are poorly documented. Occupational work of this kind can be expedited with automated story information extraction. It may be possible to associate a list of actions with each character that can form the basis of a plot summary. Future expansions could increase the extent of data extracted for book cataloging. Writing assistant tools like Grammarly already offer grammar and syntactical feedback in writing. Natural language processing can delve deeper into a text to extract latent story information. This kind of service, then, would offer a more complex computational story analysis.

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MAN-OPOLIZED: GENDER INEQUALITY IN HEALTHCARE LEADERSHIP

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Introduction

Healthcare remains a highly gendered industry and many still consider nursing and other direct patient care roles 'women's' work. Interestingly, women are grossly underrepresented within healthcare senior leadership across the globe, despite making up over 70% of the workforce and being the recipients of nearly 60% of all health science, medical, and biomedical degrees (WHO, 2019). Within the USA alone, there are 9 million healthcare workers, with registered nurses accounting for over 2.4 million workers of whom, 85% are women (Day & Christnacht, 2019). Although gender parity has not been realized across various industries, the high proportion of women workers within the healthcare sector creates a unique disconnect for healthcare workers (Downs, 2014).

The Great Resignation is hitting healthcare hard, with a loss of over 500,000 workers per month in 2022, a drop in the number of new graduate nurses, a decrease in nursing school applications, and an anticipated global healthcare worker shortage of 15 million by 2030 (Auerbach et al, 2022; Boniol et al, 2022). Senior leaders of healthcare system are scrambling to develop nursing recruitment and retention strategies and bolster their already thinning and discontent workforce. Meanwhile, relations with clinical staff are deteriorating at unprecedented rates as evidenced by 18 healthcare worker strikes in 2022, a 350% increase from 2021 (BLS, 2022; Gooch, 2022). The US Chamber of Commerce completed a recent study that showed one million women have left the US workforce since COVID-19 and the tied #1 reason for leaving was lack of advancement opportunities (2022).

Even though a host of techniques have been touted to reduce staff turnover and multiple agencies have developed strategies to improve retention, the numbers show that workers, and nurses in particular, are leaving healthcare in droves. Is there, perhaps, an association between low nursing

retention and satisfaction rates and the unbalanced gender ratio in senior healthcare leadership? According to a recent study published in JAMA, only 15.3% of health systems have women CEOs (Odei et al, 2021). While no research was found that clearly identifies gender representation as a key indicator of turnover reduction, there is research identifying diversity and inclusivity as positive indicators of both organizational and employee performance. Additional research suggests that female leadership may increase worker productivity and satisfaction (Clerkin, 2017). Furthermore, across industries, the research is clear that more heterogeneous teams outperform homogenous groups (Busse, 2020; Nathan & Lee, 2015).

The present study attempts to identify gap indicators for women in senior healthcare leadership roles and in doing so makes an important contribution to the body of research. First, the study organizes barriers to senior leadership into four primary domains; occupational segregation, decent work, gender pay gap, and leadership consistent with existing research. Second, the study reviews the impact of the aforementioned domains on the pipeline from front line staff to senior management and its influence on retention and turnover. The purpose of this research is a literature review to identify those overarching themes that depress the number of women achieving senior leadership positions healthcare and to ascertain if any movement has been made to close this gender disparity within industry.

Methodology

A thorough review of the available literature was conducted by using the following peer reviewed databases accessed through the university Summon Search and restricted to articles with full text available online. Additionally, the search engine, Google Scholar was utilized. Search terms included gender gap, pay gap, gender bias, women in healthcare leadership, women in business, gender parity, healthcare, pink collar, and women healthcare leaders. Further research was undertaken utilizing Google to identify articles or data published by nationally and internationally respected government agencies. Articles were further reduced by confining the search to articles published from 2013-2023 and written in English text only. Limitations to this literature review include researcher bias as well as publication bias. Research was limited to buprenorphine based treatment and purposefully excluded methadone treatment.

Results & Implications

Barriers to Senior Leadership

Research on the barriers women and other minorities face to senior leadership is extensive. One recent meta-analysis of over 170 studies by the WHO identified several themes that decrease the likelihood of women in healthcare moving into senior leadership roles (2019). The first theme identified was occupational segregation both horizontally and vertically that stratifies and pushes women work that is clustered as both lower status and lower paid. Occupational segregation is noted to be exacerbated by working conditions such as long working hours and institutional policies such as lack of comprehensive parental leave or subsidized child care both of which disproportionately impact working mothers. One poignant example of this is that female physicians make up only about 35% of providers within America, ranking the USA 31st out of 35 countries, significantly behind most other developed nations (OECD, 2018).

The second theme is what the WHO terms, ‘decent work’ which encompasses work free from discrimination, bias and sexual harassment (2019). While women do experience higher rates of bias and discrimination at work strictly related to their gender, many women also experience ‘double jeopardy’ or additional biases based on some other factor such as race, religion, or sexual orientation, etc. (Williams, 2014). Workplace incivility, which at its worst is discrimination, is correlated with low morale, difficulties in recruitment, and higher rates of turnover in organizations (Yuniasanti, 2019). Furthermore, women also have experienced significantly higher rates of sexual harassment and physical violence than men within healthcare as evidenced by 30% of women in academic medical facilities reporting harassment versus the mere 4% of men (Jagsi et al, 2016).

The third theme that emerged was gender pay gap, which persists despite adjustments for other factors that were previously earmarked as primary drivers of reduced wages such as age, years of experience, education, etc. (Vecchio et al, 2013). The gender pay gap is estimated between 26-29% globally and lowers lifetime earnings for women and exacerbates work-life balance struggles such as maintaining adequate childcare (UN, 2017). Even providers are not exempt. In fact, physicians have a wider gender pay gap than the majority of other occupations, with female physicians earning only 74 cents on the dollar as compared to their male counterparts (Horstman, 2022). Moreover, the gender pay gap has been found to widen as women move up into senior leadership roles (Ash et al, 2004). The gender pay gap and the lowered rate of lifetime earnings is impacted by individual barriers that predominately impact women. For instance, mothers tend to work less hours as they try to juggle family responsibilities, sometimes reducing to part-time work or even opting out of the workforce entirely, delaying or even ending their careers (Vecchio et al, 2013).

The fourth and final theme uncovered by the WHO research is leadership. This theme illuminates that when women are in leadership roles, they have tended to expand access and prioritize policies and procedures that increase representation, such as expanding reproductive health care access and parental leave (McKinsey, 2015). Representation within senior leadership also has been found to positively correlate with improved workforce satisfaction and decreased turnover (McKinsey, 2015). Finally, the dearth of women in senior leadership has been in some ways self-perpetuating as the lack of representation creates additional barriers to women who do manage to break the glass ceiling, including having less support in those senior management roles (Langer et al, 2015).

Implications for Industry

Despite considerable research that demonstrates that women are just as if not more effective leaders than men, they remain underrepresented in healthcare senior leadership (Zenger & Folkman, 2020). Although there have been increases to women in the overall workforce, with rates of female physicians increasing from 36.8% in 2000 to over 50% by 2016, the glass ceiling to healthcare leadership roles remains firmly in place (Perez-Sanchez et al, 2021). One study found that the aggregate proportion of women in all management jobs (from manager to c-suite) within healthcare has increased over time with rates starting at 47% in 1980 and topping out at 70% in 2010 (Scarborough, 2018) However, the percentage of women in healthcare decreases across the pipeline from entry level to senior leadership with the most notable drop occurring from the management level to the senior management level, with a hefty 10% decrease in representation

(Berlin et al, 2020). The decline from management to senior management (i.e., directors) to vice presidents, to senior vice president and culminating in c-suite positions is particularly noteworthy given that women dominate service-line management roles at 59% but that percentage dwindles to a mere 15% by the time they reach the c-suite level (Odei et al, 2021). These findings are consistent with occupational segregation although they do not point to causality.

When considering bias against women in healthcare, oftentimes the discussion can become vague or difficult to quantify. Regardless, access to decent work for women in healthcare is limited by bias, harassment, and discrimination and whether implicit or overt. Unconscious bias, in fact, may be more difficult to measure since by definition, it is unknowingly changing our perceptions and interactions (Marcelin et al, 2019). In addition, violence against healthcare professions has reached staggering heights. The US Bureau of Labor Statistics top five occupations for workplace violence in 2019 were all healthcare jobs; nursing assistants, orderlies, psychiatric aides, home health or personal aides, and registered nurses (AFL-CIO, 2021). In 2019, there were 32 healthcare workers killed compared to 24 in 2018 (AFL-CIO, 2021). The very real fear of being physically assaulted, combined with the constant unconscious bias women face in the healthcare industry may serve to push more experienced staff out of industry, creating a lack of suitable female candidates for internal promotion.

Gender earning inequality presents a significant barrier to women in the workforce. Negative biases viewing caregiving as ‘women’s’ work continue to result in depressed wages for a myriad of direct and supporting roles in healthcare (Equitable Growth, 2017). These jobs, dubbed, “pink collar” by economists, are consistently devalued by society as a whole (Elkins, 2015). Despite this undervaluation of pink collar jobs as a whole, research has found that men within those professions are compensated at higher rates than their female colleagues, even when other factors such as age and tenure are accounted for. In one such study, it was found that male registered nurses make more than their female colleagues across regardless of specialty or setting (Muench, et al, 2015). The widening gender pay gap for women moving into senior leadership roles is disproportional to the increased hours and work burden expected from those roles. This creates a substantive barrier and may contribute to the higher rates of job leaving seen among women in senior leadership (McKinsey, 2015).

When women are in senior leadership positions, they tended to lead from a more participatory style that increase motivation, improves work-life balance, and improves outcome quality (de Castro et al, 2018). Women leaders are nearly 20% more likely to publicly support policies that promote equality than their male counterparts (McKinsey, 2020). Furthermore, there is research that shows female workers have a direct relationship between managerial trust and performance and this finding is particularly relevant given the high proportion of female workers within healthcare (Tolmie et al, 2020). However, it is important to note that many female leaders may lack the support within the c-suite to make effective organizational change and as a result, they are more than 1.5 times more likely to leave their roles than men (McKinsey, 2015). This female exodus from senior leadership is also attributed to the bias and discrimination they may face, as well as lack of structural supports leading to being overworked. These barriers are compounded by additional minority status such as racial minorities, LGBTQ women, and women with

disabilities (McKinsey, 2015). The addition of more women or other minorities within senior leadership may offset the obstacles women in the c-suite face, but as of 2021, only 15.6% of American Hospital Association hospitals had more than one woman in senior management (Christopher et al 2021).

Conclusion

In conclusion, healthcare systems have considerable gender disparity in regards to women in senior leadership. This phenomenon is likely due to both structural and individual barriers that woman workers face in regards to balancing work and family life, navigating bias, discrimination, and harassment, physical assault, depressed wages, and lack of clear and supported pathways to leadership.

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GDP, ECONOMIC FREEDOM, AND SUPPLY CHAIN RESILIENCE: INCREASING WEALTH ONE LINK AT A TIME

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Introduction

The COVID pandemic and accompanying supply chain disruptions have resulted in scholars refocusing their attention over the past two years on the importance of supply chain resilience in a variety of areas. Resilience refers to the ability of a supply chain to recover or “bounce back” from negative impacts (Golan et al., 2020). Some of this research examines the impact of the disruptions on GDP (Bonadio et al., 2021; Rosen et al., 2022) while other studies offer suggestions of how to better protect from future supply chain disruptions (Miroudot, 2020; Nikookar & Yanadori, 2021; Sharma, et al., 2021). While there is much discussion of how to improve supply chain resilience and, thereby, reduce the impact on real GDP disruptions, there has been much less discussion on which aspects of the supply chain are most closely associated with improvements in real GDP.

At the beginning of 2022, the New York Federal Reserve launched its Global Supply Chain Pressure Index, which provides further support for concerns about increased disruptions starting in 2020. Figure 1 shows the extent to which pressure has become both greater and more volatile in recent years.



Figure 1. Global Supply Chain Pressure Index (Federal Reserve Bank of New York)

A recent OECD policy paper (OECD, 2022) points to the “need for policy options that strengthen the resilience of supply chains” and suggests a series of tools that governments should consider for this purpose. These are divided into four groups: risk management, domestic policy, public-private partnerships, and open markets/trade. Our goal, therefore, is to analyze various components of supply chain resilience to identify the key factors that contribute to output. Governments should focus on those key factors.

Literature Overview

For the first time since the late 1980s, supply has become a relevant factor in explaining wealth creation. Globalization brought about a world in which supply always met demand, for whatever it may be: raw materials, agricultural and manufactured goods, and even services. Since then the focus of macroeconomic analysis shifted to understanding demand, with supply taken for granted. The pandemic changed this analytical approach and brought back to the forefront the analysis of supply and demand (Carstens, 2022). Evidence of the supply disruption caused by the pandemic abounds, including an analysis by Bonadio et al. (2021) which looked at the role of global supply chains in the impact of the COVID-19 pandemic on GDP growth and found that 25% of real GDP decline was related to global supply chain disruptions.

Miroudot (2020) discussed the policies that can build supply resilience and concluded that promoting firm agility and flexibility builds resilience and economic recovery both at the firm and at global levels. Nikoogar and Yanadori (2021) examined manufacturing firms in Australia during the pandemic and found that the human and social capital of managers are instrumental to the development of supply chain resilience – specifically to visibility, responsiveness, and flexibility.

Furthermore, there is some evidence that a link exists between economic freedom disaster recovery and resilience. Bjørnskov (2016) found that countries with higher economic freedom recovered better from economic crises as measured by lower peak-to-trough GDP ratios. Candela and Geloso (2021) argued that economically free nations should recover more quickly than less free nations since in the latter, economic actors have less flexibility to allocate resources and adapt to uncertain and dynamic market conditions.

OECD (2022) suggests strengthening supply resilience by: (i) anticipating risk, (ii) minimizing exposure to shocks, (iii) building trust between the public and private sectors, and (iv) keeping

international markets open. Each action is comprised of four related sub-policies with a variety of strategic, legal, regulatory, and financial recommendations.

Methodology

We hypothesized that a nation’s economic well-being is supported by having a resilient supply chain, as well as by fostering a generally free economic environment.

Data on supply chain resilience indicators were taken from the 2022 FM Global Resilience Index report (FM Global, 2022), which is comprised of 15 individual subcomponent scores. Economic freedom factors were taken from the Heritage Foundation’s 2022 Index of Economic Freedom (Heritage Foundation, 2022), which is comprised of 12 subcomponents. Table 1 lists the constituent components of each index.

Index	Index Subcomponents
FM Global Supply Chain Resilience Index	Productivity, political risk, energy intensity, urbanization rate, health expenditure, seismic risk exposure, climate risk exposure, cyber risk quality, fire risk quality, climate risk quality, infrastructure quality, control of corruption, corporate governance, supply chain visibility, supply chain timeliness
Heritage Foundation Economic Freedom Index	Property rights, judicial effectiveness, government integrity, tax burden, government spending, fiscal health, business freedom, labor freedom, monetary freedom, trade freedom, investment freedom, financial freedom

Table 1. Subcomponents of Supply Chain and Economic Freedom Indices

We used real GDP per capita as our measure of economic well-being, which was part of the Heritage Foundation dataset. In Figure 2, we plotted real GDP per capita against the overall supply chain resilience index and against the overall economic freedom index. Figure 2 shows that there is a positive relationship between national real GDP per capita and the two indices.

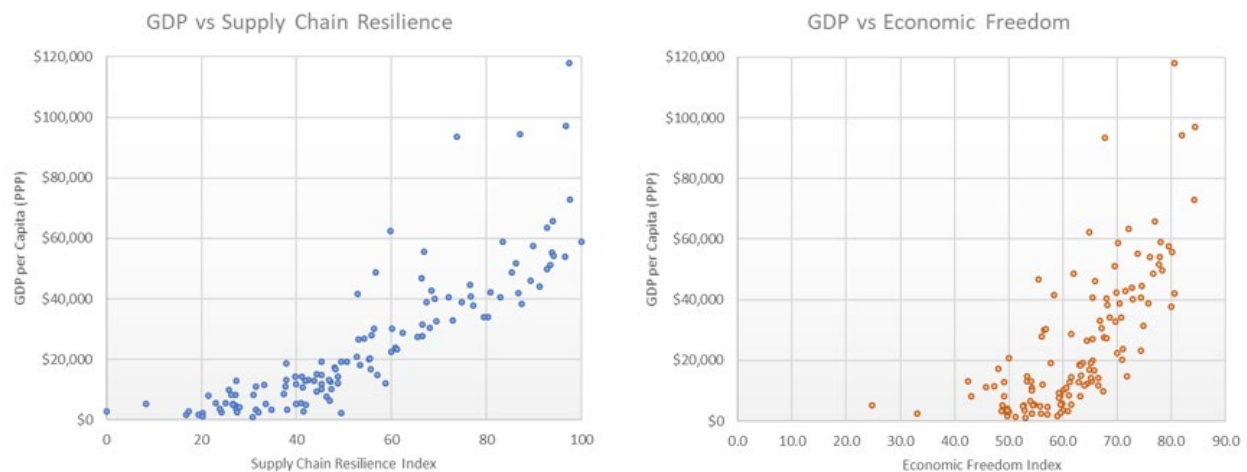


Figure 2. Real GDP per Capita Versus Supply Chain Resilience and Economic Freedom

To test our hypotheses that economic well-being is a function of supply chain resilience factors and economic freedom factors, we performed exploratory analysis to identify potentially significant factors. Both indices were shown to be weakly positively correlated with real GDP per capita but this did not indicate which aspects of the indices were the most significant. We first tested the components of each of the two indices. Based on the significant outcomes from those regressions, we then proposed the following model:

$$RGDP_per_capita_PPP_i = \beta_0 + \beta_1 Trade_ \%_RGDP_i + \beta_2 SC_infrastructure_i + \beta_3 SC_control_of_corruption_i + \beta_4 SC_visibility_i + \beta_5 Tax_Burden_i + \varepsilon_i \quad (1)$$

Comparing across the three datasets, nations with missing values were removed from the dataset, resulting in 122 nations that contained complete data. Infrastructure quality (*SC_infrastructure*), control of corruption (*SC_control_of_corruption*), and supply chain visibility (*SC_visibility*) were taken from the 2022 FM Global Resilience Index report (FM Global, 2022). Real GDP per capita (*RGDP_per_capita_PPP*) and tax burden (*Tax_Burden*) were taken from the Heritage Foundation's 2022 Index of Economic Freedom (Heritage Foundation, 2022). Trade as a percentage of GDP (*Trade_%_GDP*) was taken from the World Bank (World Bank, 2022). The trade data were 2021 values, unless 2021 values were not available, in which case the most recent year was selected. See FM Global (2022) and Heritage Foundation (2022) for more details on the data sources used in comprising the various indicators.

Multiple linear regression was performed on the dataset to test whether trade as a percentage of GDP, infrastructure quality, control of corruption, supply chain visibility, and tax burden predicted the national real GDP per capita.

Results and Implications

This section describes the research methods and implications of our study. The fitted regression model was:

$$RGDP_per_Capita_PPP = -37,517.87 + 110.14(Trade_ \%_GDP) + 368.71(SC_infrastructure) + 239.79(SC_control_of_corruption) + 194.34(SC_visibility) + 183.22(Tax_Burden).$$

Trade as a percentage of GDP, infrastructure quality, control of corruption, and supply chain visibility were significant ($p < .001$) whereas tax burden was slightly less significant ($p < 0.05$) (Table 2).

Therefore, supply chain resilience was found to be a significant contributor to real GDP. Using the FM Global supply chain resilience index, we find that the most important components of supply chain resilience are infrastructure, control of corruption, and the ability to track items in the supply chain. Significant factors outside the supply chain include trade as a percentage of GDP and (somewhat less significantly) low levels of tax burden.

The infrastructure quality variable is constructed from an index based on a survey conducted by the World Economic Forum. The survey asks respondents to rank their county's strength in the areas of transportation (roads, rail, ports, and air), communication (cell phones and land lines), and electrical energy. We expected this data to have a positive coefficient given that reliable infrastructure should reduce the probability and impact of disruptions. This is one of the OECD

recommended tools. The OECD report recommends increased investment in infrastructure, which this finding supports. This is consistent with literature proposing that national competitiveness is based, in part, on the quality of national infrastructure (e.g., Aubert, 2005).

<i>Regression Statistics</i>						
Multiple R	0.893449366					
R Square	0.79825177					
Adjusted R Square	0.789555726					
Standard Error	10489.45464					
Observations	122					
ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	5	50500300855	10100060171	91.79481319	1.17584E-38	
Residual	116	12763324409	110028658.7			
Total	121	63263625264				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	-37517.87502	7654.557623	-4.901377306	3.12034E-06	-52678.69089	-22357.05915
Trade as % GDP	110.1374703	18.39568321	5.987136715	2.44489E-08	73.70250184	146.5724388
SC Infrastructure	368.7105178	65.77617356	5.605533095	1.42467E-07	238.4325181	498.9885175
SC Corruption	239.7894036	73.94079254	3.242992066	0.001544929	93.34034722	386.2384599
SC Visibility	194.3457611	71.79775965	2.706849936	0.007818705	52.14125145	336.5502708
Tax Burden	183.2215995	87.57521582	2.092162694	0.03860514	9.767849872	356.6753491

Table 2. Regression Results

The control of corruption variable is based on an index using the Worldwide Governance Indicators data set of the World Bank constructed through a series of surveys. The coefficient for corruption also is positive as expected (higher scores indicate less corruption). We assumed that the inefficiencies associated with higher levels of government corruption would be amplified under stress. Moreover, it seems likely that this would be particularly true if the type of stress were generated by a new and unknown source such as a pandemic. Although corruption is not one of the OECD tools specifically, it has a clear relevance for several of the tools that are mentioned including procurement, regulatory flexibility, public-private action plans, and strategic governance.

The supply chain visibility variable also comes from the World Bank, specifically from the Logistics Performance Index, based on a worldwide survey of operators providing feedback supplemented with quantitative data. The coefficient indicates that greater visibility (knowing where shipments are in the supply chain) is positively correlated with GDP. The slight surprise in this area was that the supply chain timeliness component was not significant although visibility was. Upon further reflection, it seems reasonable that this is the case because business relies on predictability. That is, delays are easier to manage if there is visibility into the status of the shipment. Visibility helps in managing risk and planning for inventories, contracts, production, transport, and sales (McKinney et al., 2015).

Trade as a percentage of GDP is reported in the World Bank Development Indicators data set. The connection between trade and GDP is commonly recognized but, in this case, it also interacts with

the supply chain in that supply chain resilience has added importance for economies with a greater reliance on trade. When trade is included in the model, it allows us to conclude that resilience is independently significant.

The tax burden variable comes from the Tax Burden index (higher scores indicate lower tax burden) from the Heritage Foundation’s Economic Freedom Index. Again, this coefficient was expected to be positive and was, although at a lower level of significance. Lower taxes (ceteris paribus) increase output by promoting incentive frameworks that favor entrepreneurship, risk taking, and competition which result in private sector investment. Therefore, this may also be looked at as a proxy for private investment. A related interesting point is that this lower tax burden remains significant even with the infrastructure variable, so that may be a policy challenge. Governments would need to weigh increasing the tax burden (negative impact) with improving infrastructure (positive impact).

Somewhat surprisingly, we did not find any difference when adding a dummy variable for income group. Based on initial data in Figure 3, there is an apparent correlation between supply chain resilience, economic freedom, and income. High income countries (as defined by the World Bank) have higher scores on both the Supply Chain Resilience Index and Economic Freedom index while low income countries tend to earn lower scores. However, when we tested the hypothesis that supply chains contributed more in wealthier countries, it was not supported.

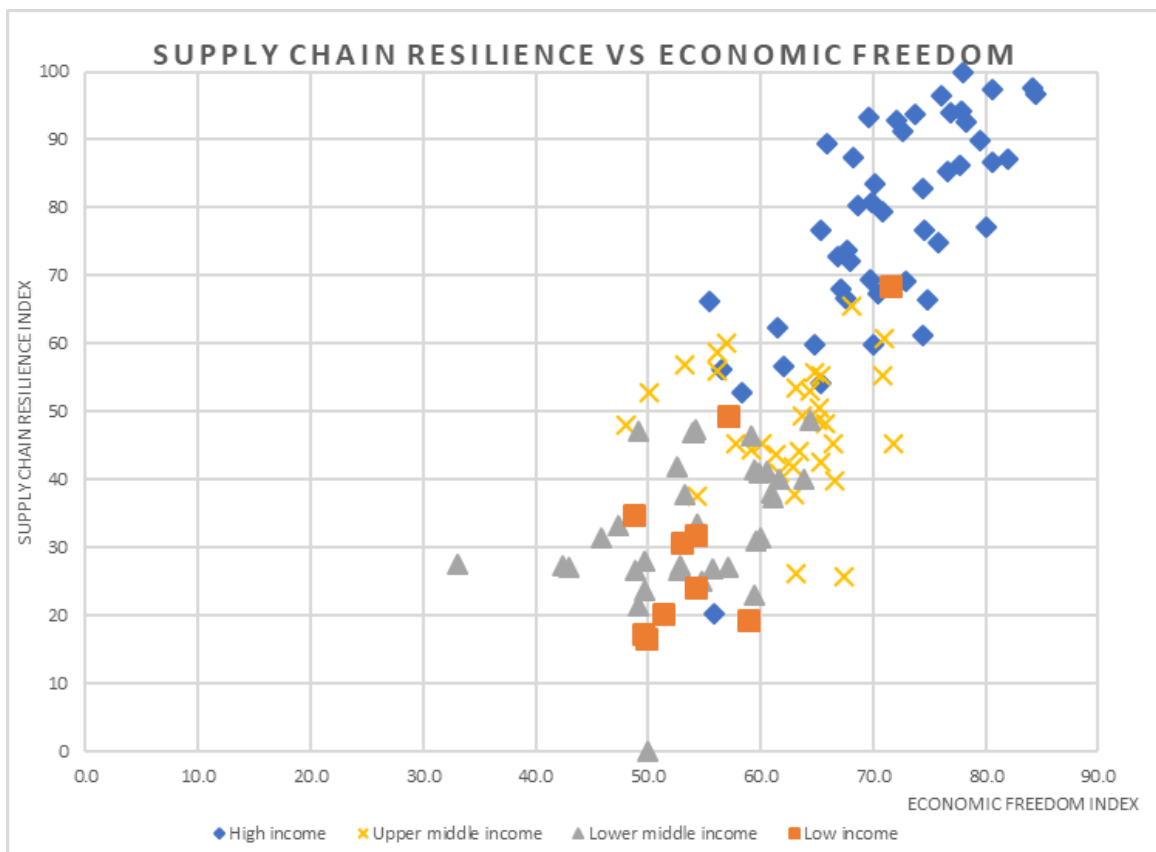


Figure 3. Supply Chain Resilience and Economic Freedom by National Income Level

Conclusion

We found that trade, several supply chain factors, and economic/business freedom were all correlated with higher real GDP per capita. We were also able to determine that some supply chain aspects (timeliness, for example) appear less important and, accordingly, might need less immediate government attention. A second set of tests showed that these results are robust across income groups so that the policies should be equally applicable to all countries.

Based on our results, we believe that the areas within the OECD recommendations that would contribute the most to protecting real per capita GDP in the face of supply chain disruptions would be support for infrastructure, control of corruption, and supply chain visibility. Beyond the resilience of the supply chain, a focus on a more open market with a lower tax burden and more trade, would also be beneficial.

Future work includes looking at other factors such as the World Bank's Ease of Doing Business Index. This would allow us to more accurately assess the importance of business freedom in addition to the more general economic freedom factors.

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PROJECT MANAGEMENT SELECTION – STARTING BEHIND THE “8-BALL”

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Introduction

Many organizations utilize project management as a technique to achieve short-, medium- and long-term goals thereby increasing the organization’s ability to achieve its strategic plan and ultimately its mission and vision. Anantatmula (2008), citing other studies, estimated annual spending on projects to be in the billions of dollars in the global economy. Even in the short-term, a failed project can have devastating effects on quarterly financial results thus resulting in company stock devaluation and/or a depreciation of credit worthiness.

The Project Management Institute (PMI), a 53-year-old international, interdisciplinary organization of project management professionals, has indicated that many projects, undertaken in various industries and sectors, fail to achieve the stakeholders’ desired results which typically center around cost overruns, schedule lapses, final product quality or project member turnover and/or decreased post-project morale. Projects fail these expectations for a variety of reasons. Those reasons include excessive project scope, lack of sufficient funding, resource constraints, senior management inattention to name a few (Project Management Institute, 2021).

Prior research has also focused on possible causes of project failure which can be attributed to project manager selection (Anantatmula, 2010; Hadad, Keren & Laslo, 2013). Delving deeper, the linkage between project manager personality dimensions and positive project outcomes has also been studied (Creasy, 2015; Creasy & Anantatmula, 2013). With the aim of adding to this personality-based literature, this paper’s aim is to illustrate the types of personality dimensions and management styles present in a diverse set of 42 project managers and suggest project execution struggles brought on by these same factors. The aspects of self-monitoring, change initiation orientation and conflict management style will come into sharper focus.

Literature Overview

Lechler (1998) found that soft skills or competencies were more closely associated with project management success than technical skills. Likewise, Posner (1987) suggested that interpersonal (“soft”) skills were more important to project success than technological (“hard”) skills. Continuing this theme, Turner and Muller (2003) reported that traditional project manager skills are closely aligned with entry level skills and do not as guarantee successful project outcomes as do soft or interpersonal skills. Gehring (2007, p.50) posited that “...to increase the probability of project management success, the project manager must understand the leadership competencies that are required and what personality traits he or she has that compliments or competes with these competencies”. Dvir, Sadeh and Malach-Pines (2006) stressed the importance of calibrating the personality and management style of the project manager with the project type.

Self-Monitoring – Personality Trait

Self-monitoring can be measured as “high” and “low” and is a personality trait and very similar to self-awareness and relationship management (like emotional intelligence) in which the individual “controls their expressive behaviors and self-presentations to cultivate desired public appearances” (Scott, Barnes, & Wagner, 2012). Pagano and Debono (2011) state that high self-monitors “tend to be concerned with the image they project and they are generally willing and able to adjust their self-presentations to fit differing social and interpersonal considerations of appropriateness” (p2930). High self-monitors were characterized as “..’social chameleons’, tailoring their self-presentations to meet the needs of a given situation” (Scott, et all, 2012).

High self-monitoring (also referred to as surface acting requiring significant emotional labor) practices can have a profound, negative effect on the project manager. Emotional labor (surface and deep acting) consumes personal resources and is associated with lower levels of stamina, motivation and task focus (Beal, Weiss, Barros & MacDermid, 2005). Bono & Vey (2005) reported that both forms of acting, but especially surface acting, are very taxing on the individual producing emotional exhaustion leading to job dissatisfaction. “When an employee engages in surface acting, she or he is more likely to experience negative outcomes such as negative effect, burnout, emotional exhaustion, job dissatisfaction and withdrawal” (Scott et al, 2012). Surface acting through high self-monitoring appears to be a personality trait that can lead to negative project outcomes. Measuring to control for low self-monitors seems prudent during project manager selection.

Change Initiation Orientation – Management Style

Change is considered by many to be a premeditated intervention whose purpose is to modify the functioning of an organization (Lippitt, 1958). Battilana and Casciaro (2012) contribute to the organizational change literature by illustrating that the degree to which organizational change deviates from the organization’s status quo may have significant implications for the factors that encourage adoption.

Ramnarayan and Nilakant (2006) propose that it is important for managers to develop a detailed plan (a project plan) for instigating change due to its uncertainty and complexity. They observed that managers play an important role in executing change and recommend integration and

coordination to work more effectively among colleagues. It would be impractical to expect good project management planning to abolish the occurrence of all potential unexpected events. However, should the project be implemented with cautious planning, many of the changes will be expected, and the team will institute proactive solutions as they begin to emerge.

Organizational members who are affected by the change and those who have no hand in initiating it may, primarily out of fear, resist or clash with any modification or transformation. However, change is often necessary to accomplish progress or growth. Citing past research efforts (Kanter, 1983; Van de Ven, 1986), Battilana and Casciaro (2012) observe that a manager (acting as a change agent) skilled and accepting of change as a necessary ingredient to success may be required to overcome this resistance and encourage others to do the same. Further, they propose that change implementation is a social-influence exercise. “The project manager, frequently required to lead a team that is newly formed, often plays the role of a change agent, as a project is a new time-bound effort with several related and/or interdependent tasks to create a unique product or service that either adds value or reduces loss” (Creasy & Anantatmula, 2013, p28). Selecting a project manager who initiates change where and when necessary, seems to be a judicious decision.

Conflict Management – Management Style

Conflict is the result of a variance of people’s perception, opinion, or beliefs. Usually, conflict ensues when there are incompatible goals, thoughts, or emotions which spark disagreements among individuals. Over the years, three different views have developed about conflict in projects and organizations (Robbins, 1974, 1979; Robbins & Stuart-knotze, 1986) People, and in some cases managers, rather than procedures, play an important role in the creation of dysfunctional conflict (Gardiner & Simmons, 1998).

Projects frequently contain a multitude of team member tasks which require completion by an agreed upon schedule. Conflicts associated with tasks can be helpful and project managers should find an amount of conflict that fosters creativity and innovation (Ohlendorf, 2001). Issue-focused conflict is much more beneficial because it takes on a more rational approach to conflict. Issue-focused conflict can be more easily settled through negotiations, where both parties agree to find a mutually satisfying resolution (Cameron & Whetten, 2007).

Thamhain (2004) believed that conflict is unsettling and damaging, and one of the project manager’s primary goals is to focus on conflict avoidance. However, Verma (1996) contends that conflict forces a company and its employees to pursue answers to problems they are facing. This quest often leads to improvements and creates energy when handled constructively. Managers must create an atmosphere that boosts the use of a cooperative style for organizational conflict management (Ohlendorf, 2001). According to Lencioni (2002), teams require conflict to develop and mature. Conflict is vital, beneficial, and should be prompted through various methods such as mining, a process of bringing out sensitive issues to the group for discussion, and real time permission, which is the process of facing healthy debate. Lencioni suggested that project managers should avoid interfering when their team members engage in conflict and allow conflict resolution to come naturally. Based on these findings, it seems that a project manager who encourages healthy debate and conflict within their team meetings will experience more success than those that do not.

Methodology

The sample size consisted of 42 project managers sent by various employers to professional development or corporate training events which focused on project management, change management, Lean practices, or Six Sigma. The industries/sectors represented were non-profit, healthcare, government, and mining/road construction. Participants were given self-assessments and were guided through the instructions for proper completion. Participants scored their own assessments which were then checked for accuracy by the moderator. Sufficient time was given for each assessment tool periodically administered throughout the training event. All assessments were voluntary. To measure low, moderate, and high self-monitoring, the survey as initially developed by Snyder (1987) was utilized. Hord (1987) instrument was utilized to determine low and high change management orientation. For conflict management measurement, the assessment (Thomas & Kilmann, 1978) scored individuals into “competing”, “accommodating”, “collaborating” or a combination of any two categories.

Results and Implications

The results of the assessments of the 42 project managers are indicated below.

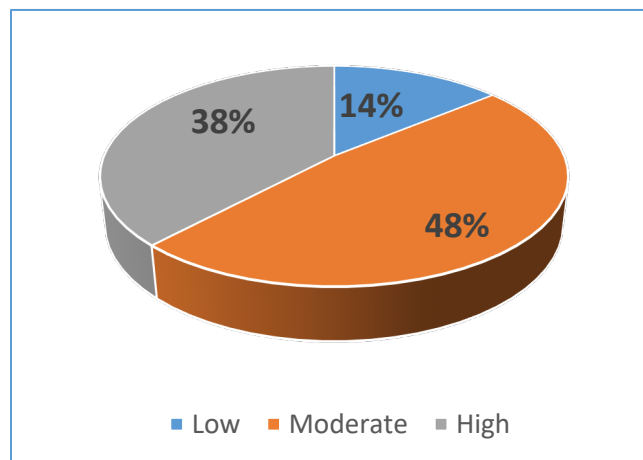


Figure 1. Percent of Project Managers and Change Initiation Orientation

Low levels of change initiation could lead to a decrease in growth and/or development through missed opportunities. This could also lead to suboptimization in various stages of project management. Although 38% were rated as “high” (willing to engage in change if necessary), the remainder of respondents could be problematic.

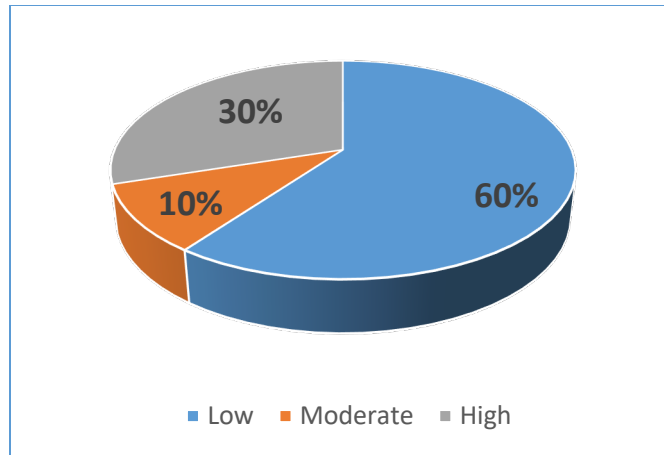


Figure 2. Percent of Project Managers and Self-Monitoring Level

Project managers with high and moderate self-monitoring tendencies (about 40%) could experience undo fatigue with surface acting thus producing the opportunity for emotional distress leading to project failure and/or manager turnover.

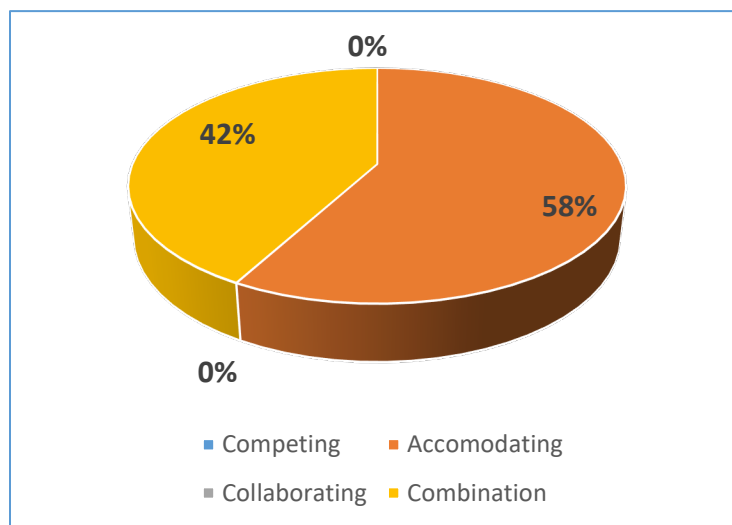


Figure 3. Percent of Project Managers and Conflict Management Style

Most of the project managers in the study expressed an “accommodating” style when faced with conflict management. The “combination” indicated was a diverse style which included “accommodating and collaborating”. The latter could indicate a maturation toward the best approach (“collaborating”) when discussing conflict management. Accommodating managers may desire to “get along” with people and thus suboptimize the project deliverables or fail to meet the project’s goals.

Conclusion

Gehring (2007) wrote, “...for most organizations, the most natural thing to do is to draft a technician or administrator with a good reputation within the organization to lead the project.

Because of this natural technical progression, most people become project managers by accident.” (p50). This paper suggests that accidental project management can be avoided. If we can avoid “accidents” perhaps we can also avoid many projects which “fell short of planned expectations”. This can be done, I contend, by considering a project manager’s personality traits and dimensions.

This study has a few limitations. Even though the companies represented are varied, the number of project managers queried could be grown from 42. Secondly, some will question the validity of self-assessments for proper measurement due to biases of one form or another. While this may be true – it could also be true for other survey-based investigations. The authors of these instruments took precautions to avoid bias where they could. Lastly, the sample was a collection of project managers and “convenience sampling” could be claimed. However, the study focuses on project managers and the training was open to any project managers in the area that wanted to attend.

Future research should “tie the knot”. Projects’ success measured by the traditional metrics offered in the introduction could be tied back to each project manager to properly gauge which personality dimensions and management styles were indeed problematic for these practitioners in their project management. A conceptual model is included in Figure 4.

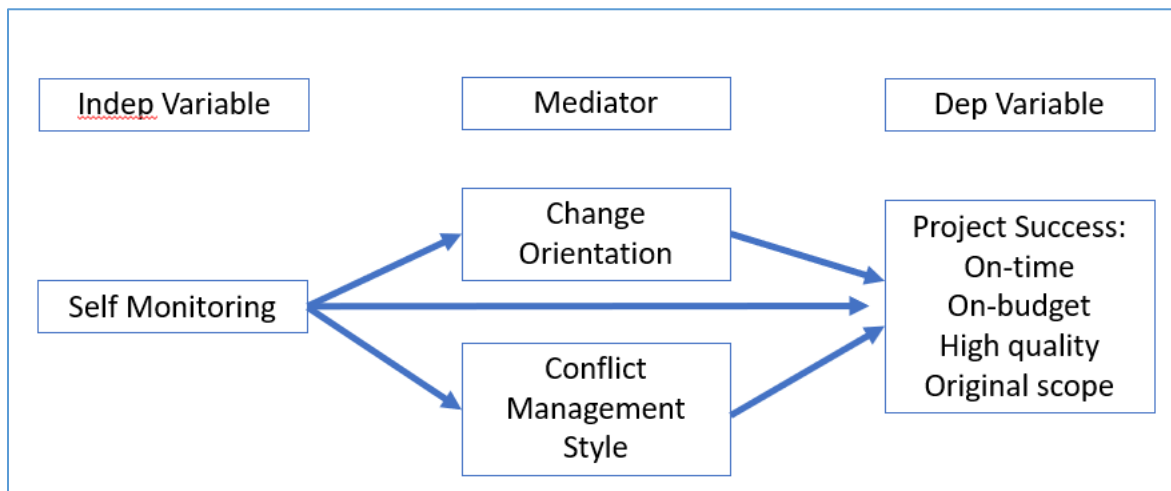


Figure 4. Conceptual Model

Falling behind the “8-ball” in a game of billiards can be very difficult to overcome and, in some cases, results in a loss for the game. Likewise, selecting a project manager whose personality dimensions and/or management styles which are not suitable for the pertinent work can be very difficult to overcome and may result in the contrary outcomes illustrated in the conceptual model. As such leaders, who are tasked with project manager selection, will be keenly interested in the rubric-addition of personality dimensions to their project manager selection process.

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SHORT-TERM FINANCING USAGE: A COMPARISON OF THE CAROLINAS TO THE U.S.

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Abstract

This study examines the following short-term financing services: Auto title loans, payday loans, tax refund advances, pawn shops, and rent-to-own stores. Specifically, this study compares the usage frequency of these services between North Carolina and South Carolina (NCSC) residents and those in other states. The key findings reveal that NCSC residents, compared to residents of other states, tend to more frequently utilize pawn shops and rent-to-own stores, and less frequently utilize payday loans. No statistically significant differences were observed between NCSC residents and residents of other states for the usages of auto title loans and tax refund advances. Implications for regional financial literacy education and policy are discussed.

Introduction

Some consumer oriented short-term financing solutions tend to be more detrimental to financial wellbeing than others. For instance, subprime short-term financing such as auto title loans, payday loans, tax refund advances, pawn shops, and rent-to-own stores are associated with higher interest rates and longer repayment periods, both of which increase the financial burden on consumers of these services. Several factors affect the utilization of the aforementioned services. More

conventional short-term financing can categorically lock some consumers out of the market due to their credit history. These consumers are often referred to as “unbanked” or “underbanked” and tend to be younger, non-White, less financially sophisticated, and have lower incomes (McKernan et al., 2013). This is compounded by the cumulative inequalities of generational poverty, demographics, and socioeconomic status. Those who use these short-term financing services may not have many alternative options (Elliehausen and Lawrence, 2001, Stegman, 2007). In this sense, the utilization of non-conventional short-term financing options has the power to create a cycle that becomes challenging to overcome.

Both North Carolina and South Carolina have made strides to restrict predatory lending practices. In North Carolina, “Small Loans” are limited to \$500 and restrict annual percentage rates exceeding 36%. South Carolina has a similar restriction on dollar amounts of Payday loans, \$550, but annual percentage rates can be much higher and, in some cases, can annualize to 400%. North Carolina has also banned the practice of title loans. However, in what effectively becomes a game of regulatory whack-a-mole, restricting or outlawing one short-term financing market positions consumers to search other short-term financing markets for solutions, some of which may have characteristics with worse consequences for financial well-being.

Financial literacy could also be a driving factor in the adoption of these practices. Financial illiteracy is a growing issue in the United States. A 2014 Standards and Poor’s report found that about 57% of adults in the U.S. are considered financially literate. Although, many state and federal financial literacy programs have found traction since 2014. Since 2021, high school students in North Carolina have been required to take a personal finance class before they can graduate. South Carolina enacted a similar legislation in 2022 that is anticipated to take effect in 2023. However useful these programs may prove in the long-term, financial illiteracy continues to be an issue in the short-term.

The aim of this paper is to provide a comparison of North Carolina and South Carolina (NCSC) to the remainder of the United States. Specifically, the aim to explore if NCSC residents utilize predatory lending practices more or less frequency than other states. Implications for regional financial literacy education and policy are discussed.

Literature Review

Several short-term lending practices have been under strict scrutiny due to their potential ability to trap borrowers into a cycle of debt. These services are commonly referred to as Alternative Financial Service (AFSs). Several studies find that access to these AFSs could be detrimental to financial wellbeing if individuals have lower levels of financial literacy or have lower intertemporal time preference for income consumption (Johnson, Kotlikoff, and Samuelson, 2001; O’Donoghue and Rabin, 2007; Stango and Zinman, 2011, Lusardi and Tufano, 2008). To examine the tendency of NCSC residents to use AFSs, compared to non-NCSC residents, we use five common types of alternative short-term financing options in our analysis: auto title loans, payday loans, tax refund advances, pawn shops, and rent-to-own stores.

Both payday loans and auto title loans are sub-prime loans, although they have unique characteristics that justify their utilization. Payday loans allow consumers to borrow against their

future income, while a title loan allows consumers to utilize their existing wealth to leverage current cashflows (Zywicki, 2010). Payday loan amounts average between \$400 and \$500, while title loan amounts average closer to \$1,000 (Anderson & Jackson, 2021). In North Carolina Payday loans are prohibited, however “Small Loans” are permitted up to \$500 at a maximum rate of 36%. South Carolina permits payday loans, limits them to no more than \$550, and limits the APR to 391%. Given that the average payday loan is between \$400 - \$500, the dollar amount restriction is not seen as a major analysis limitation. The comparably lower interest rate on smaller loans in North Carolina, and the language banning payday loans, may discourage providers. Previous research finds that prohibiting payday loans is associated with a 32% decline in the use of payday borrowing (McKernan et al., 2013).

For larger loans, such as title loans, the ability to borrow more than the limits of a small cap or payday loan could have its advantages during an emergency. Research shows access to sub-prime loans mitigates foreclosures in low-income areas (Morse, 2011). Although North Carolina prohibits title loans, South Carolina permits such loans. In South Carolina, title loans can charge high interest rate on loans over \$600, but the loan amount cannot be greater than the fair market value of the car. The typical range of the loan amount is between \$600 and \$2,500 (South Carolina Applesseed Legal Justice Center, 2004). Although title loans are monthly loans, they can be rolled over, resulting in APRs over 300%.

Less studied are AFS, such as tax refunds advances, rent-to-own financing, and the use of pawnshops for short term-financing. The characteristics of this group tend to be different than the characteristics of those who utilize payday or title loans. Roughly one-third of lower-income families without savings accounts report they would utilize a payday loan or pawnshop to pay for a large, unexpected bill (McKernan and Ratcliffe, 2008). Monthly pawnshop loans are typically much smaller, normally under \$100 (National Pawnbrokers Association, 2008). This is supported by findings that suggest pawnshop and rent-to-own customers tend to have the lowest incomes among those who use AFSs, and, likewise, these consumers are about 10% less likely to have a bank account than those who use payday or title loans (McKernan et al., 2013).

Rent-to-own (RTO) is another form of short-term financing. Rent-to-own agreements can have very high effective annual percentage rates. Traditional RTO options provide immediate access to household goods without thorough credit checks or down payments. Previous research indicates that RTOs may be a misnomer, as about 72% of agreements ended in the return of the property and the APR averaged about 29% (Anderson & Jaggia, 2009).

Tax-refund advances are another means of short-term financing. These can take the form of Refund Anticipation Loans (RAL). Rather than consumers having to wait several weeks for their refund, a lending institution can loan consumers funds using the tax refund as collateral. Some RALs can carry interest rates above three digits when annualized. In 2013, 9% of North Carolinians and 10% of South Carolinians took advantage of some form of RAL (McKernan et al., 2013).

Methodology

Data

Data from the National Financial Capability Study (NFCS) are utilized. The NFCS is a project of the Financial Industry Regulatory Authority (FINRA) Investor Education Foundation. Additional information about the NFCS and the data collection process can be located on the FINRA Foundation's website: www.usfinancialcapability.org/downloads.php.

Variables

The dependent variables of interest include the frequency of using short-term financing services. Survey participants are asked, "In the past 5 years, how many times have you used the following services": Auto title loans, payday loans, tax refund advances, pawn shops, and rent-to-own stores. For each service, survey participants can respond 1 (Never), 2 (1 Time), 3 (2 Times), 4 (3 Times), or 5 (4 or More Times). The complete set of questions can be found in the appendix.

The key explanatory variable is a binary variable, where a "1" is coded if the survey participant reports their residence in North Carolina or South Carolina (NCSC). The NCSC variable is coded as a "0" otherwise. Of the full sample (N = 25,836), 956 reported living in either NC or SC. Other variables examined include whether the survey participant is male, age, whether the survey participant is white, whether the respondent is married, income, whether the respondent has a dependent child, and whether the respondent is employed.

Analytic Model

Ordered probit regression models are estimated for each of the short-term financing services. All five of the regression models contained the following independent variables: Male, Age, White, Married, Income, Dep. Child, and Employed. Male, White, Married, Dep. Child, and Employed enter the model as binary variables, coded as a "1" if the survey participant is male, White, married, has a dependent child, and employed, respectively. Age enters the model as a continuous variable. Income enters the model as a categorical variable, where the income of 0 to \$35,000 is compared to incomes of \$35,000 to \$100,000 and \$100,000 +. The error terms are assumed to follow the standard normal distribution.

Results

Descriptive Statistics

Table 1 provides a frequency distribution of the short-term financing usages among NCSC residents to the non-NCSC residents. Compared to non-NCSC residents, NCSC residents tend to utilize pawn shops and rent-to-own stores more frequently. *Further discussion is limited to comply with the ABRS word count requirements.*

Table 2 provides the descriptive statistics of the sample. *Further discussion is limited to comply with the ABRS word count requirements.*

Table 3 provides the combined results of the ordered probit regressions. The key findings reveal that NCSC residents, compared to non-NCSC residents, tend to more frequently utilize pawn shops and rent-to-own stores, and less frequently utilize payday loans. No statistically significant

differences were observed between NCSC residents and residents of other states for the usages of auto title loans and tax refund advances.

Main Results

Discussion and Implications

Our results show several important findings. NCSC residents were more likely to utilize both pawnshops and RTO agreements as a means of short-term financing compared to other U.S. residents. Assuming demand for short-term financing remains constant, regulatory controls or supply reduction would shift the adoption rate of these services. Previous research shows price caps and prohibitions on AFS products are associated with supply reductions (McKernan et al., 2013). Other regulatory policies regarding AFSs in the Carolinas appear to have an impact on their utilization. For instance, NCSC residents are more likely to have never used a payday loan and are less likely to have used them one or more times. The regulation and limits imposed on payday and title loans in the Carolinas could encourage those in need of short-term financing to seek alternatives. Our analysis sample of NCSC residents shows that, on average, more NCSC residents report income under \$35,000 than other U.S. residents. Likewise, less NCSC residents report making between \$35,000 and \$100,000 or more than \$100,000 than other U.S. residents. 59% of NCSC residents in our analysis sample were employed compared to 64% for the full sample. On average, Carolinas seem to be more characteristic of customers of pawnshops and RTOs.

Our analysis did not show a statistically significant relationship between NCSC residents and other U.S. residents in the utilization of title loans. The relatively larger loan amount and high interest of title loans creates a double-edged sword that could exacerbate the debt consequences in emergency situations. This could be an area of regulatory growth for South Carolina. South Carolina does impose some restrictions on title loans, but annual rates can exceed 300%. Previous research shows that imposing a 36% cap on title loans is associated with a 28% reduction in borrowing (McKernan et al., 2013).

These findings could have implications for further policy development and the promotion of financial literacy in NCSC. Many consumers of AFS are financially unsophisticated, and financial literacy improvements should underscore the pitfalls of their utilization by consumers. NCSC have mandated financial literacy requirements in their public schools, and future research would benefit NCSC residents by exploring the effects on the utilization of predatory AFS and other financial outcomes.

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	Never		1 Time		2 Times		3 Times		4 + Times	
	Full Sample	NCSC	Full Sample	NCSC	Full Sample	NCSC	Full Sample	NCSC	Full Sample	NCSC
Auto Title Loan	22,821 (88.33%)	836 (87.17%)	1,493 (5.78%)	65 (6.78%)	762 (2.95%)	29 (3.02%)	474 (1.83%)	17 (1.77%)	288 (1.11%)	12 (1.25%)
Pay Day Loan	22,148 (85.73%)	839 (87.49%)	1,269 (4.91%)	49 (5.11%)	946 (3.66%)	31 (3.23%)	672 (2.6%)	23 (2.40%)	801 (3.10%)	17 (1.77%)
Tax Refund Advance	23,266 (90.05%)	846 (88.22%)	940 (3.64%)	46 (4.80%)	757 (2.93%)	34 (3.55%)	462 (1.79%)	21 (2.19%)	411 (1.59%)	12 (1.25%)
Pawn Shop	20,854 (80.72%)	737 (76.85%)	1,537 (5.95%)	71 (7.40%)	1,258 (4.87%)	48 (5.01%)	887 (3.43%)	39 (4.07%)	1,300 (5.03%)	64 (6.67%)
Rent-to-Own	22,597 (87.46%)	812 (84.67%)	1,378 (5.33%)	64 (6.67%)	860 (3.33%)	41 (4.28%)	430 (2.21%)	23 (2.40%)	430 (1.66%)	19 (1.98%)

Data from the National Financial Capability Survey
N = 25,836 (n = 956)

Table 1. Frequency Distribution of Short-Term Financing Usage of NCSC Residents to Mon-NCSC Residents

	Total Sample (n = 25,836)		NCSC (n = 959)	
	Frequency	Std. Dev.	Frequency	Std. Dev.
Male	0.4595	0.4984	0.4598	0.4986
Age	48.2005	17.0110	48.69	17.3178
White	0.7924	0.4056	0.7434	0.4369
Married	0.4986	0.5000	0.4745	0.4996
Income				
< 35,000	0.3299	0.4702	0.3723	0.4836
35k to 100k	0.4625	0.4986	0.4588	0.4985
> 100k	0.2075	0.4056	0.1689	0.3749
Dep. Child	0.6409	0.4797	0.6569	0.4948
Employed	0.6424	0.4793	0.5912	0.4919

Data from the National Financial Capability Survey
N = 25,836 (n = 956)

Table 2. Descriptive Statistics of Sample

	Never	1 Time	2 Times	3 Times	4 + Times
Auto Title Loan					
NFCS	-0.0123 (0.0095)	0.0049 (0.0038)	0.0032 (0.0025)	0.0023 (0.0018)	0.0018 (0.0014)
Male	-0.0367*** (0.0038)	0.0147*** (0.0015)	0.0096*** (0.001)	0.0070*** (0.0008)	0.0054*** (0.0006)
Age	0.0047*** (0.0001)	-0.0019*** (0.0001)	-0.0012*** (0.0001)	-0.0009*** (0.0000)	-0.0007*** (0.000)
White	0.0260*** (0.0043)	-0.0105*** (0.0018)	-0.0068*** (0.0012)	-0.0050*** (0.0009)	-0.0038*** (0.0007)
Married	-0.0151** (0.0045)	0.0061** (0.0018)	0.0039** (0.0012)	0.0029** (0.0009)	0.0022** (0.0007)
Income (<35,000 as base)					
35k to 100k	0.0164*** (0.0047)	-0.0066*** (0.0019)	-0.0043*** (0.0012)	-0.0031** (0.0009)	-0.0024** (0.0007)
> 100k	0.0031 (0.0062)	-0.0012 (0.0024)	-0.0008 (0.0016)	-0.0006 (0.0012)	-0.0005 (0.0009)
Dep. Child	-0.0863*** (0.0044)	0.0346*** (0.0019)	0.0225*** (0.0013)	0.0165*** (0.0011)	0.0126*** (0.0009)
Employed	-0.0208*** (0.0051)	0.0084*** (0.0020)	0.0054*** (0.0013)	0.0040*** (0.001)	0.0031*** (0.0008)
Pay Day Loan					
NFCS	0.0271* (0.0110)	-0.0070* (0.0029)	-0.0062* (0.0025)	-0.0051* (0.0021)	-0.0087* (0.0035)
Male	-0.0329*** (0.0041)	0.0085*** (0.0011)	0.0076*** (0.0010)	0.0063*** (0.0008)	0.0105*** (0.0013)
Age	0.0049*** (0.0002)	-0.0013*** (0.0000)	-0.0011*** (0.0000)	-0.0009*** (0.000)	-0.0016*** (0.0001)
White	0.0351*** (0.0046)	-0.0091*** (0.0012)	-0.0081*** (0.0011)	-0.0067*** (0.0009)	-0.0112*** (0.0015)
Married	0.0166*** (0.0048)	-0.0043*** (0.0012)	-0.0038** (0.0011)	-0.0032** (0.0009)	-0.0053** (0.0015)
Income (<35,000 as base)					
35k to 100k	0.0412*** (0.0051)	-0.0105*** (0.0013)	-0.0094*** (0.0012)	-0.0079*** (0.0010)	-0.0134*** (0.0017)
> 100k	0.0459*** (0.0065)	-0.0118*** (0.0017)	-0.0105*** (0.0015)	-0.0088*** (0.0013)	-0.0148*** (0.0021)
Dep. Child	-0.0982*** (0.0047)	0.0255*** (0.0013)	0.0226*** (0.0012)	0.0187*** (0.0011)	0.0314*** (0.0017)

	Never	1 Time	2 Times	3 Times	4 + Times
Employed	-0.0178** (0.0053)	0.0046** (0.0014)	0.0041** (0.0012)	0.0034** (0.0010)	0.0057** (0.0017)
Tax Refund Advance					
NFCS	-0.0145 (0.0085)	0.0042 (0.0025)	0.0040 (0.0023)	0.0029 (0.0017)	0.0034 (0.0020)
Male	-0.0407*** (0.0034)	0.0117*** (0.0010)	0.0112*** (0.001)	0.0080*** (0.0008)	0.0097*** (0.0009)
Age	0.0052*** (0.0001)	-0.0015*** (0.0001)	-0.0014*** (0.0001)	-0.000*** (0.0001)	-0.0012*** (0.0001)
White	0.0364*** (0.0038)	-0.0105*** (0.0011)	-0.0100*** (0.0011)	-0.0072*** (0.0008)	-0.0087*** (0.0010)
Married	-0.0147*** (0.0041)	0.0042*** (0.0012)	0.0040*** (0.0011)	0.0029*** (0.0008)	0.0035*** (0.0010)
Income (<35,000 as base)					
35k to 100k	0.0199*** (0.0042)	-0.0058*** (0.0012)	-0.0055*** (0.0012)	-0.0039*** (0.0008)	-0.0047*** (0.001)
> 100k	-0.0012 (0.0057)	0.0003 (0.0016)	0.0003 (0.0015)	0.0002 (0.0011)	0.0003 (0.0014)
Dep. Child	-0.0880*** (0.0041)	0.0254*** (0.0013)	0.0242*** (0.0013)	0.0174*** (0.0011)	0.0210*** (0.0013)
Employed	-0.0297*** (0.0048)	0.0086*** (0.0014)	0.0082*** (0.0014)	0.0059*** (0.0010)	0.0071*** (0.0012)
	Never	1 Time	2 Times	3 Times	4 + Times
Pawn Shop					
NFCS	-0.0281** (0.0110)	0.0060** (0.0024)	0.0061** (0.0024)	0.0051** (0.0020)	0.0109** (0.0042)
Male	-0.0518*** (0.0044)	0.0111*** (0.0010)	0.0112*** (0.0010)	0.0094*** (0.0009)	0.0200*** (0.0018)
Age	0.0067*** (0.0002)	-0.0014*** (0.0001)	-0.0014*** (0.0001)	-0.0012*** (0.0001)	-0.0026*** (0.0001)
White	0.0221*** (0.0051)	-0.0047*** (0.0011)	-0.0048*** (0.0011)	-0.0040*** (0.0009)	-0.0085*** (0.0020)
Married	0.0241*** (0.0052)	-0.0052*** (0.0011)	-0.0052*** (0.0011)	-0.0044*** (0.0010)	-0.0093*** (0.0020)
Income (<35,000 as base)					
35k to 100k	0.1068*** (0.0058)	-0.0221*** (0.0013)	-0.0229*** (0.0014)	-0.0197*** (0.0012)	-0.0421*** (0.0025)
> 100k	0.1372*** (0.0071)	-0.0299*** (0.0018)	-0.0301*** (0.0018)	-0.0253*** (0.0015)	-0.0518*** (0.0028)
Dep. Child	-0.1102 (0.0049)	0.0237 (0.0012)	0.0238 (0.0012)	0.0201 (0.0011)	0.0426 (0.0021)
Employed	0.0150*** (0.0056)	-0.0032*** (0.0012)	-0.0032*** (0.0012)	-0.0027*** (0.001)	-0.0058*** (0.0022)

	Never	1 Time	2 Times	3 Times	4 + Times
Rent-to-Own					
NFCS	-0.0235* (0.0094)	0.0078* (0.0032)	0.0060* (0.0024)	0.0048* (0.0019)	0.0049* (0.002)
Male	-0.0279*** (0.0039)	0.0093*** (0.0013)	0.0071*** (0.001)	0.0057*** (0.0008)	0.0058*** (0.0008)
Age	0.0052*** (0.0001)	-0.0017*** (0.0001)	-0.0013*** (0.0001)	-0.0011*** (0.000)	-0.0011*** (0.0001)
White	0.0222*** (0.0044)	-0.0074*** (0.0015)	-0.0057*** (0.0011)	-0.0045*** (0.0009)	-0.0046*** (0.0009)
Married	-0.0101* (0.0045)	0.0034* (0.0015)	0.0026* (0.0012)	0.0020* (0.0009)	0.0021* (0.0009)
Income (<35,000 as base)					
35k to 100k	0.0471*** (0.0049)	-0.0155*** (0.0016)	-0.0121*** (0.0013)	-0.0097*** (0.0011)	-0.0099*** (0.0011)
> 100k	0.0496*** (0.0062)	-0.0163*** (0.0021)	-0.0127*** (0.0016)	-0.0102*** (0.0013)	-0.0104*** (0.0013)
Dep. Child	-0.0905*** (0.0044)	0.0302*** (0.0016)	0.0232*** (0.0013)	0.0184*** (0.0011)	0.0187*** (0.0012)
Employed	-0.0088** (0.0051)	0.0029** (0.0017)	0.0023** (0.0013)	0.0018** (0.001)	0.0018** (0.001)

Data from the National Financial Capability Survey

N = 25,836

Significance is defined as follows: * significant at $p < 0.05$; ** significant at $p < 0.01$; *** significant at $p < 0.001$

Table 3. Average Marginal Effects of NCSC Status on Short-Term Financing Usage

Appendix

Variable	Question
Auto Title Loan	In the past 5 years, how many times have you... - Taken out an auto title loan? Auto title loans are loans where a car title is used to borrow money for a short period of time. They are NOT loans used to purchase an automobile.
Pay Day Loan	In the past 5 years, how many times have you... - Taken out a short-term 'payday' loan?
Tax Refund Advance	In the past 5 years, how many times have you... - Gotten an advance on your tax refund? This is sometimes called a 'refund anticipation check' or 'Rapid Refund' (Not the same as e-filing).
Pawn Shop	In the past 5 years, how many times have you... - Used a pawn shop?
Rent-to-Own	In the past 5 years, how many times have you... - Used a rent-to-own store?

Data from the National Financial Capability Survey
N = 25,836 (n = 956)

Table 4. Questions Used to Gather Data

THE IMPACT OF FINANCIAL MARKET DEVELOPMENT ON CAPITAL STRUCTURE DECISIONS OF VIETNAMESE FIRMS

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Key words:

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Introduction

The topic of capital structure policy in finance research, especially for transitional developing nations, remains a source of fascination. The three major theories in capital structure are the trade-off, pecking order, and market timing models. Baker and Wurgler (2002) proposed the market timing theory which posits that companies tend to choose equity when they believe the cost of equity is relatively low, and they opt for debt otherwise. The trade-off theory predicts an optimal capital structure in firms by weighing the costs of bankruptcy, financial distress, and agency problems against the benefits of debt. (Kraus & Litzenberger, 1973; Kim, 1978). In contrast, the pecking order theory centers on the cost of imperfect information and argues that information asymmetries suggest a financing hierarchy (Myers & Majluf, 1984). No one theory can fully explain capital structure decisions across all firms, and the explanatory power of these theories may vary across studies. In this paper, we focus our analysis on the trade-off and pecking order theories.

Vietnam's economy is among the fastest-growing in the world. Significant events in the financial markets, such as the expansion of stock trading hours, the introduction of new stock indices, and the implementation of an electronic bidding system in 2012, had a significant impact and marked the beginning of rapid growth in the Vietnamese stock market. As a result, the stock market has experienced significant improvements in liquidity and depth, enabling firms to access funding more easily and at lower costs (Campello, Ribas & Wang, 2012). Moreover, the continued

liberalization of the stock markets has led to enhanced corporate governance for listed firms. Consequently, this may have an impact on the Vietnamese companies' capital structure decisions. Overall, the initiatives undertaken by the Vietnamese government to foster capital markets since 2012 have established a conducive environment for reevaluating the explanatory power of theories pertaining to capital structure choices.

We contribute to the literature in three areas. First, We investigate whether the measures and initiatives introduced since 2012 to promote the Vietnamese capital markets have impacted the financing behaviors of Vietnamese companies. Our empirical results indicate that, subsequent to 2012, Vietnamese-listed firms significantly increased the pace of their adjustments towards target leverage ratios. Secondly, we modify the traditional partial adjustment models to examine the asymmetric impact of financial market development on underleveraged and overleveraged firms. We find that after 2012, the leverage adjustment speed significantly increased for Vietnamese overleveraged firms, but not for underleveraged firms. Lastly, we adopt an error correction model to examine the short-term adjustment dynamics towards the long-term target leverage ratio, as well as the long-term relationship between actual leverage ratios and the target leverage ratio.

The remainder of the paper is organized as follows. Section 2 provides a selected literature review. Section 3 describes the data and methodology. Section 4 presents details of the empirical methodology and main results. Conclusions and empirical implications are provided in Section 5.

Capital Structure Literature

Numerous empirical studies have been developed to examine capital structure theories, with the majority being conducted in the context of developed markets (Shyam-Sunder & Myers, 1984; Bradley, Jarrell & Kim, 1984; Fischer, Heinkel & Zechner, 1989; Harris & Raviv, 1991; Leary & Robert, 2005; Lemmon & Zender, 2010; Welch, 2014; Jarallah, Saleh & Salim, 2019). A few studies have examined Vietnamese companies' capital structure decisions. Nguyen, Ho, and Vo (2019) find that the Vietnamese listed firms follow the trade-off theory to determine their capital structure and there is no evidence to support the pecking order theory. Vu, Tran, and Doan (2020) examine the impact of the various aspects of corporate governance on the choice of capital structure of Vietnamese listed firms. They focus on the effect of factors such as board size, board independence, and different ownership structures. Khoa and Thai (2021) provide evidence supporting the trade-off theory in capital structure by studying Vietnam's real estate companies.

These studies have provided insights into the financing behavior of Vietnamese companies. However, none of these articles have studied possible changes in financing behavior resulting from the rapid growth and development of financial markets, nor have considered the fact that the costs of adjusting toward leverage may also change as firms move toward target leverage.

Data and Methodology

Our dataset includes all non-financial listed firms in Vietnam from 2008 to 2017. We sourced the data from Compustat Global and excluded observations with missing variables of interest, resulting in 2,229 firm-year observations across 278 companies. We evaluate various trade-off and pecking order models and assess their performance by combining these models in the same

regression. We employ panel data regressions as well as dynamic panel models with generalized method of moments estimation to address potential endogeneity issues.

Results and Implications

The Pecking-Order Theory

In the pecking-order theory, firms use debt financing as a primary option after internal funds are depleted, with equity financing as a last resort. Shyam-Sunder and Myers (1999) and Frank and Goyal (2003) formulate a regression analysis to test the pecking-order theory and argue a firm's financial deficit should have a one-to-one relationship with its leverage. Given that, we run the following regression:

$$\Delta Debt_{it} = \alpha + \rho DEFICIT_{it} + \varepsilon_{it} \quad (1)$$

where $\Delta Debt_{it}$ is the amount of total debt issued by firm i at period t ; $DEFICIT$ measures the cash flow deficit. The pecking-order theory is summarized by the following null hypothesis and P-values of the F-test are reported in Table 1:

$$H_0: \alpha = 0 \text{ and } \rho = 1.$$

	OLS (1)	OLS (2)
DEFICIT	0.364*** (0.02)	0.404*** (0.03)
Post_2012*DEFICIT		-0.073* (0.04)
Constant	0.152*** (0.02)	0.149*** (0.02)
F-test	0.00	0.00
N	2,229	2,229

Notes: Robust standard errors are reported in parentheses below the coefficients. Superscripts *, **, and *** indicate significance at 10%, 5%, and 1% levels, respectively. Hausman and Breusch-Pagan Lagrange multiplier test suggests OLS is the preferred model.

Table 1. Test of Pecking-Order Model

We also include an interaction term between $DEFICIT$ and a post-2012 dummy in Model (1). Our results show that there is no supporting evidence for the pecking-order theory in Vietnamese-listed firms.

The Traditional Partial Adjustment Model

The presence of adjustment costs may limit a firm's ability to swiftly return to its desired capital structure, resulting in a gradual adjustment process as firms work towards achieving their target levels. Built upon previous research (Fama & French, 2002; Flannery & Rangan, 2006), we employ the following standard partial adjustment model to test the trade-off theory:

$$\Delta Debt_{it} = \alpha + \beta DTL_{it} + \varepsilon_{it} \quad (2)$$

where DTL_{it} measures the deviation from the target leverage ratio. Coefficient β measures how fast a firm moves its leverage ratio towards the target level. We estimate model (2) by employing three econometric approaches: fixed-effect regressions (FE), Arellano and Bond's (1991) difference GMM (DGMM), and Blundell and Bond's (1998) system GMM (SGMM)¹.

	FE (1)	DGMM (2)	SGMM (3)	FE (4)	DGMM (5)	SGMM (6)
DEFICIT	0.245*** -0.017	0.251*** -0.037	0.276*** -0.034	0.248*** -0.017	0.235*** -0.033	0.268*** -0.034
DTL	0.441*** -0.016	0.330*** -0.1	0.364*** -0.104	0.387*** -0.02	0.313*** -0.085	0.352*** -0.103
Post-2012*DTL				0.086*** -0.019	0.182*** -0.048	0.125** -0.06
Constant	-0.019*** -0.006		0.009 -0.007	-0.019*** -0.006		0.006 -0.008
AR2		0.51	0.222		0.715	0.371
Hansen test		0.384	0.47		0.129	0.38
N	2,229	1,463	2,229	2,229	1,463	2,229

Notes: AR2 is a test for second-order serial correlation. Hansen test is a test for over-identifying restrictions under the null of valid instruments.

Table 2. Test of the Partial Adjustment Model

The positive coefficients on DTL (see Table 2) are consistent with the trade-off theory prediction, that is, Vietnamese firms have a target leverage ratio and move gradually toward that target if any deviation exists. We also include an interaction term between DTL and a post-2012 dummy in Model (2) to test whether there are additional effects of recent financial market development on the leverage adjustment speed. Vietnamese firms demonstrated an accelerated pace of leverage adjustment after 2012, as evidenced by the significantly positive coefficients on the interaction terms

The Modified Partial Adjustment Model

The traditional partial adjustment model assumes that firms make a symmetric adjustment toward the target leverage ratio without without considering any distinction between overleveraged and underleveraged firms. We modify the standard partial adjustment model to capture potential asymmetric adjustment speeds as follow:

$$\Delta Debt_{it} = \alpha + \delta_1 DTL_{it}^{over} + \delta_2 DTL_{it}^{under} + \varepsilon_{it} \quad (3)$$

Where $DTL_{it}^{over} = DTL_{it}$, if $Debt_{i,t-1} > Debt_{it}^*$; otherwise $DTL_{it}^{over} = 0$; $DTL_{it}^{under} = DTL_{it}$, if $Debt_{i,t-1} < Debt_{it}^*$; otherwise $DTL_{it}^{under} = 0$. DLT_{it}^{over}

¹ Dynamic panel GMM models are widely used in empirical research, for example, Dai et al. (2020) and Guo et al. (2018).

represents the positive deviation of the overleveraged firm's actual leverage ratio above its target, and DLT_{it}^{under} represents the negative deviation of the underleveraged firm's actual leverage ratio below its target.

The adjustment coefficients δ_1 and δ_2 (in Table 3) are statistically significant, suggesting that Vietnamese firms actively adjust their leverage deviation, regardless of whether they are underleveraged or overleveraged. The estimated coefficients for the two interaction terms indicate that, after 2012, Vietnamese firms with above-target leverage ratios accelerate their leverage adjustment process, while firms with below-target leverage levels do not exhibit significant changes in their adjustment speed.

	FE (1)	DGMM (2)	SGMM (3)	FE (4)	DGMM (5)	SGMM (6)
DEFICIT	0.245***	0.407***	0.286***	0.249***	0.283***	0.288***
	-0.017	-0.09	-0.03	-0.017	-0.034	-0.031
DTL^{over}	0.434***	0.483***	0.521***	0.353***	0.229	0.238
	-0.028	-0.142	-0.139	-0.038	-0.181	-0.183
DTL^{under}	0.446***	0.144*	0.159*	0.414***	0.288***	0.290***
	-0.025	-0.082	-0.083	-0.033	-0.111	-0.111
Post-2012*DTL^{over}				0.137***	0.488**	0.479**
				-0.043	-0.208	-0.21
Post-2012*DTL^{under}				0.043	-0.122	-0.117
				-0.037	-0.106	-0.107
Constant	-0.018**		-0.026	-0.023***		-0.046**
	-0.007		-0.018	-0.008		-0.022
AR2		0.22	0.23		0.64	0.63
Hansen test		0.17	0.15		0.49	0.5
N	2,229	1,951	2,229	2,229	1,951	2,229

Table 3. Test of the Modified Partial Adjustment Model

The Error Correction Model (ECM)

The ECM captures changes in the target level as well as their effects on the dynamic leverage adjustment process. We follow Dang (2013) and estimate the ECM as follow²:

$$\Delta Debt_{it} = \alpha + \theta_1 CTL_{it} + \theta_2 EC_{it} + \varepsilon_{it} \quad (4)$$

Where $CTL_{it} = Debt_{it}^* - Debt_{it-1}^*$ and $EC_{it} = \delta Debt_{it-1}^* - Debt_{it-1}$. The coefficient on CTL, θ_1 , represents the short-term effect of the target debt ratio on the actual debt ratio. The coefficient on EC, θ_2 , represents the equilibrium effect of the target debt ratio on the actual debt ratio and, thus, is also treated as the long-term effect.

As shown in Table 4, Vietnamese public firms undertake short-term adjustments toward their target debt ratios in response to any changes in such targets, as well as toward the long-term target

² when $\delta = 1$ and $\theta_1 = \theta_2$, Model (4) is reduced to the partial adjustment model in Model (3).

leverage ratio in the last accounting period. In addition, the positive coefficients on both interaction terms suggest that Vietnamese firms have boosted their speeds of both short-term and long-term leverage adjustment after 2012.

	FE (1)	DGMM (2)	SGMM (3)	FE (4)	DGMM (5)	SGMM (6)
DEFCIT	0.242*** -0.017	0.259*** -0.035	0.253*** -0.034	0.244*** -0.017	0.274*** -0.036	0.271*** -0.035
CTL	0.443*** -0.028	0.371*** -0.13	0.372*** -0.131	0.387*** -0.04	0.12 -0.188	0.116 -0.189
EC	0.428*** -0.017	0.420*** -0.088	0.416*** -0.087	0.405*** -0.027	0.285** -0.12	0.279** -0.118
Post-2012*CTL				0.108** -0.054	0.430* -0.237	0.435* -0.234
Post-2012*EC				0.043 -0.04	0.230** -0.116	0.239** -0.114
Constant	-0.023*** -0.006		0.004 -0.006	-0.023*** -0.006		0.001 -0.006
AR2		0.2	0.2		0.42	0.42
Hansen test		0.46	0.48		0.58	0.58
R-squared	0.47			0.52		
N	2,229	1,951	2,229	2,229	1,951	2,229

Table 4. Test of the Error Correction Model

Conclusion

The Vietnamese capital market has experienced a significant transformation, marked by rapid growth in its stock market since 2012. This study investigate the impact of capital market development on the capital structure decisions of Vietnamese-listed companies. Specifically, we evaluate various trade-off and pecking order models and assess their performance. Our study reveals that the trade-off theory provides a better explanation for the capital structure decisions of Vietnamese firms, especially in the period after 2012. Moreover, after 2012, Vietnamese firms increased the speed of their leverage adjustments, with further analysis indicating that the acceleration was driven by overleveraged firms rather than underleveraged ones. The ECM results suggest that after 2012, Vietnamese firms boosted the speeds of both short-term adjustment in response to target changes and adjustment toward the long-term target leverage ratio.

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IDENTIFYING DISCRIMINATION: LGBTQ+ LAW IMPACTING APPROVED MORTGAGE LOAN AMOUNTS

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Introduction

The American dream of owning a home is still out of reach for many minorities, with lesbian, gay, bisexual, transgender, and queer/questioning (LGBTQ+) individuals facing particular challenges. Discriminatory factors and initial high-interest rates often prevent LGBTQ+ individuals from becoming homeowners, and they experience homelessness at twice the rate of non-LGBTQ+ individuals (Charles & Hurst, 2002; Smith et al., 2011; Romero et al., 2020). While previous studies have used approval or denial as a proxy for discrimination (e.g., Ladd, 1998; Turner, 1999; Hagedorff, 2022), we argue that an additional proxy is needed to demonstrate discrimination against LGBTQ+ mortgage applicants. Our study aims to examine the disproportionate impact that LGBTQ+ and older Americans may face even when approved for a mortgage. We find that legal LGBTQ+ protections act as external factors that have statistically significant effects on mortgage loan amounts.

Although the homeownership rate for American adults is around 65.9%, the rate is lower for minorities, including LGBTQ+ individuals, with a national average of 44.9% for minorities (Census, 2022). Studies have shown that external and discriminatory factors contribute to these lower rates of homeownership among minorities (Charles & Hurst, 2002; Smith et al., 2011). A recent survey conducted by Freddie Mac found that 49% of LGBTQ+ individuals aspire to own a home, but they face higher initial interest rates and other barriers that make it harder for them to become homeowners (Lynch et al., 2021). Moreover, a study by The Williams Institute at UCLA found that LGBTQ+ individuals are at a higher risk of homelessness, with a rate of roughly 17%, which is twice as high as non-LGBTQ+ individuals (Romero et al., 2020). The issue of lower homeownership rates and higher risks of homelessness among LGBTQ+ individuals affects a

significant portion of the US population, with approximately 10.7 million American citizens who identify as LGBTQ+ (Gallup 2021).

Despite efforts to improve equity in lending, minority groups continue to face barriers to credit access (Mitchell & Pearce, 2011) and predatory lending practices (Engel & McCoy, 2008). As such, there is a need for further research to better understand the impact of protective laws on the financial services industry. Our paper contributes to the literature in several ways. First, we examine how state laws that extend protections to LGBTQ+ individuals moderate the loan amounts of approved mortgages. By focusing specifically on approved mortgage loan amounts, we expand on previous studies that examined LGBTQ+ mortgages (Sun & Gao, 2019; Hagedorff et al., 2022). Additionally, we demonstrate the need for an additional proxy to identify discrimination in mortgage lending by utilizing HMDA data to better understand the dynamics of mortgage lending discrimination (CFPB, 2023).

Our research question for this paper is:

RQ1) Do explicit legal protections for LGBTQ+ individuals moderate loan approval amounts for traditional minorities (i.e., LGBTQ+ and older applicants) when controlling for all other lending factors?

Literature Overview

Ethical Decision-Making in the Literature

The literature on ethical decision-making has identified various factors that influence decision-making, including values and cognitive development (Craft, 2013) and the process underlying ethical decision-making (Lehnert et al., 2015). Craft (2013), building on Rest & Jones' (1991) model, argues that judgment in ethical decision-making is influenced by environmental factors that help individuals recognize moral issues and make sound judgments. According to Scholl et al. (2016), laws and other external forces can motivate ethical decision-making. When individuals perceive something as both legal and morally correct, they are more likely to follow it closely. In fact, Christensen (2008) suggested that the law has a more substantial impact on ethical behavior than other forms of external environmental factors. As such, the legal system can act as a moral compass and significantly impact the decision-making processes of employees in advisory roles (Arrami & QingXiang, 2021; Wilcoxson, 2019). On the other hand, in the absence of protective laws, there may be a lack of guidance for ethical behavior, which could lead to unethical conduct (Meiring, 2019; Modesto & Pilati, 2020; Reck et al., 2021; Zeng, 2019).

Much of the recent financial services literature has revolved around industrial misconduct (Hayne, 2019; Murray, 2009; Skinner, 2015). While recent studies have established the consequences of these risks in the post-2008 Great Recession market (Gartenberg & Pierce, 2017), the literature has yet to fully examine how laws can deter discrimination and protect minority groups from these risks. Additionally, there is abundant evidence that minority groups have continued to suffer unjust consequences in regard to credit access (Mitchell & Pearce, 2011) and predatory lending practices (Engel & McCoy, 2008).

As a result, we hypothesize the following:

H1: Same sex female couples will experience reduced mortgage loan amounts.

LGBTQ+ Protection and the Mortgage Industry

In recent years, several states have implemented explicit protections for members of the LGBTQ+ community (Hamilton, 2020), providing greater guarantees (Mostaghim, 2021; Benharris, 2022). The relationship between laws and ethical decision-making has shown that laws can guide actions and decisions (Johnson, 2020), and protective laws are meant to ensure fair treatment of all members of the LGBTQ+ community in the financial system. By promoting a sense of unity and equal treatment, such protective laws can help to cultivate a more equitable lending environment.

Previous research has explored the impacts of discrimination on same-sex couples who apply for mortgage loans (Sun & Gao, 2019) and found that marriage equality promotes credit access for same-sex borrowers (Hagendorff et al., 2022). Building on this research, we suggest that ethical decisions are made with the use of laws that offer explicit protections, providing a clear basis for lenders to promote equal protections and moderate the relationship between same-sex applicants and mortgage loan amounts.

Given that ethical decision-making is based on external guidance, such as laws, individuals are guided by rules and regulations outside of a corporation's control. In states with explicit legal protections for LGBTQ+ individuals, there are clear guidelines for lending officers to follow. Therefore, explicit legal protections for LGBTQ+ individuals are likely to positively moderate the relationship between same-sex borrowers and loan amounts, as these laws guide lending officers and act as a deterrent from discriminatory practices. As a result, we hypothesize the following:

H1a: LGBTQ+ laws will positively moderate the relationship between mortgage amounts.

Age Discrimination and Mortgage Lending: Further Implications of LGBTQ+ Protectionary Law

The previous literature has highlighted evidence of discriminatory lending including age discrimination based on numeric age (Gee et al., 2007; Black et al., 1978; Dietrich, 2005). More recent research has focused on discriminatory practices that affect older age groups in terms of the types of credit available (Cozarenco & Szafarz, 2022) and racial discrimination (Berg, 2019; Butler et al., 2019) within the mortgage lending market (Delis & Papadopoulos, 2019). As Craft (2013) notes, protective laws can affect ethical decision-making. In states where explicit LGBTQ+ protections are not present, it is possible that there are no laws or regulations in place to protect against age discrimination (Neumark, 2003; Furunes & Mykletun, 2010). Therefore, we hypothesize that:

H2: Older applicants (aged 62+) will have lower approved mortgage loan amounts than younger borrowers.

Protective laws for the LGBTQ+ community can provide additional guidance that deters discrimination in all forms, including age discrimination. By promoting a more ethical and

inclusive lending environment, these laws may positively moderate the relationship between older applicants and loan amounts. Therefore, we hypothesize the following:

H2a: In states that have explicit LGBTQ+ protections, mortgage amounts will be larger for applicants aged 62 or greater.

Methodology

We utilized Home Mortgage Disclosure Act (HMDA) data, which includes 356,270 data on mortgage applicants between 2018 and 2020. Financial institutions are mandated to report the applicant information under HMDA. The data is then openly accessed via the Consumer Financial Protection Bureau (CFPB). We restricted the data to the 138,863 mortgage applications that were completed and funded [1]. Our sample consisted of all originated and funded mortgage applications within the United States by all financial institutions (CFPB, 2023).

Measures:

The following measures were utilized to measure our hypotheses via ordinary least squares (OLS) Regression.

Dependent Variable:

To measure the mortgage amount, we used the final reportable loan amount as indicated in the Home Mortgage Disclosure Act (HMDA) data. This amount reflects the actual mortgage amount that is documented on the borrower's promissory note. Although it may seem counter-intuitive, loan amount is a reasonable measure in this instance because we have controlled for multiple borrower and lender-specific criteria. This helps to ensure that we are making an apples-to-apples comparison when examining the impact of various factors, such as age and LGBTQ+ protections laws, on approved mortgage loan amounts.

Moderating Variable:

Utilizing LGBTQ Protections Law [2]: Coded and measured by states who have established LGBTQ+ housing protections (2022) from discrimination or haven't. The list of states is provided by the Human Rights Campaign. Please see Appendix for list of states who have and don't have explicit LGBTQ housing protections.

Independent Variables:

LGBTQ+ Population

Consistent with previous research (e.g., Sun & Gao, 2019; Hagendorff et al., 2022), we focused on same-sex female applicants who were assumed not to be siblings or parents. To identify these applicants, we followed established methodology and excluded all same-sex borrowers who shared race. This approach left us with a total of 30,165 applications from same-sex female borrowers.

Age 62+

Our sample, as provided by the HMDA dataset, includes applicants who are aged 62 or older. This age cutoff is consistent with the CFPB's classification of older applicants within this dataset.

Control Variables:

We controlled for multiple factors that may affect mortgage approval decisions as provided by the HMDA dataset. Similar studies have also controlled for these same variables (Bartlett et al., 2022). Please see appendix for additional information on measurements.

Results and Implications

Table 1 presents the means, standard deviations, and correlations of our study variables. The highest observed variance inflation factor (VIF) was 2.58, indicating that multicollinearity was not a major concern (Hair, 2009). The OLS regression model is explaining 16% ($R^2=.16$) of the variance in loan amounts among 138,863 ($n=138,863$) approved mortgage applications in the US between 2018-2020.

The model concludes that same-sex minority female applicants mortgage amounts were significantly decreased ($\beta = -\$13,560$, $p < .0001$) confirming hypothesis 1. Our results show that loan amounts for older applicants have significantly decreased ($\beta = -\$30,826$, $p < .0001$) supporting hypothesis 2. Our model suggests that minority applicants who live in states which have these laws have significantly increased loan amounts ($\beta = \$41,952$, $p < .0001$). Our model also shows that LGBTQ protected states ($\beta = -\$19,513$, $p < .0001$) is significant among applicants aged 62 or older, supporting hypotheses 2a. We also tested to see if those who are age 62+ and are members of the LGBTQ+ community have differences in loan amounts. However, the results of this model were not statistically significant.

ANOVA Testing on Least Square Means of Mortgage Amounts:

To better communicate the differences in loan amount we conducted a Least Square Means (LMS) to better understand loan amount. In our model, we find that same sex female applicants who are in the same age group received a significantly higher mortgage amount in LGBTQ-protected states ($\mu = \$389,167$, $\sigma = \$2,382$, $p < .0001$) compared to the same borrower group in states without LGBTQ-protections ($\mu = \$223,849$, $\sigma = \$2686$, $p < .0001$). In our second model we tested for LGBTQ protection states based on age and found that for older applicant's aged 62 years and older for states with LGBTQ protections the loan amounts are larger ($\mu = \$331,459$, $\sigma = \$1,951$, $p < .0001$) compared to the same borrower group in states without LGBTQ-protections ($\mu = \$226,152$, $\sigma = \$1,947$, $p < .0001$).

To provide assurance that our sample output provided statistically different results for both same-sex female and age 62 or greater applicants, we conducted an independent samples t-test with unequal variances as suggested by Hair (2009). In the first sample we found that the mean of the reference group same-sex female applicants in areas without explicit LGBTQ+ protections was significantly lower $\mu_a = \$285,415$, $\mu_b = \$341,624$, $\sigma_a = \$221,029.4$, $\sigma_b = \$200,743$, $p < .01$). We conducted the same t test with unequal variances for those aged 62 or greater. Our reference group was also states who did not have explicit LGBTQ+ protections. The results also confirmed statistically meaningful differences among our sample populations with states who do not offer LGBTQ+ protections have a significantly lower mean ($\mu_a = \$296,806$, $\mu_b = \$325,418$, $\sigma_a = \$215,452$, $\sigma_b = \$246,919$, $p < .0001$).

Conclusion

Limitations

Our study has several limitations that need to be acknowledged. First, our study does not use the traditional proxy for mortgage approval, which may limit the generalizability of our findings. However, we argue that other studies have demonstrated the usefulness of analyzing loan amounts as a proxy for discrimination (Ladd, 1998; Turner, 1999), including those that utilized HMDA data as an index to better understand discrimination (Mendez et al., 2011). Second, our study relies on HMDA data, which is known to have limitations due to the privacy protections impacting the availability of variables. (Sun & Gao, 2019). Third, our study is limited by the lack of direct observations that explicitly state the sexuality of the borrower. While we believe our percentages are consistent with Gallup's estimates, we cannot be certain of the sexual orientation of our sample. Future research may benefit from changes in reporting standards that address this issue.

Despite these limitations, our study provides valuable insights into the impacts of LGBTQ+ protections on loan amounts, suggesting that explicit legal protections positively moderate the relationship between minority borrowers and approved loan amounts. These findings may have important implications for other communities and workforces, highlighting the need for continued efforts to promote equal treatment and reduce discrimination in mortgage lending.

Concluding Remarks

Overall, our results facilitate the need for further discussion about how external factors in the forms of laws affect ethical decision making. Utilizing mortgage loans as an example, it is clear that laws have an effect on these amounts. These effects carry substantial economic impacts on local communities.

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Appendix

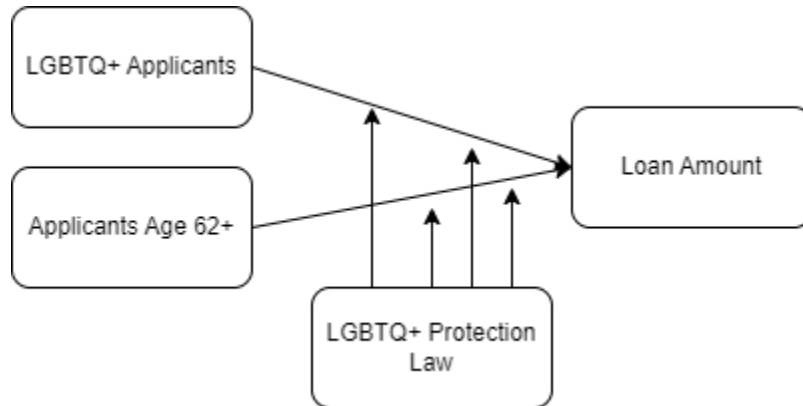


Figure 1. Hypothesized Model

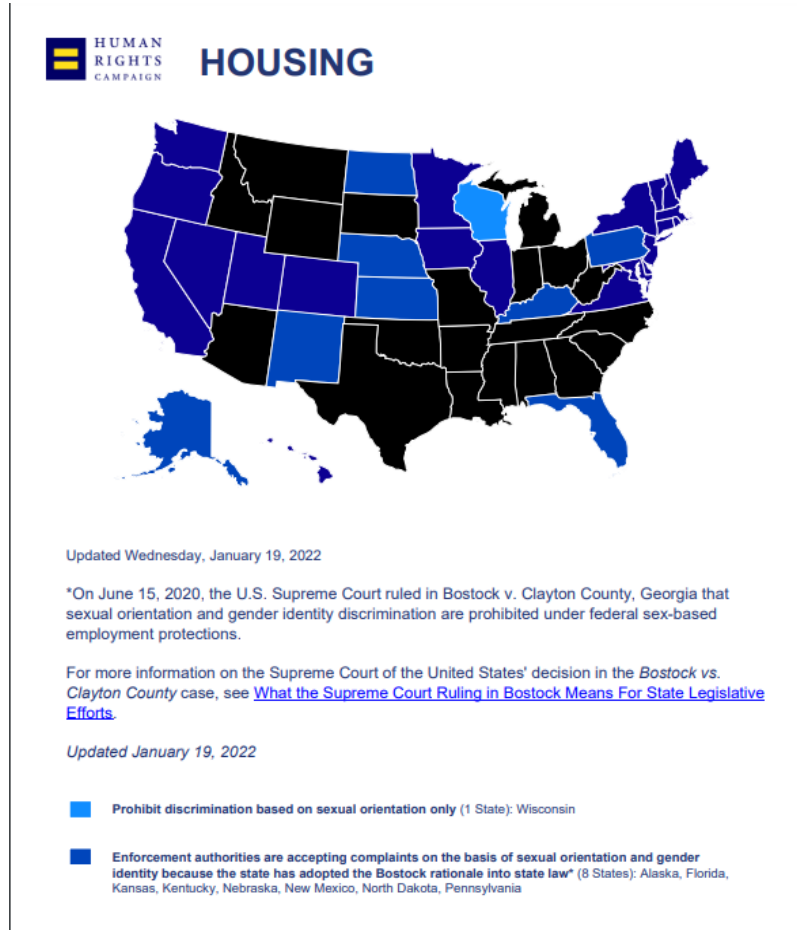


Figure 2. LGBTQ+ Housing Protection Law by State (HRC, 2022)

Income: Measured in 000's of dollars annually
Loan interest rate percentage: Measured in percent
Loan to value ratio: A measure of loan amount / total reported property value
Lending institution: Individual institution identified by a Legal Entity Identifier (LEI)
Mortgage term: Mortgage Term in Months
State: State where applicant(s) reside
HMDA Year: 2018, 2019, 2020
LGBTQ Protections Law[2]: Coded and measured by states who have established LGBTQ+ protections (2022) from discrimination or haven't. The list of states is provided by the Human Rights Campaign.

Table 1. Measurements for Model

	Mean	SD	1	2	3	4	5	6
1. Loan Amount	298652.6	217733.4	1					
2. Same Sex Female Couple	0.492217	0.49994	-0.1101***	1				
3. Age 62	0.132961	0.339533	-0.0667***	0.0508***	1			
4. Income	751.0922	475.7029	-0.1247***	0.0411***	0.0418***	1		
5. Rate	753.4808	401.667	-0.0914***	0.0325***	0.0193***	0.0898***	1	
6. Loan to Value	18342.55	9249.925	0.0166***	0.0119***	-0.1376***	0.0505**	0.2833***	1

p<.05* p<.01** p<.001***

Table 2. Correlation Matrix

Hypothesis	Variable	β	P
H1	Same Sex Female Minority Applicants	-13560	<.0001***
H1a	Minority Applicants in States With LGBTQ+ Protections	41952	<.0001***
H2	Older Applicants (Age 62+)	-13560	<.0001***
H2a	Applicants Age 62+ In states with LGBTQ+ Protections	-19513	<.0001***

n = 138,863

p<.05*, p<.01**, p<.001***

Table 3. Results of Hypotheses

Variable	Condition	μ (Loan Amount Expressed in \$)	σ (Standard Deviation Expressed in \$)	P	n
Same Sex Female Minority Applicants	States With LGBTQ+ Protection	\$389,167	\$2,382	<.0001***	30,165
Same Sex Female Minority Applicants	States Without LGBTQ+ Protections	\$223,849	\$2,686	<.0001***	2,922
Older Applicants (Age 62+)	States With LGBTQ+ Protection	\$331,459	\$1,951	<.0001***	43,762
Applicants Age 62+ In states with LGBTQ+ Protections	States Without LGBTQ+ Protections	\$226,152	\$1,947	<.0001***	3,608

n = 138,863

p<.05*, p<.01**, p<.001***

Table 4. Post-Hoc Results Table

[1] Funded is used to describe the process of completing the application and funds are disbursed.

[2] LGBTQ Protection Law Defined as states that have explicit housing laws that are meant to protect members of the LGBTQ community. These were accessed by visiting the Human Rights Campaign website.

CONCEPTUALIZING CRITICAL THINKING FOR DEVELOPING THE NEXT GENERATION OF BUSINESS LEADERS

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Key words:

Communication, Business Curriculum, Foundation of Critical Thinking

INTRODUCTION

Employers rate “critical thinking” as the most important career readiness competency needed by college graduates, according to research conducted by the National Associations of Colleges and Employers (2022). Knowing this is desired by employers, instructors (at all levels) commonly ask students to “think critically”. Yet, a study conducted at Oxford, suggests that “as with any skill set, if students are to develop the ability to think critically, they must grasp what that entails, they must be given guidance as to how they should practice it and they must be given time to develop their proficiency in it.” (Cosgrove, 2011). However, the majority of students can’t conceptualize what “critical thinking” means or how to think critically. The Oxford study also suggests, “critical-thinking strategies are more likely to be internalized by students if those strategies are taught explicitly and systematically” (Cosgrove, 2011).

Therefore, this study provides an explicit and systematic way to approach critical thinking in higher education and specifically business curriculum, as well as a framework that can be used throughout one’s career. The purpose of this conceptual paper is to (a) provide students and professionals a tool to conceptualize critical thinking, (b) provide faculty a systematic way to assess critical thinking, and (c) propose how to examine the extent to which a conceptualized

critical thinking model improves student's critical thinking competency and faculty's ability to assess critical thinking.

LITERATURE REVIEW

Defining critical thinking is difficult when even the theorists have differing views on the specifics of what critical thinking entails. Ask a student or faculty member to define critical thinking and answers will vary and likely be vague (Cosgrove, 2011; Crenshaw, Hale, Harper, 2011). This unclear understanding of what critical thinking is obscures the ability of faculty to explain, teach, and/or expect critical thinking. Thus, not fulfilling employers' demands for business leaders who think critically. Therefore, models have been developed to help aid efforts with a definition and framework of critical thinking, such as the Paul and Elder Critical Thinking Model that outlines (1) the Elements of Thought to help develop the thought process, (2) Intellectual Standards as standards used to evaluate the thinking, and (3) Intellectual traits that are developed by using the framework (Paul and Elder, 1990). This framework has been very helpful at providing a guide for critical thinking.

Critical thinking evokes a perspective that is not a typical way of thinking about something and involves examining a phenomenon from a new perspective, angle, or even disposition. Asking someone to 'think critically' involves suspending (or postponing) typical belief or perspective and going to a different place of analysis, whereby the purpose is to ask questions of an experience or perspective that has never been asked before and cannot be answered with the existing knowledge base; therefore, new knowledge can be gained via reflection and processing to make sense of the (potentially) transformative experience.

However, in practice, as we have tried to implement this framework in the classroom with questions guided by the elements of thought and rubrics guided by the intellectual standards, we get common student responses similar to those discussed in Cosgrove (2011). Students comment that applying the critical thinking framework distracts them from "grasping" the content of the course. Though the ideal goal is to apply the framework as they are learning the content; with eight elements, nine standards, and eight intellectual traits, students can't easily internalize the tool. Therefore, it reduces their likelihood to use it as a tool to deepen their understanding and evaluate their thinking. According to the Cosgrove (2011) study, being able to internalize the approach to critical thinking with explicit and systematic tools improves the likelihood of use.

Additionally, the National Association of Colleges and Employers defines Critical Thinking as the ability to "Identify and respond to needs based upon an understanding of situational context and logical analysis of relevant information." This definition is more practical focused and is the focus of the *3-Cs Conceptualized Critical Thinking Model* which can be used not only in classrooms but upon graduation and throughout one's professional career regardless of discipline. This model involves examining a set of *raw data* and transforming it into useful *information* (i.e., calculate), drawing conclusions and interpretations from the information (i.e., clarify), and developing and communicating action plans (i.e., communicating) for enabling further success/progress. Most students and professionals can perform simple calculations; fewer can clarify the answer with a comparison to expected, competitors, benchmark, or other intended measure to determine the impact of the results. And even fewer can communicate an action plan for further improvement. The *3-Cs Conceptualized Critical Thinking Model* helps users meet this career expectation by

leading users to perform the analysis (Calculate), evaluate the logic of the analysis (Clarify), and prepare a response to meet needs based on the situational context (Communicate).

CRITICAL THINKING TOOL

Everyone from college students, senior managers, to top executives perform various calculations, gather information, or review reports as part of decision making. According to Easterling and Barthel (2022), performing a calculation(s) or gathering results is simply the first step in the overall critical thinking process. The *3-Cs Conceptualized Critical Thinking Model* (Figure 1) is a tool that can be used across one's career—regardless of discipline—as an approach to mastering critical thinking.

- **Perform the required Calculation(s)** - This step generally involves applying mathematical computations to a set of raw data, pulling data from a report, and can even include gathering/quantifying qualitative data. Before performing calculations, steps should be taken to ensure data are accurate, reliable, and relative to the decision. Performing calculations with poor data (inputs) leads to unreliable results (output) that can subsequently lead to poor decision making (Steps 2-3), which is often referred to as “*garbage in...garbage out*” (GIGO). The outcome of calculations yields useful information for decision making.
- **Clarify the results** - This step includes interpreting the calculation results. Answering what are the key takeaways and answers to key questions for making the decision. For example, clarify could include comparing the calculate to prior and current internal goals; benchmarking external competitors to gauge overall industry competitiveness; evaluating results compared to project timelines goals and plans; assessing risk; evaluating timing trade-offs; measuring success of mitigation plans; and seeking input/feedback from other functional areas, etc.
- **Communicate an action plan** - This step provides an opportunity to explain what follows logically: improvement plans, initiatives, decision recommendation, etc. This step is especially important as organizational leaders must continually implement improvement initiatives to drive higher levels of performance. Additionally, organizational leaders must ensure all employees understand their individual role in contributing toward functional (i.e., team), strategic business unit, and corporate goals. It is essential to also communicate externally with downstream (towards end customers) and upstream (towards suppliers) in a collaborative manner so that plans can be synchronized across trading partners.

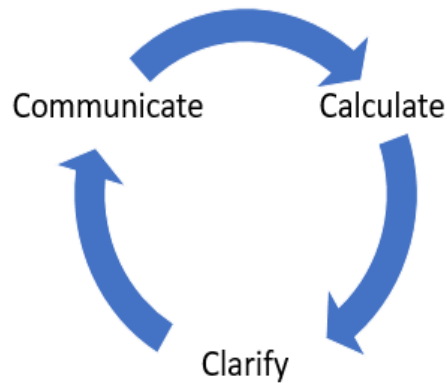


Figure 1. 3-Cs Conceptualized Critical Thinking Model

Implementing the tool. This tool is simple in nature to help it be easily implemented in the classroom so that students can internalize the thinking process and take it with them into their professional careers. Three keyways to implement this strategy is to:

1. Embed the 3 C's into the teaching of the content and class discussion.
2. Ensure assignment questions encompass all 3 C's, requiring students to progress through all three Cs.
3. Assess student work using the 3 C's with rubrics and/or assignment criteria

The best way to introduce the 3 C's is for the professor to model the thinking when teaching content. For example, an Accounting lesson on the breakeven point or market reach can be expanded beyond the Calculate. Include in the content discussion Clarify. Discuss what would also need to be considered to determine if the breakeven point or market reach is improving (or worsening), what underlying assumptions need to be considered, or how it might impact the next decision. Then continue on with Communicate. Discuss what the company should do, what would you recommend as next steps. The example of thinking model by the professor is a key to students' success with this tool.

Another way to implement this tool into the classroom is to adapt what is already being assigned to add labels and questions appropriately to ensure students are being asked to Calculate, Clarify, and Communicate. This approach serves two purposes (1) cue the students to what they need to think about and evaluate as shown in Table 1, and (2) cue for the student that they are thinking critically, and they will be able to internalize the steps to critical thinking. Textbooks often ask students to calculate and some may ask them to clarify or communicate. But rarely will they ask all three and will not be labeled as such. But the intentional effort to ensure students know they are to include a clarification and communicate is key to students continuing with the habit of not just providing calculation or answering questions but to go deeper.

For example, in a Supply Chain case study on Economic Production Quantity (EPQ), students were given illustrative data of a company they were familiar with and asked the following questions to ensure students were asked to not just Calculate but also Clarify and Communicate.

	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9
		Annual Demand (<i>D</i>) in Gallons (all flavors)	Production Rate (<i>p</i>) per day	Consumption Rate (<i>u</i>) per day @ 365 days/yr.	Setup Cost (<i>S</i>)	Holding Cost (<i>H</i>)			
	GIVEN	(Multiply Column 1 x Annual Demand (all flavors)	GIVEN	(Divide Column 2 / 365)	GIVEN	GIVEN	Perform EPQ mathematical equation	Divide Column 7 / Column 3	Divide Column 7 / Column 4
Flavor	% of Annual Demand	Annual Demand by Flavor (Gallons)	Production Rate (Gallons per day)	Daily Consumption Rate (Gallons)	Setup Cost	Holding Cost (per unit)	Economic Production Quantity (EPQ)	Production Length (# of days)	Consumption Length (# of days)
Original Ale-8	72%		60,000		\$3,000	\$0.55			
Ale-8 Zero Sugar	7%		60,000		\$3,000	\$0.55			
Caffeine Free Ale-8	6%		60,000		\$3,000	\$0.55			
Cherry	5%		60,000		\$3,000	\$0.55			
Cherry Zero Sugar	3%		60,000		\$3,000	\$0.55			
Orange Cream	5%		60,000		\$3,000	\$0.55			
Blackberry	2%		60,000		\$3,000	\$0.55			
	100%								

$$EPQ = Q_p = \sqrt{\frac{2DS}{H}} \sqrt{\frac{p}{p-u}}$$

Figure 2. Economic Production Quantity (EPQ) table

Case Study Example Questions with 3C's Labels:

- **Question 1 (Calculate):** Complete an EPQ table for the optimal production quantity of each flavor of Ale-8 soda.
- **Question 2 (Clarify):** What observation(s) can you make regarding the relationship between annual demand and EPQ quantity and the # of days of production required?
- **Question 3 (Clarify):** Interpret the meaning of Column 8 & Column 9.
- **Question 4 (Clarify):** What are some actual factors that could cause the # of days produced to vary with the theoretical EPQ calculation? What kinds of analysis would be helpful for understanding differences between EPQ calculation (i.e., # of production days planned) vs. actual # of production days required?
- **Question 5 (Communicate):** What types of communication and coordination could / should be done with other internal departments as well as with external suppliers in terms of planned production per flavor?
- **Question 6 (Communicate):** Explain the relationship between EPQ quantity and Setup Cost. If Setup Cost goes up (or down), does EPQ quantity go up (or down)? Hint: answering this question using a simple Excel table is highly effective.

The third way to implement the tool is through the criteria and rubrics used to assess student work. Another example from Accounting is using the tool as a rubric to help students evaluate their thinking. The students were assigned a budget variance case study and given the following rubric:

<i>Criteria</i>	Rating			
	Missing	Good (C)	Better (B)	Best (A)
<i>Calculate</i>				
Data used was <u>reliable</u>				
Data used was <u>relevant</u>				
Calculation was <u>accurate</u>				
Answer was clearly labeled and emphasized				
<i>Clarify</i>				
Focus is on the important, not the trivial - <u>Significance</u>				
Conclusion is <u>fair</u> by considering multiple perspectives, and not self-serving.				
Conclusion is <u>logical</u> , no contradictions				
Analysis considered multiple complexities and factors (<u>Depth</u>)				
<i>Communicate</i>				
<u>Precise</u> and to the point				
<u>Relevant</u> to the decision at hand				
<u>Accurate</u> and free from error				
Conclusion and Recommendation is <u>clear</u> for next steps				
Total Points				

METHODOLOGY AND NEXT STEPS

To examine the extent to which a conceptualized critical thinking model improves student's critical thinking competency and faculty's ability to assess critical thinking two experiments will be conducted. First, to examine the student achievement using the tool, a t-test will be used to determine if there is a difference in critical thinking scores between (a) a group of undergraduate students who were given the 3C's tool versus (b) a comparable student group who were not given the tool for their response. The responses will be evaluated using a five-point Likert scale by three faculty raters based on whether the responses achieved the NACE definition of critical thinking.

To examine the extent to which a model assists faculty's ability to assess critical thinking a second experiment will be conducted to test if a significant difference in ease to assess score between two faculty rater groups (one with a 3 C's rubric and one without a 3 C's rubric). All of the student responses from the non 3 C's student group will be used for this second experiment. The faculty raters will be different from those used in the first experiment. Two faculty members will be given a 3 C's rubric and the other 2 will have the NACE definition as a basis for their rating. The NACE rating provides a vague definition of critical thinking thus it provides a focus on critical thinking without the specific 3 C components.

CONCLUSIONS

Preparing business leaders ready to succeed in a fast-changing global business environment requires teaching content (i.e., theories, tools, models, etc.) and teaching critical thinking skills to be able to apply the content knowledge to new problems and decisions. Given time constraints (i.e., semester terms, course matriculation, etc.), deciding the right balance of content and teaching students "how to think" often becomes a trade-off in the classroom. According to NACE, aspiring business professionals must have the ability to think critically. However, conceptualizing and internalizing what that means has been difficult for students. Therefore, the *3-Cs Conceptualized Critical Thinking Model* provides an explicit and systematic way for faculty and students to use to build this essential skill.

The tool guides users through the analysis and evaluation of thought. Starting with the calculation or review of data/results and evaluating the reliability of sources and accuracy of calculation. Then, being able to interpret (clarify) the meaning and results of analysis adds significant context to business acumen. Finally, the ability to develop and implement (communicating) actions plans (i.e., a strategy) that move the company closer to its goals is what all employers want. The *3-Cs Conceptualized Critical Thinking Model* can be taught in classrooms at all levels to help develop the next generation of business leaders.

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INTERPRETING MISSION STATEMENTS AS INPUT TO ANALYZING SUPPLY CHAIN STRATEGIC FIT

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INTRODUCTION

Significant research exists on the purpose and importance of company mission statements. Less is written on the context of interpreting mission statements for the purpose of identifying firm business strategy (price leadership or some form of differentiation) using key words. Almost no research exists on interpreting mission statements as strategic input to supply chain performance modeling. Supply chain functional strategy varies depending on a firm's business strategy. For example, a firm that competes on price typically has higher inventory turnover, whereas a firm that differentiates often has lower inventory turnover. As such, correctly assessing company business strategy (via the mission statement) is a major contributor to higher validity in empirical research efforts.

A mission statement is in essence is peak into a firm's identity—the product (or service) offered (the 'what') and the market they are intending to serve (the 'who'). The interpretation of mission statements is something altogether different, and a challenge that still persists even after four decades. Pearce (1982) stated that “not only does the company mission embody the strategic decision makers' business philosophy, but it reveals the image the company seeks to project, reflects the firm's self-concept, and indicates the principal product or service areas and the primary customer needs the company will attempt to satisfy.” (pg.15)

Pearce and David (1987) shared that an effective mission statement defines the fundamental unique purpose that sets a particular business apart from other firms of its type and identifies the scope of business operations. “A mission statement provides the foundation for priorities, strategies, plans, and work assignments. It is the starting point for the design of managerial jobs and structures.” (pg.109) In short, a mission statement specifies the fundamental reason why an organization exists and includes the target market and customers as well as the principal identification of products and/or services that differentiate and make it unique.

Much newer research continues to highlight the association between mission statement and organizational performance. Min et al (2020) compared the predictive performance of mission statements on firm financial and operational performance, and concluded that “mission statements provide a direction for organizations, and these statements plan an especially salient role when organizations aim to achieve various outcomes” (pg. 861)

LITERATURE REVIEW

As stated in Chopra and Meindl (2016), strategic fit refers to the alignment of supply chain functional strategy with firm business strategy. Per Figure 1, a company identifies a particular customer segment (e.g., value-oriented or highly-discerning customers) it seeks to satisfy, and then develops an overall business strategy to fulfill that segment via a price leadership or differentiation business strategy (e.g., innovation, product/service customization, superior quality, exceptional customer service, etc.). Companies achieve strategic fit by ensuring their supply chain capabilities align, enable, and support the overall firm business strategy. While it is important for a firm to choose the business strategy which best satisfies its target market, it is essential to ensure supply chain functional alignment (ideally all departments should focus on functional alignment).

Alignment infers that the supply chain functional departments (supply chain professionals encompassing the entire SCOR Model) are working in unison in support of the firm's overall business strategy. The Supply Chain Operations Reference (SCOR) Model is a comprehensive framework for evaluating and improving overall supply chain performance and provides standard process definitions, terminology, and metrics to enable—companies to benchmark themselves against others. (Stewart, 1997).

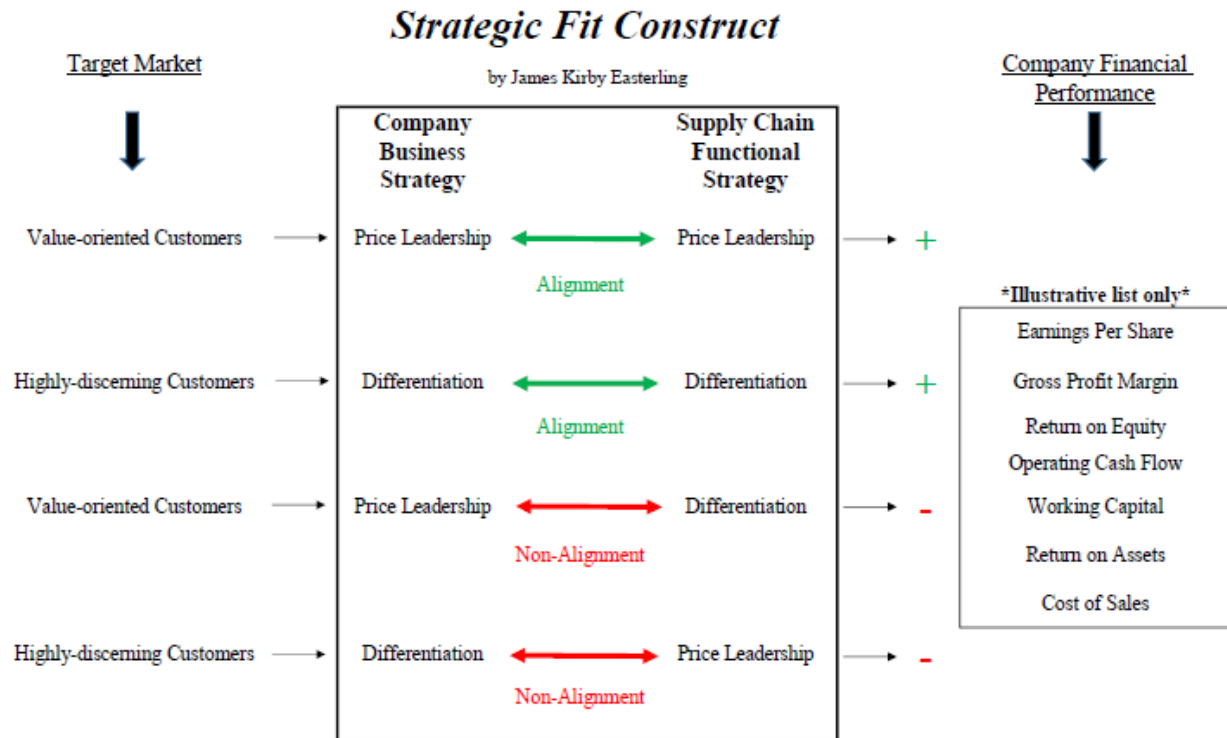


Figure 1. General Construct

DATA

Finding, identifying, and interpreting mission statements is not as straightforward as it may seem. As per the seminal Pierce and David (1987) article, mission statements are often listed under a variety of different headings and names, such as ‘statement of purpose’, ‘defining our business’, ‘about us’, ‘statement of philosophy’, and ‘our business purpose’, among others. Mission statements are typically found on a company website and/or annual report, yet still are disguised under a myriad of different headings.

The Global Industry Classification System (GICS) is a system for classifying industries by the type of activity in which they are primarily engaged with a six-digit code (Scribd, n.d.). The GICS industry classification system was developed to classify all S&P companies into 11 sectors, 24 industry groups, 69 industries and 158 sub-industries. The GICS industry classification system makes it easier for analysts and researchers to compare financial performance across similar companies. The focus of this study is the GICS 20 Industrials sector which is comprised of the following industries: 201010-Aerospace, 201020-Building Products, 201030-Construction & Engineering, 201040-Electrical Equipment, 201050-Industrial Conglomerates, and 201060-Machinery.

Given the massive number of firms included in the GICS system—and to avoid any potential bias from unintentional non-random company selection—this study evaluated industrial firms in the Vanguard Industrials Index Fund Admiral Shares (Vanguard, n.d.). According to the Vanguard website, “*this index fund offers exposure to the industrials sector of the U.S. equity market, which includes stocks of companies that convert unfinished goods into finished durables.*” The Vanguard

Industrials Index Fund Admiral Shares (VINAX) index fund includes 354 industrial companies across the GICS sectors listed above, with well-known companies such as Boeing, John Deere, 3M, Lockheed-Martin, Dover, General Electric, Caterpillar, and Northrop Grumman.

METHODOLOGY

The ability to interpret mission statements is a major input to empirical research that helps answer the research question of whether alignment between supply chain functional strategy and overall firm business strategy leads to higher value appropriation (i.e., improved financial results). The method of evaluating mission statements for concluding price leadership, differentiation, or a conflicting business strategy was implemented by identifying mission statements for each company in the study (heavy industrial companies in Global Industry Classification System (GICS) segments 201010-201060). A conflicting mission statement, for example, is a firm that is perceived as having components of both price leadership and differentiation business strategies in which the rater(s) could not reach a conclusion in terms of the firm’s overall business strategy. Research assistants collected the mission statement for each firm included in the study, whereas MBA students taking an intensive 800-level graduate course in Global Supply Chain Management did the actual interpretation of firm specific business strategy.

Each MBA student interpreted and assessed the mission statement of each assigned company using key words provided by the researchers (see Figure 2). Business faculty members at a large comprehensive regional university and a major research university collaborated on establishing key words for identifying both price leadership and differentiation. No one singular word was used by the MBA students to conclude firm business strategy; rather, each MBA student read the entire mission statement for each assigned company and concluded price leadership, differentiation, or conflicting strategy based on the overall mission statement context.

	<u>Price (cost) Leadership</u>	<u>Differentiation</u>
Key identifier words for assessing Business Strategy from firm Mission Statement	Efficiency, productivity, waste reduction, lean, value-oriented, cost-conscious, infrastructure optimization, lowest cost, bargain-priced, make-to-stock, selection, variety, price leader, budget-oriented, thrifty, discounted, savings, family, low prices, cost optimization, etc.	Premium, premier supplier, distinctive, unique, custom, customized, customizable, make-to-order, superior quality, empowering innovation, exceptional customer experience, offering customer-specific solutions, differentiated, leading-edge technology, etc.

Figure 2. Price Leadership vs. Differentiation key identifier words

To reduce any potential bias a student(s) may have had with companies in the study, the name of each company was hidden so that each company’s mission statement was independently evaluated without any preconceived impressions. Upon identifying company operating strategy for each firm, categorical classifications were used by each MBA student to classify mission statements.

A total of 261 company mission statements were evaluated (interpreted). With 12 MBA students in the course, the options were to have each mission statement interpreted by 2, 3, 4 or 6 (all factors of 12) independent raters. Per Table 1, a 3x4 matrix (number of raters, number of rater pairs) was chosen which resulted in each MBA student individually assessing 63-66 firm mission statements, with each company’s mission statement assessed by three MBA students. Students were given two hours to assess their assigned company mission statements in a controlled classroom setting

with no ability to collaborate, thereby requiring each student to independently conclude price leadership, differentiation, or conflicting firm business strategy.

Interrater Reliability Matrix (options)

<u># MBA students</u>	<u># raters</u>	<u># rater pairs</u>	<u># companies interpreted</u>	<u>average # mission statements evaluated</u>
12	2	6	261	44
12	3	4	261	65
12	4	3	261	87
12	6	2	261	131

Table 1.

Upon conclusion of identifying business strategy for each firm, categorical (non-numeric) classification (0 = price leadership strategy; 1 = differentiation strategy; 2 = conflicting strategy) were used by each MBA student to classify each mission statement that he/she evaluated.

RESULTS

Interrater reliability is a concern in research studies because people interpret things differently (McHugh 2012): “Researchers are expected to measure the effectiveness of their training and to report the degree of agreement (interrater reliability) among their data collectors. Reliability of data collection is a component of overall confidence in a research study’s accuracy.” (pg.276) McHugh shares that if raters are well trained [such as SCM students in an MBA class trained on overall firm strategy interpretation], the researcher may safely rely on percent agreement to determine interrater reliability. Table 2 summarizes the results of the mission statement interpretations, with 44.83% of the MBA students reaching full agreement on the overall firm business strategy, 53.26% reaching partial agreement, and 1.92% reaching no agreement.

In addition, moderate level of agreement is achieved with 35-63% percent agreement, strong level of agreement is achieved between 64-81% and near perfect level of agreement is achieved with > 81%. Per Table 3, this study achieved 80.33% percent agreement, which is approaching the >81% threshold for near perfect level of agreement. However, high interrater agreement does not necessarily mean students have interpreted the overall firm business strategy *correctly*, rather, it simply means there is a high degree of *consistency*.

Summary of Mission Statement Strategy Interrater Reliability by MBA Students

	<u>Classification</u>		<u>Rater Pair #1</u>	<u>Rater Pair #2</u>	<u>Rater Pair #3</u>	<u>Rater Pair #4</u>	<u>Total (#)</u>
Companies in which 3 of 3 MBA students each interpreted the same overall firm business strategy (ex three-0s, three-1s, three-2s)	Full Agreement (100% agreement)	# of companies	23	37	30	27	117
		% of companies	36.51%	56.06%	45.45%	40.91%	44.83%
Companies in which 2 of 3 MBA students each interpreted the same overall firm business strategy (ex. two 0s, two-1s, two 2s)	Partial Agreement (66.67% agreement)	# of companies	37	27	36	39	139
		% of companies	58.73%	40.91%	54.55%	59.09%	53.26%
Companies in which 3 MBA students each interpreted a different overall firm business strategy (i.e. uninterpretable): ex. one-0, one-1, one-2	No Agreement (0% agreement)	# of companies	<u>3</u>	<u>2</u>	<u>0</u>	<u>0</u>	<u>5</u>
		% of companies	4.76%	3.03%	0.00%	0.00%	1.92%
			63	66	66	66	261
			100%	100%	100%	100%	100%

Table 2.

Interrater Reliability Results

<u>Classification</u>	<u>Total # of Companies</u>	<u>Weight</u>	<u>Extended Value</u>
Full Agreement (100% agreement)	117	@ 100% agreement	117.000
Partial Agreement (66.67% agreement)	139	@ 66.67% agreement	92.6713
No Agreement (0% agreement)	5	@ 0% agreement	0.000
	261		209.671
		Study Percent Agreement:	209.671 / 261 = 80.33%

Table 3.

IMPLICATIONS & NEXT STEPS

This ongoing research has significant implications for the field of supply chain management (as well as other departmental functions) as operational, tactical, and strategic actions and decisions vary depending on how a firm competes (price leadership or differentiation). This study has major implications for empirical supply chain research. To date the concept of ‘strategic fit’ has largely been theoretical and lacking quantitative analysis. By developing an approach for analyzing mission

statements, multiple studies can be conducted examining a range of supply chain strategy proxies (e.g., inventory turnover, cash conversion cycle, etc.) to analyze the impact the overall supply chain function has in driving higher levels of value appropriation.

With having firm business strategies for a specific industry defined through mission statement interpretation, the next steps are to define a proxy(s) for supply chain strategy. Inventory turnover is one option, as it is a well-known supply chain performance measure in which financial data (i.e., cost of goods sold, value of inventory, etc.) for publicly traded companies are readily available through various databases such as CompuStat. Regression modeling can then be used to analyze the relationship between firm business strategy (independent variable 1) and inventory turnover (independent variable 2) to assess whether higher levels of strategic fit is associated with higher levels of value appropriation (dependent variable).

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PLANNING FOR CAREER SUCCESS: NAVIGATING THE PATH FROM STUDENT TO GAINFULLY EMPLOYED

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Introduction

Significant research exists in terms of how organizations compete. Researchers have expounded theories on various business strategies and the operational, tactical, and strategic plans required to achieve aspirational goals and objectives. As is commonly referenced throughout the business world, a goal without a plan is a wish. Colleges, universities, vocational schools, and other educational institutions focus heavily on teaching students content relevant and required for their chosen profession (i.e., accounting, supply chain, law, etc.). Just as every business goal should have a detailed plan of action (i.e., a strategy), aspiring professionals should have a detailed plan of action for transitioning from ‘student’ to ‘gainfully employed.’ A combination of a targeted résumé and an effective interview strategy is essential.

This research paper identifies key enablers in achieving career success by transitioning from an anticipatory (reactive) to responsive (proactive) model for job searches. Anticipatory business models can be defined as those that produce product (i.e., build inventory) in advance of receiving firm customer commitments, thereby exposing the firm to potential obsolescence (write-offs) by customer demand not materializing. Responsive models are those that limit or delay production until targeted customer commitments are received, thereby minimizing financial exposure to the

firm. These same implications to aspiring professionals in their job search are uncanny in that job seekers should also have a responsive (proactive) approach to landing a specific position by having a targeted résumé and a detailed interview strategy.

This paper will first briefly review the literature surrounding job preparation via résumés and interviewing. Then, the authors will present guidelines for the creation of error-free, dynamic résumés and preparing to stand out in an interview. All of these guidelines have been integrated into student instruction, curriculum, and encouraged actions over the past five years at an AACSB accredited regional university and have generated highly positive employer reactions.

Literature Overview

A résumé is an essential tool for any jobseeker, and as such is a major component included in most all business curriculum and applicable textbooks (Moshiri & Cardon, 2014). A well-crafted résumé is essential, as it provides a summary of qualifications and establishes the first impression in the employment process. Throughout the literature, several key points surrounding résumé preparation have emerged. The use of active voice, action words, simple, high-contrast layouts, and the quantification of accomplishments are common themes standing the test of time (Diaz, 2013; Smart, 2004). Further, grammar, spelling, and general writing mechanics to the point of perfection remain imperative (Martin-Lacroux & Lacroux, 2017). In fact, one particular study found that hiring officials preferred résumés with less experience and no errors as compared to more experience with errors included (Charney et al., 1992).

However, it should be remembered that the résumé is only a first step in the employment process. The goal of a résumé is not to secure a job offer on the spot, as it is unreasonable to think that a recruiter or hiring manager would review an application and offer a job from only textual information. Rather, the purpose of the résumé is to directly match qualifications to requirements and create interest which leads to the offer of an interview.

Interviewing is inherently stressful for a number of reasons: the key participants typically have not met before, the interview questions are unknown to the job seeker, and often there is an asymmetrical disadvantage in that the interviewer(s) almost always has a knowledge, experience, and/or information advantage. McCarty et al. (2004) highlight these very points by sharing that

applicant anxiety has serious implications, as it may bias the predictive validity of job interviews and result in the selection of less promising candidates. For example, high levels of anxiety may result in a low job interview score, in spite of the fact that the candidate may demonstrate superior on-the-job performance if hired (pp. 608).

These challenges are further complicated by a larger percentage of initial interviews now being conducted in virtual settings due to limited recruiting budgets and small staffs, travel restrictions, social distancing, quarantining, etc.

Connecting Literature to Action

While most all business curriculum integrate both assignments and classroom activities to develop a résumé, many times the mistakes that remain keep students from moving forward in the employment process. Recent research indicates that hiring managers spend an average of only

about six seconds reading a résumé and about 70% of employers say that personal deal-breakers of theirs were enough to reject a candidate before they even finished reading a résumé (Kolmar, 2022). Further, professionally written résumés have the power to do more than just land an interview; they can also boost earning potential by 7%. The power of a résumé is undeniable, and the following tips are offered:

1. Focus your résumé to show why you are the **best candidate for this particular position**, not just in general. Move away from the mindset that one cookie-cutter résumé can be identically used from one job posting to the next. Look through the job posting and the organization's website to pull key words, skills, and requirements and use those terms verbatim. Often, résumés are initially reviewed by artificial intelligence within the application system and including these key words may improve chances of next round review. Keep in mind that the experience, education, and skills included will likely be dictated by the position.
2. Make sure to **include details**; do not sell yourself short. Many times, not enough information is listed to fully encapsulate all that has been accomplished in experience or education. For example, when listing education, it would be a disservice to only include the school's name and degree. Think about including important details including academic awards, expected graduation date, relevant coursework completed, important presentations given, projects completed, university accreditation status, and GPA. As a rule of thumb, if one does not include their GPA, a recruiter will likely assume it is poor.
3. **Do not lie** about education, experience, or skills. More likely than not, the lie will be uncovered either upon an initial read or within the interview process and can be embarrassing and ultimately a waste of time. Further, many employers' policies are such that if a misrepresentation is discovered after-the-fact, employment may be terminated.
4. Use a **simple, direct writing style**. Write short phrases rather than long sentences and start those phrases with action words (e.g., created, managed). Remember that the tense of the verb chosen should match whether the action *has been* (in the past) or *is* (currently) being done. Writing briefly and directly does not mean writing vaguely; include all important details and any relevant keywords or industry-specific details. There should not be any large blocks of text within the résumé. The document should maximize effectiveness of words used to be easily skimmed.
5. Use the **chronological approach**, listing information from the most recent item to those that happened further in the past. Research confirms that this approach is most preferred by recruiters and hiring manager and can lead to positive application perceptions (Smith & Berg, 2020). Traditionally, the chronological approach lists work experience as the first section; however, the first section included should always be what the individual applicant deems as the most impactful.
6. Keep it **concise**. As a rule of thumb, if you have fewer than five years' experience, the résumé should be limited to one page. Focus on higher level jobs, pertinent years of education, and any technical skills that directly relate to the position. Need more room?

Remove any objective statement (or similar) from the résumé—it is not needed and often considered “fluff.” Of course, if industry standards demand otherwise, follow those protocols, and include all requested information.

7. Ensure the résumé is *error-free*, as errors are seen as carelessness in the eyes on an employer. The layout of the document should be clean, professional, and easy to skim. The design should use clear, clean heading that visually separate all sections. Itemize list information and remember to always avoid large blocks of text.

Interviewing is a combination of ‘art’ (i.e., the storytelling) and ‘science’ (i.e., the facts). Interviewees may become more comfortable and competent over time by having an effective strategy which highlights strategic fit for the specific role as well as the organization. In preparation for interviewing, the following tips are offered:

1. Basic “*blocking and tackling*” skills are essential. Always arrive early and always bring extra résumés, as you will likely meet more people than expected. It is always better to over-dress than under-dress, so plan an outfit accordingly. The goal is to minimize anything that would become a distraction for either the interviewee or the interviewer. Immaculate personal hygiene is a must— “college hygiene” is not acceptable. Learn basic table etiquette, as interviews often involve a luncheon with other employees. Finally, a firm handshake and looking someone in the eye as one is speaking is a sign of confidence and character.
2. Know about the *organization’s history* (founding, major products/services, major achievements, growth plans, recent financial performance and leadership changes, events in the news, and any other important key points in the news) to convey a sincere interest in the company and a comprehension of recent key events.
3. Effectively express that you are not looking for a job, but rather an *opportunity*. For example, if one is interviewing for an internship, one might say something like “I want to use the programming skills I have developed in college and through prior experience in my internship to help the company serve customers more efficiently.” For an upcoming graduate, one might say “I’m nearing the completion of my degree in _____ and I want to start my career with a really innovative company.” Keep in mind, jobs and careers are not the same. A career progresses over time to higher levels of responsibility (and compensation). As such, never use the words ‘job’ and ‘career’ interchangeably. They are not the same.
4. Convey *professionalism* in all ways. Do not say unflattering things about current (or past) work experiences, coworkers, your university, degree program, professors, or classmates. Always accentuate the positives.
5. Speak directly about *ways to help the organization*. Most interviewees talk about how organizations can help their personal goals—reverse that! Tell the organization ways individual skills can help them! This is the key to effective interviewing. Ask about specific

organizational challenges and objectives, and then accentuate ideas for improvement.

6. Be sure and overtly convey *specific examples* (and/or strengths) in terms of each desired skill or competency listed on the job description. And use appropriate industry and/or specific functional language (e.g., supply chain) to gain credibility of commitment and mastery of concepts.
7. Have some *questions prepared and written down*. Interviews should always be a two-way street between the organization conducting the interview and the individual interviewing the organization. Some great questions include: What are the future growth areas (new products/services, new markets, expansions, etc.)?; What are some of the major objectives of the organization (quality, customer service, innovation, costs, new markets)?; Does the organization/management provide regular updates to employees on KPIs (key performance indicators)?; Does the company/organization provide ongoing training and educational incentives (e.g., tuition reimbursement)?
8. Always specifically *ask for the job* (assuming it is a good fit) at the end of the interview. Do not make the interviewer wonder if you really want it. An effective closing could include: “After all the interviews and learning more about your company and meeting so many talented people, I really want the position and know I can make a meaningful contribution.” Close strong!
9. Finally, it is key to remember that *desire often beats talent*. The smartest person is not always the most successful. Interpersonal skills, including ability to work with others, and dedication/commitment/perseverance matters! If you are the smartest person in the room, find another room. Never underestimate the importance of communication skills—to superiors, to peers, to direct reports, and importantly, persons outside of a firm if your role entails being in contact with the public at large, suppliers, customers, or other stakeholders. The ability to effectively communicate is often the difference between success and failure.

Conclusion

These tips on writing résumés and preparing for interviews are presented to improve the student experience when transitioning into professional careers. Moreover, these tips need not only apply to matriculating college students. Interviewing requires an ability to “tell one’s story” in a compelling and comprehensive way—albeit often in a short period of time. But generally, the preparation and presentation of a résumé precedes the actual interview. As such, it is not an “either or”, but rather, mastery of both that often leads to securing a highly desired position.

Of course, it would be irresponsible of the authors to claim that these tips are a “shoe in” and will guarantee success in the job search process; further, the direct success seen from integrating these tips into student instruction and curriculum may not generalize in all situations. However, these skills and tasks are an excellent starting point to help students gain a leg up against other applicants.

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FOSTERING COMMUNITY IMPACT: AN ACTIVITY TO PROMOTE VOLUNTEERISM AS A PART OF AN UNDERGRADUATE ETHICS EDUCATION

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Online learning, online pedagogy, volunteerism, ethics, ethics education

One Approach to Integrating Student Volunteerism in a Business Ethics Curriculum

Ethics education has long been recognized as a core part of a business education program. The Association to Advance Collegiate Schools of Business (AACSB), the leading international accrediting institution for business schools, holds as one of its guiding principles that member schools should encourage and support ethics and integrity in the professional and personal actions of their faculty, staff, and students (AACSB 2020). One component of ethics education is awareness of the broader social implications of business decisions.

Notably, the 2020 AACBS Standards also include a new component—Standard 9—Engagement and Societal Impact. This requirement tasks schools with demonstrating a positive impact on their larger communities. Incorporating a volunteerism requirement as part of a college ethics curriculum is a quantifiable, easily measurable way to work toward this standard as part of a comprehensive approach to ethics integration in a wider business curriculum. This is also consistent with research, as discussed below, that shows service-learning itself is an important part of a business ethics education.

This short paper discusses such a service-learning activity, the Colonel Character Volunteerism Challenge, which was recently incorporated in the Eastern Kentucky University College of Business' Ethics Awareness Week (EAW).



Figure 1. EAW 2022 Theme – Colonel Character

EAW is a biannual series of activities across the College of Business designed to increase integration of ethics education throughout the College. One of the great challenges of business ethics education is integrating ethics and ethical critical thinking across a business curriculum. Traditional course structures and time demands at the undergraduate level often see ethics pigeonholed into a single course. EAW is one effort to counter this, by increasing the integration of ethics education across courses and the entire college.

The Colonel Character Volunteerism Challenge assignment encouraged students to undertake volunteer activities in their communities. The time requirement was itself a modest burden on each individual student—3 hours of service within the prior year. After completing the work, students then completed the assignment by reporting their activities, time, and motivation by means of both a short survey and preparation of a Google slide. The survey provides an easily managed set of data for the project. The graphic slide gives an easy, relatable deliverable that can be shared with other students and the College as a whole. By making the results public and easily visible, this encouraged student discussion of community involvement and increased awareness of the impact that fellow students had on their communities. It also spotlighted numerous charitable and volunteer causes within the College's service area.

One current challenge to undergraduate business education is integration of online and in-person communities of learning. These communities too often co-exist separately. It is a continual challenge to ensure that online learners receive the same experiences as their in-person counterparts. This challenge was particularly true for EAW, which had traditionally taken place as an in-person conference not available to online students. The activity is one way to successfully bridge that gap. The Colonel Character Volunteerism Challenge was used across both online and in-person classes and gave the rare opportunity for cross-modal interaction.

In sum, the present activity provides a service-learning activity that is usable across both online and in-person modalities. A service-learning requirement itself is not a new idea. This activity builds on past research by creating a visible, measurable deliverable that can be shared between online and in-person platforms. The creation of measurable numbers related to student involvement, outside organizational involvement, and hours of service impact, can also be used to demonstrate community impact under AACSB Standard 9.

Literature Overview

The integration of service-learning projects as part of a business ethics education curriculum is well-established in the literature.

Service-learning through volunteerism as part of a business ethics course can connect real life problems with academic concepts and helps avoid an oversimplified approach to ethics sometimes seen in students entering business ethics classes (Kohls, 1996). Service-learning, i.e., volunteerism, can be an important part of the ethics component of a business education. Fleckenstien (1997) argued that community service, awareness, and membership through service-learning could play an important part of an education in business ethics.

In 1996, the Journal of Business Ethics published a special issue on, “Community Involvement and Service Learning Student Projects.” In that issue, Kolenko and colleagues (1996) identified three vital components of a successful service-learning project which remain relevant today—1) personal insight, 2) application of skills, and 3) understanding of social issues.

Following up on this, Amy L. Kenworthy-U’Ren, surveyed the literature again in 2006. She commented on the power of service-learning, stating that:

Today, we are asked to work together, with each other and our communities, to create an educational environment that more clearly reflects our constantly changing personal, social, and organizational lives. Service-learning can do just that. Service-learning, if conceptualized and operationalized well, has the potential to change our students’ educational experience. Through service-learning, students work with and learn from community organizations - they become partners in real-world positive change (pp.820).

On a broader level, ethics is key in educating students to understand the broad impacts that business has on wider society and further the role of business leaders as change agents (Colley, Morehead, & Perkins, 2015). Other research has shown that exposure to ethics as a component of a business education makes students more aware of and responsive to CSR issues. (Ugwuozor & Otu, 2020). Prior research has also suggested that a college-wide ethics awareness event can be a significant part of an integrated undergraduate program of ethics education (Spain, Engle, & Thompson, 2005).

Service-learning and volunteerism can provide a competitive advantage to business students in multiple ways, including a heightened understanding of classroom theories and improved communication skills (Tucker, McCarthy, Hoxmeier, & Link, 1998). Studies have shown that students have an interest in developing study and knowledge of corporate social responsibility and

that such interest positively correlated with prior involvement with nonprofit activities and volunteerism (Sleeper, Schneider, Weber, & Weber, 2006).

A multitude of research has shown that service-learning experiences beyond the classroom can significantly improve learning outcomes and have other positive effects. For example, student participation and interaction with managers in boundary-spanning social and environment projects has been indicated as being particularly rewarding for both managers and students, beyond a mere opportunity to apply and understand course content (Fougere, 2020).

More recently, attention has been turned to service learning in online platforms. For example, Falcouner (2021), determined one of the great difficulties in implementing service-learning in an online environment in any topic is assessment of the outcomes. This challenge is present in the current project, which seeks to provide an activity that is accessible to both online and in-person learning environments.

Colonel Character Volunteerism Challenge

As part of the larger College-wide Ethics Awareness Activities, students were tasked with performing at least three (3) hours of some sort of community volunteerism. They then reported their work with two deliverable products—a short online survey and a graphic slide that showed their activity and gave basic information about the cause or organization they assisted. The survey would provide data on the hours, participants, etc. in an easily accessed format. The slide provided a readily accessible graphic demonstration of students' good works and a jumping off point for further engagement.

Because of time demands on students, they were allowed to “count” activities previously undertaken within the prior calendar year. This was an attempt to overcome “workload issues,” one of the principal challenges identified in the literature to these type of undertakings (Kolenko, 1996).

To assist in completing the graphic portion of the project, the instructor posted a short video walkthrough of creating the graphic slide. The assignment itself is presented in full in the Appendix.

Methodology

The “Colonel Character Ethics Volunteerism Challenge” was made available to students attending both online ($n=145$) and in-person ($n=77$) sections of BUS 204: The Fundamentals of Business Law and Ethics. This course is part of the College's business core and is the required course fulfilling AACSB requirements for the legal and ethical environment of Business at Eastern Kentucky University's College of Business. This activity was presented to students as an extra credit activity, but participation was strongly encouraged in repeated course announcements.

Out of the 222 possible participants, 123 took part in the challenge, or 55% of eligible students. All told the participating students reported over 1,000 hours of service time to better their communities. Moreover, the slides were displayed on a rotating basis on the TV monitors

throughout the College during Ethics Awareness Week. This display sparked dialogue about the various organizations that students helped, and enthusiasm for the project.

Results

The results of the volunteerism survey indicated that of the participating students, 50% of them reported 1-5 volunteer hours (see Figure 2). Although only three hours were required for the assignment, many students went above and beyond, with 48% of students volunteering more than five hours. Only 2% of students, who were not anonymized from professor review when completing the survey, reported that they did not volunteer at all in 2022. In all, 124 unique reported organizations, charities, or groups benefitted from the student engagement generated from the assignment.

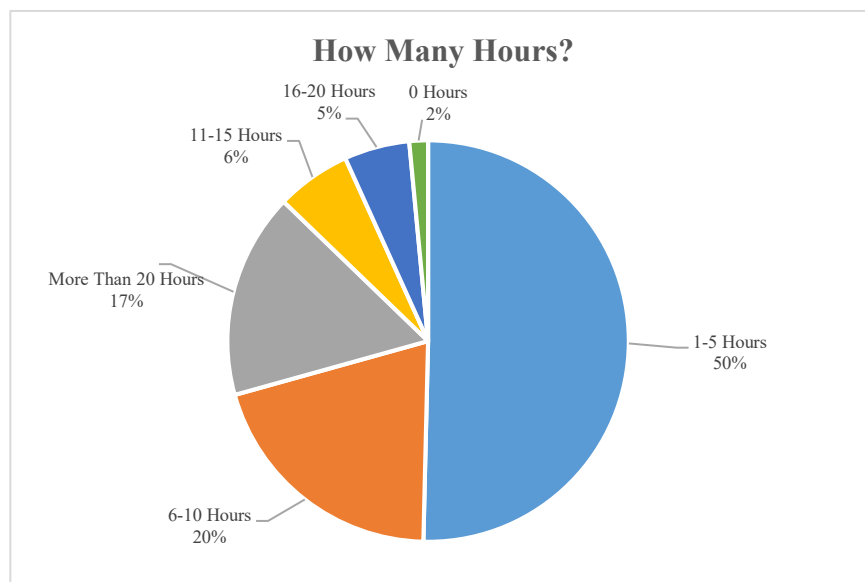


Figure 2. Number of Reported Hours Volunteered in 2022

The second part of the assignment required students to craft a Google slide describing their volunteer work and the perceived impact. Students were given a template for consistency and asked to include their name, class, name of volunteer organization, number of hours in service, a description of what they did, why it mattered, and what is next (i.e., future plans for volunteering). Students were also asked to include a relative image of their choice and a QR code linking to the organization's website or social media presence. Of the participating students, 119 submitted the slide per the assignment requirements.

The most intriguing results from these slides presented in the "Why Did it Matter?" component. Students innately recognized the need to help others, engage, and give back to their communities. Some of the more notable responses remarked that the volunteerism brought joy to others and a sense of fulfilment, hopefully igniting a spark to continue said outreach. A sampling of student slides is shown below in Figure 3.

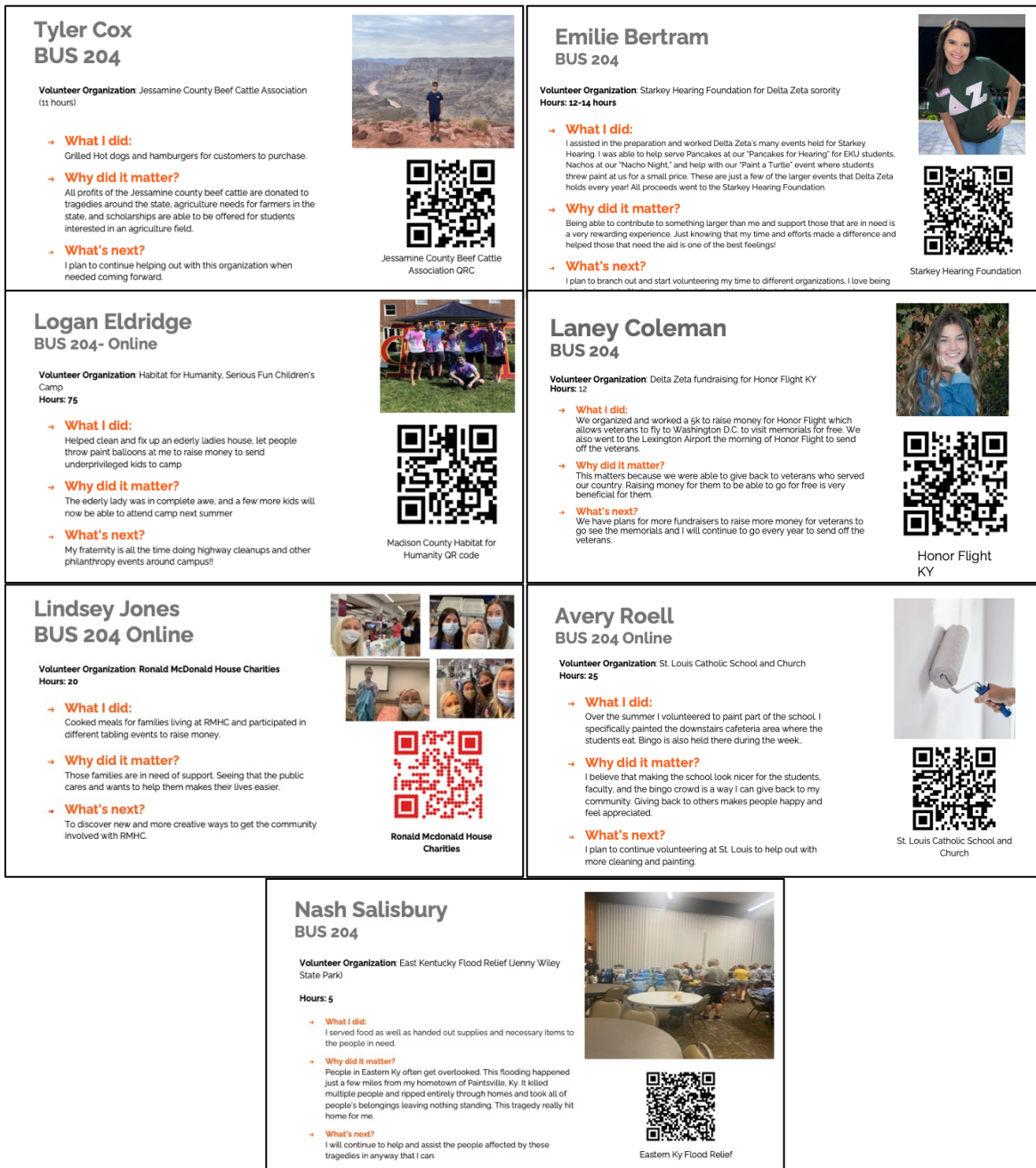


Figure 3. Sample Student Google Slides Describing Volunteer Activities

Conclusion

Overall, the inaugural Colonel Character Volunteerism Challenge was a success. At a minimum, the project documented over 1,000 hours of volunteerism impact that College students contributed throughout their service area. The activity was accessible to both online and in-person students and gave online learners one of several opportunities to participate in the College's Ethics Awareness Week.

However, there are clearly areas for improvement. Firstly, the response rate was disappointing. Future research will need to be directed as to the nature of low participation. It may be that the points assigned were simply not sufficient to incentivize participation. Particularly in the online course, where nearly 900 points were possible, some students may have determined to simply forgo the effort required for a mere 15 points. This may well be a flaw in the design of the activity. Alternatively, the “difference” of the assignment may have been a barrier. In a class with primarily written deliverables some students may have not been comfortable creating digital media. Perhaps most troubling might be the explanation that some students simply did not want to be involved in their communities. Future research on student motivations will be included in future surveys and greater incentives will be offered for future assignments.

As with all service-learning projects, there is also an inherent difficulty in measuring the impact of those donated hours, both to the organizations and to the students. Regardless, today’s students are, as much as ever, interested in engagement and impact with the world around them. Integrating volunteerism activities as part of a business ethics education has value not just for the student experience, but also holds the potential to impact the wider community. Today’s students are interested in having a positive impact on their communities and this desire can be focused and channeled through a well-designed volunteerism requirement.

Even just a few hours per student per semester, applied across an entire student population, generates a large impact across a community. It is hoped that this activity will serve as a jumping off point for further research and dialogue about how student volunteerism should be part of a business ethics education and the impacts these activities can have on our communities.

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Appendix – Ethics Assignment

The volunteerism project is now live! EKU's College of Business recognizes the importance of responsible ethical and social practices and duty that we owe to our communities and service area. EKU students make a significant impact in our community. As a way to encourage and recognize this impact, our course is participating in the EAW Volunteerism Project. This is a 15-point assignment for our class. The due date is October 29, 2022.

To complete the assignment, you need to document at least 3 hours of community service, volunteerism, or civic service you have undertaken in 2022. If you have not performed any such service, you will need to do so for the good of your community and to complete the assignment. The assignment has 2 parts

1- Complete the Attached Survey on your service

Link: <https://forms.gle/Fkc5ZsLpRpTCNmUF7>

or if you prefer, follow the QR code to the survey form:



2- Complete a graphical slide that will be added to EKU's EAW organization blackboard site to document the impact of your good works.

Select the Google Drive corresponding to your last name (*YOU HAVE TO BE LOGGED IN TO YOUR EKU GOOGLE ACCOUNT TO ACCESS THESE*):

A-E: https://docs.google.com/presentation/d/1BMYwYXsL31yvjs2pudqr4Scpdvw7i1K-jfxRTTr_5kg/edit?usp=sharing

F-L: https://docs.google.com/presentation/d/1179miED_d82TsfgVe68F3gsje_DgIZhqp-xQBgBnR14/edit?usp=sharing

M-R: https://docs.google.com/presentation/d/1XfYhkFZf_J3S5gJ8GeFbzyQpGQAvellrsR9jjRObDcM/edit?usp=sharing

S-Z: <https://docs.google.com/presentation/d/1qzI0eHTc4dRWEkzH5ia36VZXHAv47OyO6IMvS2gtgPw/edit?usp=sharing>

Follow the directions to duplicate a slide and then fill information about your service activity. *If you prefer not to use your photo, you may insert instead a photo related to your volunteerism work.* Please complete all areas on the slide including a QR code for the cause or organization you have helped so that others can learn about this community organization.

Thank you for all your good work in your community! If you have any questions, please email or post in the virtual office anytime.

ATTRIBUTES AND LEVELS OF SENIOR MANAGERS' UNDERSTANDING OF PROJECT PORTFOLIO MANAGEMENT WORK

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Introduction

Project Portfolio Management (PPM) is a discipline central to strategy implementation. Few empirical studies provide accounts of the key activities involved in PPM. Specifically, better insights need to be developed into the work that senior managers perform in PPM and into their competences. Current rationalistic approaches to the study of competence are limited because of their dualistic ontology. According to them, competence could be described as comprised of two separate components, some attributes that the worker possesses externally related to a list of work attributes. This research applies the interpretive research approach known as phenomenography to overcome this limitation. Phenomenography suggests that it is the meaning that work takes on for workers as they experience it that constitutes competence, rather than a set of attributes. Hence, the question that this study will research is: What are senior managers' conceptions of PPM work?

Analysis of the interviews with 32 senior managers revealed four different conceptions of PPM work, each with multiple attributes. The conclusions confirm the existence of a hierarchy of conceptions of PPM work of increasing complexity, richness and inclusiveness. This research

makes a contribution to the PPM literature by providing an interpretive understanding of what constitutes senior managers' competence in PPM.

Literature Overview

Archer and Ghasemzadeh (1999) define project portfolio as a group of projects that compete for the same resources and are carried out under the sponsorship or management of an organization. The components of a portfolio of projects can be measured, ranked and prioritized. It is at the portfolio level that priorities are identified, resources are allocated, and investment decisions are made (Levine, 2005). Cooper, Edgett, & Kleinschmidt (1997) define Project Portfolio Management (PPM) as a dynamic decision-making process, where a list of active projects is constantly updated and revised. PPM is therefore an approach to attaining the strategic goals of an organization by selecting, prioritizing, evaluating and managing projects, programs and other associated work, based on their degree of alignment to strategy (Cooper et al., 1997; Jeffery & Leliveld, 2004).

PPM has been identified as an effective discipline to drive strategy implementation (Clegg, Killen, Biesenthal, & Sankaran, 2018; Dietrich & Lehtonen, 2005; Meskendahl, 2010). As Clegg et al. put it (2018:763), "PPM acts as a bridge between strategy and projects". Many organizations rely on projects and programs to implement their strategies and therefore achieve company strategy realization (Morris & Jamieson, 2005). PPM allows firms to attain this goal by making explicit the connection between shared strategic goals, investment decisions and the allocation of resources (Jeffery & Leliveld, 2004; Levine, 2005); it also allows firms to ensure strategic fit of project portfolios through senior management involvement (Unger, Kock, Gemünden, & Jonas, 2012).

Portfolio management can be considered a subset of organizational governance. As stated by Derakhshan, Turner, & Mancini (2019: 98), "strategic decisions made at the organizational level are operationalized at the portfolio level ..." Successful PPM, therefore, requires understanding programs and projects in a strategic context, to be able to focus resources on the critical business priorities (Archer and Ghasemzadeh, 1999). Senior management gets involved in the translation of strategy into a portfolio of projects (Unger et al., 2012). It is the fundamental responsibility of senior managers to ensure that the corporation consistently selects the right projects, invests the right amounts of project resources, and establishes the right priorities in a continuously changing competitive environment. Every project investment either contributes to successful strategic execution or removes resources from successful strategic execution (Morgan, Levitt, & Malek, 2007).

The earlier PPM literature had noted the importance of stakeholders involved in PPM as keys to success (Blomquist & Müller, 2006; Kendall & Rollins, 2003; Levine, 2005); however, we still lack knowledge about the actor side of PPM (Mosavi, 2014). PMI-sponsored research has highlighted the role of managers involved in the governance of projects, in particular, the project sponsor (Müller, 2009). Beringer, Jonas, & Kock (2013) studied the behavior of internal stakeholders in PPM and its impact on success. Other studies have examined the role of senior managers in managing the project portfolio and concluded its relevance to project termination decisions, as well as to ensuring overall strategic fit (Unger et al., 2012). Recent literature reviews have shed some light on the roles and relationships of the key stakeholders involved in project management (Zwikael & Meredith, 2018) and project governance (Derakhshan, Turner, &

Mancini, 2019), which include senior managers. Although these studies show that the people side of PPM has started to gain traction, research on the overall role and key competences required for senior managers working in PPM remains limited (e.g. Gareis, 2000). This has been explicitly identified by several authors as an area to be addressed by future studies (e.g. Beringer et al., 2013; Jonas, 2010; Martinsuo, 2013).

PPM is becoming more mature as a discipline, and therefore, standards continue to further evolve (PMI, 2008; 2017). In the case of project management, the standards are widely used for assessing, developing and certifying professional competence (APM, 2019; PMI, 2021). The professionals who can demonstrate their comprehension of the project management principles included in the standards, are considered “competent” project managers. This view is representative of the rationalistic approach, where management competence is defined as a set of knowledge areas independent of individual and context (Sandberg, 2000). However, there is little evidence about how project managers use those knowledge areas to carry out their jobs. In the case of PPM, being a “younger” discipline, there is still little written about the attributes required in the PPM profession. Since PPM is a practical rather than theoretical discipline, senior managers’ competences and attributes need to be addressed, as well as their capability to integrate them in the context of their work. Based on the demands of PPM work, as well as the associated level of complexity, some senior managers may be better suited than others for effective performance in a PPM role. Next, we introduce the main approaches to the study of competence at work.

There are two main approaches to the study of competence at work: rationalistic and interpretive. In rationalistic approaches (Boyatzis, 1982; Spencer & Spencer, 1993), competence has been defined as an attribute-based phenomenon, consisting of a set of context-free attributes that workers use to perform their work (Sandberg, 2000). Superior performers are considered to possess a superior set of attributes (i.e. strategic acumen). The term attribute in this context means the knowledge, skills and abilities (KSAs) and personal traits people have and use to perform their job. The rationalistic approaches have been criticized for producing descriptions of competence that are usually fragmentary, thus providing little guidance to managers on how to develop competence. To overcome this limitation, this research leverages the interpretive research approach known as phenomenography.

Phenomenography suggests that “the meaning work takes on for workers in their experience of it, rather than a specific set of attributes, constitutes competence” (Sandberg, 2000: 9). Specifically, we need to understand how senior managers understand their work in PPM, since that understanding will determine how they use their knowledge, skills, abilities and other attributes in accomplishing their work (Sandberg, 2000; Sandberg and Targama, 2007). A worker’s conception (“people’s ways of experiencing or making sense of their world”, (Sandberg, 2000: 12)) of his or her work has an integrative function in constituting competence (Sandberg, 2000). Hence, the question that this study will research is: What are senior managers’ conceptions of PPM work?

Even though senior managers are key actors to PPM success, in absence of better insights into the work that they perform in PPM and more specifically, into their competences, there is no “proper” way to select senior managers for participation in PPM roles, or to help them develop the competences they need to succeed in such roles. The findings from the research presented in this paper will actually assist with both, recruitment of senior managers for PPM governance roles as well as with competence assessment and development.

Methodology

A sample of senior managers was secured from eight participating organizations. These were multi-business firms with a global presence, which belonged to a broad range of industries (e.g. financial services, telecommunications, media and entertainment, management consulting, etc.). PPM was utilized by the corporations for a variety of applications, ranging from IT project selection and prioritization, to new product development (NPD). All senior managers participated in PPM Governance Boards. The sample size was defined by the achievement of theoretical saturation (Glaser & Strauss, 1967). In other phenomenographic studies, the theoretical saturation was achieved at a sample size of around 20 interview subjects, after which no new conceptions emerged (Bowden & Green, 2005; Sandberg, 2000). The target size for our sample was 30 senior managers and executives, and the final sample size was 32. Theoretical saturation was reached after approximately 20 interviews; the additional 12 respondents confirmed the initial findings with a higher degree of confidence.

Following the phenomenographic approach, data was collected in semi-structured interviews using a protocol of principal and follow-up questions. This was the strategy most commonly cited in the literature referenced in our review of phenomenographic studies (Ashworth and Lucas, 1998; Bowden & Green, 2005; Marton & Booth, 1997; Sandberg, 1994; 2000). The principal questions were designed to extract what the senior managers conceived as PPM work. The follow-up questions were then posed so that the interviewees had to elaborate and explain what their statements meant in practice (or in practical situations), in other words, how they conceived of PPM work (Sandberg, 2000). The interviews were conducted using the set of questions until no further progress was made. As a result, the interviewees shared their conceptions of PPM work, with each conceptual attribute supported by examples.

According to Sandberg (2000), a key aspect of the data analysis is to look for variation in the informants' conceptions of their work, with the objective of making explicit the basic meaning structures of these conceptions. The analysis of the interview data followed the intentional analysis approach (Sandberg, 1994; 2000), which in our study, sought to interpret what and how senior managers conceived of their work in PPM. As attributes and conceptions started to emerge, we compared the statements within a conception with each other and then across conceptions. This cross-check of interpretations of each conception led to clearer definitions of both the conceptions and the attributes. This final stage (cross-checking exercise) was repeated a number of times until we reached a point where we felt the definitions of the attributes and the conceptions remained 100 percent stable and consistent with the data (Sandberg, 2000). The next section presents the research results and implications.

Results and Implications

Following our phenomenographic study of 32 senior managers from a broad range of firms across various industries, we identified ten attributes of PPM work at four different levels of conception (See Table 1). These are:

- Conception C1: Management and delivery of project pipeline/s,
- Conception C2: Management and delivery of strategic investment categories,
- Conception C3: Optimization of project portfolio,
- Conception C4: Development of PPM strategic capability.

The conceptions reflect four qualitatively different understandings of PPM work. Some senior managers had richer and more complex conceptions of the work. Based on the data, each successive conception builds upon and expands the meaning of its predecessor, starting from C1. The conceptions then form a hierarchy of increasing complexity and richness in conceiving PPM work.

The findings from this research revealed ten different attributes that senior managers use when working in PPM. The interviewees have described their conceptions of PPM work in terms of the following ten attributes: (A1) Approach to Project Portfolio Management (PPM) work, (A2) Awareness of organizational constraints and capabilities, (A3) Approach to value assessment, (A4) Approach to risk assessment, (A5) Knowledge and experience, (A6) Strategic acumen, (A7) Communication, (A8) Impact and influence, (A9) Approach to governance, and (A10) Attitude towards process and methodology.

These attributes did not have fixed meanings, but rather senior managers assigned different meanings to the different attributes in the context of their PPM work and based on how the work was conceived. Therefore, the findings presented suggest that PPM competence is not constituted primarily by a specific set of knowledge, skills and other attributes an individual possesses. But rather, senior managers' attributes used in performing their PPM work are preceded by and based upon their understanding of their work. It is the understood meaning of work that constitutes the foundation for the development and maintenance of competence at work. In other words, "it is people's ways of understanding their work that form and organize their knowledge and skills into a distinctive competence in their work performance" (Sandberg & Targama, 2007: 73). These findings have been confirmed in other empirical studies on competence such as Dall'Alba & Sandberg (2006).

This has clear implications for the development of senior managers' competence in PPM. The point of departure for competence development would need to shift from knowledge domains (as in rationalistic models like PPM Standards) to senior managers' conceptions of their work. Therefore, change in conception would become a more basic form of competence development (Sandberg, 2000; Sandberg & Targama, 2007). In fact, the findings from this study challenge the traditional view of competence development as a step-by-step process from novice to expert level (e.g. Benner, 1984; Dreyfus and Dreyfus, 1986). Based on our findings, the progression from one level to another in the novice to expert hierarchy does not imply a change in conception necessarily. For instance, a senior manager holding conception C1 may advance from novice to advanced beginner without changing his or her way of understanding PPM work. As Sandberg (1994) suggested, the variation in conceptions of work is more fundamental than the linear hierarchy from novice to expert that Dreyfus and Dreyfus (1986) and Benner (1984) proposed. This was also confirmed by other phenomenographic studies such as Sandberg (1994).

The findings from this study also offer an opportunity for a new approach to PPM competence assessment and development. Opportunities could be created for senior managers (at all conception levels) to learn that both question and extend their current understanding of, and in, PPM practice. "Development activities can be focused on reinforcing particular competence at work, or on renewing competence. In both cases, some form of reflection is key to enhance our awareness of the pre-understanding from which our competence develops" (Sandberg and Targama, 2007: 86). When we are exposed to others' ways of seeing the work and engage in reflective dialogue with

them, we become more aware of our understanding of work (Sandberg and Targama, 2007). Thus, organizations could consider designing effective venues (i.e. purposeful off-sites) where senior managers have the opportunity to reflect on their work, learn from each other, challenge the status quo (e.g. their current organizational PPM practices) and ultimately enhance their competence at both, the individual and the collective levels. A good example of such venues in multi-business firms are the PPM planning sessions (usually annual or semi-annual). However, senior managers could also plan to leverage their most frequent meetings, such as PPM Governance Board meetings, to reflect on their work, learn from one another, and eventually enhance their competence.

Conclusion

Following our phenomenographic study of 32 senior managers from a broad range of firms across various industries, we identified four conceptions of PPM work. Each conception had the same ten attributes. With different conceptions, senior managers attach different meanings to the different attributes and organize them into distinctive competence in performing their work at the PPM table. The four conceptions demonstrate that PPM work is not uniformly understood by all senior managers. With different conceptions, senior managers attach different meanings to the different attributes and organize them into distinctive competence in performing their work at the PPM table. The different ways of understanding PPM work established certain attributes as essential and organized them into a distinctive structure of senior management competence in PPM. The four groups of conceptions (C1, C2, C3, C4) represented four variations of senior management PPM competence respectively. Furthermore, these variations formed a cumulative hierarchy of competence in the conceptions. The research findings provide an interpretive understanding of what constitutes senior managers' competence in PPM.

In summary, this study contributes to the PPM literature by providing an interpretive understanding of what constitutes senior managers' competence in PPM. Specifically, it puts to the fore that there are four qualitatively different understandings of the attributes of PPM work, based on the level of senior managers' conception of PPM work. We make an empirical contribution to the literature as our findings refute both the suggestion that senior management competence in PPM work is a set of context-free attributes and that PPM work is a uniformly understood concept by senior managers. It finally adds the conceptions of PPM work as an interdependent integrated whole. This study also makes a contribution to practice by offering a conceptual framework that could be used for senior management PPM competence assessment (e.g. self-assessment) and development. The conceptual framework could also be used as a "guiding tool" when exploring potential senior management candidates for PPM roles.

Regarding research limitations, future studies may wish to consider wider data sources (beyond senior managers) and include subordinates, program managers, external consultants, etc. The main research tool used to gather data was interviews. Other forms of obtaining data such as direct participation or observation of PPM governance meetings, would provide additional texture about how competence is formed through senior managers' ways of conceiving of their work (Sandberg, 2000). The research findings are based on data obtained from senior managers working in PPM in for-profit multi-business firms. However, senior managers from other types of organizations (e.g., not-for-profit, etc.) may hold different conceptions of PPM work. Additional research may illuminate further aspects of what constitutes competence in PPM work in different contexts.

	CONCEPTIONS			
Attribute of conception of PPM work	CONCEPTION 1 (C1): Management and Delivery of Project Pipeline/s	CONCEPTION 2 (C2) Management and Delivery of Strategic Investment Categories	CONCEPTION 3 (C3) Optimization of Project Portfolio	CONCEPTION 4 (C4) Development of PPM Strategic Capability
A1: Approach to PPM Work	PPM as pipeline management (1-N list). Focus on performance of individual assets (i.e. projects). Resource allocation driven by financial value of project.	PPM as prioritization and selection within strategic investment categories, plus scheduling and execution. Focus on financial performance of portfolio. Resource allocation driven by project financial/risk assessment and discussion of strategic value.	Concerned with portfolio optimization. Trade-offs are assessed. Use of scenario analysis. Focus on delivering highest valued portfolio given existing constraints. Resource allocation driven by balancing financial/risk and strategic value of projects.	Deliver highest strategic-valued portfolio. Concerned with learning from PPM performance. Concerned with building a PPM strategic capability.
A2: Awareness of Organizational Constraints and Capabilities	Understands project pipeline and capacity available (high level). Concerned with schedule and time constraints. Understands financial constraints.	Concerned with resource supply management: based on skill set and availability. Concerned with organizational readiness/change management.	Concerned with resource management: balance supply and demand. Objective is to maximise resource utilisation.	Concerned with identifying competence and capability gaps based on portfolio performance. Challenges constraints levels if needed (i.e. to increase portfolio return on strategy).
A3: Approach to Value Assessment	Concerned with financial value of individual initiatives (i.e. ROI, NPV).	Concerned with strategic value of initiatives (informal discussion). Challenges assumptions of individual initiatives' business cases. Understands financial impact at portfolio level.	Concerned with strategic value of initiatives and at portfolio level (structured approach). Concerned with financial and strategic impact at portfolio level.	Concerned with portfolio value performance. Focus on lessons learned and adjustment of PPM value assessment process.
A4: Approach to Risk Assessment	Understands project implementation risk from business case standpoint (i.e. on schedule, on budget).	Understands operational (includes technical) and financial risk at the initiative level. Discusses risk at portfolio level (informal), including risk mitigation strategies.	Understands market risk, franchise risk, reputational risk. Quantifies and manages risk at portfolio level (formal approach).	Approaches risk from holistic business management perspective. Understands impact to predictability of business and financial plans.
A5: Knowledge and Experience	Knowledge of own functional area / SBU/ division and ample experience. Broad view of the corporation. Knowledge about execution aspects of projects (especially in IT PPM).	Sound knowledge of the corporation overall and ample experience. Cross-functional knowledge, ability to make linkages and see interdependencies.	Deep industry knowledge. Knowledge of economic environment and market conditions.	Deep industry knowledge. Knowledge of economic environment and market conditions.

CONCEPTIONS				
Attribute of conception of PPM work	CONCEPTION 1 (C1): Management and Delivery of Project Pipeline/s	CONCEPTION 2 (C2) Management and Delivery of Strategic Investment Categories	CONCEPTION 3 (C3) Optimization of Project Portfolio	CONCEPTION 4 (C4) Development of PPM Strategic Capability
A6: Strategic Acumen	Understands SBU / division strategy in detail. High level knowledge of corporate strategy. Concerned with aspects of strategy execution.	Understands strategy of corporation and defines portfolio mix based on strategy. Able to assess project-strategy alignment. Strategic thinker.	Deep understanding of strategic business drivers. Understands portfolio strategic value. Concerned with market/industry changes and adapts portfolio accordingly.	Understands project portfolio performance from strategy perspective (i.e. how projects trend against strategies). Identify potential capability gaps, as well as issues/gaps on drivers. Adjust strategies. Focus on learning.
A7: Communication	Ability to articulate the value of projects. Advocacy is the main characteristic.	Communication as mechanism to educate and drive strategic change. Ability to communicate back and forth with own organization.	Ability to articulate portfolio level decisions effectively, while being sensitive to audience.	Ability to articulate portfolio decisions effectively, while being sensitive to audience.
A8: Impact and Influence	Ability to collaborate and work with others. Relationship building and networking. Skill of representation. Ability to influence and negotiate.	Focus on openness and transparency. Able to challenge each other, and have healthy debates.	Credibility and ability to inspire trust. Collaboration as a vehicle to drive ownership and accountability of results.	Credibility and ability to inspire trust. Collaboration as a vehicle to drive ownership and accountability of results.
A9: Approach to Governance	Oversight, leadership and support around the delivery of project pipeline. Committed to the successful delivery of projects.	Focus on decision making (non-emotional) and ongoing governance of investment categories. Think of yourself as a general manager of the Business.	Oversight and leadership around portfolio level decisions. Focus on delivering on strategy and doing what is best for the corporation.	Oversight and leadership around portfolio level decisions. Focus on delivering on strategy and doing what is best for the corporation.
A10: Attitude towards Process and Methodology	Concern for project/programme management methodology and project pipeline management processes and methodology.	Commitment to PPM process and methodology. Concerned with championing PPM in the organization.	Concerned with maturing PPM process and methodology. Embed PPM into BAU (Business As Usual).	Concerned with continuously validating appropriateness of PPM discipline. Ensures adoption of best practices and lessons learned.

Table 1. The Structure of PPM Work: Conceptions and Attributes

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TWO STUDIES ON THE IMPORTANCE OF FOUNDING NARRATIVES TO ENTREPRENEURIAL PITCH SUCCESS

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Introduction

One crucial function of the entrepreneurial pitch is to alleviate investor uncertainty about committing funds to a startup in the early stages of development. New ventures rarely have sufficient hard data to substantiate their future success quantitatively, so investors often need a qualitative reason for putting their faith in the entrepreneur. Storytelling, as a powerful and time-honored method of transforming the intangible into the tangible, can go a long way toward establishing legitimacy and alleviating uncertainty. In this research, we empirically test whether the inclusion of an origin story in an entrepreneurial pitch significantly increases the probability of obtaining funding. This research consists of two studies. In the first study, we analyzed 486 pitches from six seasons of ABC's *Shark Tank* and observed a significant relationship between the presence of a founder story and funding success. In the second study, we confirmed causality via a randomized controlled experiment. This finding has implications for entrepreneurs, in that it encourages them to concentrate on the narrative they are telling in their pitches. It also has implications for investors, in that it invites them to reflect on how important investment decisions might be swayed by presentational aspect of pitches.

An entrepreneurial pitch is a short (two to 15 minute) oral presentation to investors with the purpose of persuading them to commit funds. Although there are many reasons unrelated to the

presentation as to why investors may or may not be attracted to an opportunity, recent research (Clarke & Cornelissen, 2011; L. Cunningham, 2010; Parhankangas & Renko, 2017; Wales et al., 2018) has demonstrated that the rhetorical characteristics of the pitch itself may influence investor decision making. Specifically, investigators have examined the role of entrepreneur appearance (race, gender), communication skills (speech fluency, meaningful gestures), affect (passion), perceived preparedness, and specific linguistic devices (metaphors, for example). In general, it has been found that these presentational factors do have a strong impact on the perceived potential of a new business (Clarke & Cornelissen, 2011; L. Cunningham, 2010; Lucas et al., 2016; Wales et al., 2018), and thus entrepreneurs are wise to master certain rhetorical aspects of the pitch.

Entrepreneurs often have a reputation for being great story-tellers (Martens et al., 2007), and industry guides regularly advise that entrepreneurs should tell a good story when they give a pitch. Some examples: “Each day we connect with multiple entrepreneurs. Without a doubt, the ones who stand out are the ones who share a great story. We are more engaged when we hear a narrative of events as opposed to a list of facts, because we immediately decode the words into something meaningful to us” (Angela, 2014). “Facts tell but stories sell...Everyone loves a good story” (Bailey, 2018). “Although the stakes are high and the pressure is intense, using storytelling in your pitch will go a long way toward capturing an investor’s undivided attention ” (Faselis, 2019).

This research is an attempt to test this intuition empirically. We conducted two studies to examine whether the inclusion of a founding narrative in a pitch increases the likelihood of obtaining funding. The first is an analysis of 486 pitches from ABC’s *Shark Tank*, where we observe that the presence of a founding narrative increases the probability of funding by 63%. The second study is an experiment where hired actors deliver pitches in two different conditions: with the founding narrative and without. This study is currently underway.

Literature Overview

Recent research has found that presentational aspects of a pitch effect the perceived quality of the entrepreneur or the business idea. For example, Clark (2008) found that investors are influenced in their decision making by the entrepreneur’s style of delivery, even though they are often not aware of it. One theory for why delivery matters is that it reveals the personality attributes of the entrepreneur that tend to coincide with startup success, such as high dispositional affect (Baron et al., 2012). A pitch high on positive affect signals personal characteristics associated with venture success, such as creativity (Baron & Tang, 2011), opportunity recognition (Filser et al., 2020; Ma et al., 2021), extraversion (Israr & Saleem, 2018), and tolerance for high levels of stress (White & Gupta, 2020). Lucas, et al. (2016) found that presentation skills are paramount in communicating the true level of entrepreneurial passion that investors value.

Specific forms of language have also been considered for their contribution to pitch success. Clarke & Cornelissen (2011) discovered that figurative language moderates (increases) the mediating effect of gestures on mental imagery, which in turn increases the propensity to invest. Cunningham (2010) found that several grammatical and syntactic characteristics have a significant impact how favorably a pitch is perceived. For example, pitches with a higher noun-to-verb ratio, more metaphors, varied sentence length, and less repetition advanced further in a pitch competition. Language that communicates hope has been associated with more favorable interpretations of business plans by investors (Wales et al., 2018). Pitches that focus of the entrepreneur, as measured in “I” and “we” mentions, are more successful (Cunningham, 2010; Marom & Sade,

2013; Parhankangas & Renko, 2017), as are those with a more interactive style, as measured by the frequency of questions (Cunningham, 2010; Parhankangas & Renko, 2017).

Structural and organizational elements have also been found to contribute to pitch success. Daly & Davy (2016a) analyzed 14 pitches from *Dragon's Den* and discovered that a 10-component structure tends to recur. Their analysis also finds evidence of the three methods of persuasion from classical rhetoric (logos, ethos, and pathos), and cites storytelling as a key instance of pathos.

Hypothesis Development

Stories have a powerful impact on persuasion because we make sense of experience by sequencing events into a narrative (Cunliffe et al., 2004). Several professions make heavy use of stories. For example, lawyers are taught to tell a story as a way of presenting a persuasive case (Foley & Robbins, 2000). Within an organization, story-telling is a means of sense-making through pattern identification (Boje, 1991). Stories are invoked at key decision-making points to provide historical precedents, even if the same events are constantly reinterpreted in a new light.

Narratives told by entrepreneurs are an integral part of the process by which new ventures are founded. They play an important role in the early stages of capital acquisition by endowing an abstract idea with greater plausibility (Lounsbury & Glynn, 2001). In the absence of any tangible evidence of viability, such as sales, stories help to establish the credibility and determination of the entrepreneur. A story provides an appealing package for the details of the business that helps reduce unfamiliarity and thus uncertainty (Cunningham, 2016). One analysis (Martens et al., 2007) found that initial public offerings (IPOs) containing stories portraying the entrepreneurial firm as an aspiring leader with a successful track record have a significantly better chance at resource acquisition.

Story-telling competence is critical for entrepreneurs, because it enables them to justify their company's existence and persuade others to invest. A field study (O'Connor, 2002) in which the author observed founders in their daily practice, discovered that founders rely on six basic types of stories: founding, visionary, marketing, strategy, historical, and conventional. The authors contend that entrepreneurs must master several genres, including ones in which they play the "epic hero" as well as ones where they play minor characters dealing with uncontrollable circumstances. The parallels between the entrepreneurial story and the classic "hero's journey" have been pointed out, in which the entrepreneur is called to pursue a quest, overcomes challenges, experience growth and self-discovery, and ultimately the benefits are shared with the community (McMullen, 2017; Morong, 1994).

Our hypothesis, then, is that the inclusion in an entrepreneurial pitch of an origin story, or a founding narrative in our terminology, will have a significant impact on funding success.

Study 1 - *Shark Tank*

We analyzed the first six seasons of the ABC television show *Shark Tank* (120 episodes) as our first data set. Transcripts of the *Shark Tank* episodes were generated using YouTube's closed caption feature. Pitches were manually extracted from the text transcript by the authors and twelve undergraduate business students. The lead author read through all excerpted pitches without any identifiers of season, episode, or outcome, and marked whether a founding narrative was present, using (Foley & Robbins, 2000) as a guide. The criteria for what constitutes a founding narrative

are described in Table 1. There were five essential elements: characters, setting, conflict, climax, and denouement. Examples of founding narratives appear in Listing A1 the Appendix.

Of the 486 pitches, 185 contained founding narratives. These 185 were combined with 185 randomly selected pitches that did not contain a story, were randomized, and presented to the other researchers for coding. Interrater agreement was strong: Fleiss' kappa was 0.73, indicating "substantial agreement" (Landis & Koch, 1977). All three coders were unanimous 80% of the time, and 94% of the time, at least two coders agreed with the original assessment. Statistically speaking, this agreement is significantly higher than random chance ($p < .0001$).

Story Element	Operationalization	Examples
setting	time reference	"one day", "seven years ago", "my freshman year of college", "back in 1998", "a couple of years ago"
characters	references to specific individuals	"a little boy named _", "my mom", "my wife", "my doctor", "my daughter"
conflict	problem	"there has to be a better way", "it was impossible"
climax	creation	"so I developed Turbo Blaster", "so I created Chopstick Art", "I had an idea of panties that maybe could contain the smell", "I realized that a coffee house would be the perfect place for a legal resource center."
denouement	eventual triumph	"six, seven years later, I've got two locations and a booming wholesale business"

Table 1. Elements of a founding narrative.

We performed a logistic regression with dependent variable funding (deal=1, no deal=0), along with control variables historically associated with funding success (see Table A2 in the Appendix). Results appear in Table 2.

Model 1 (controls only) achieved a precision of 0.576 and a recall of 0.634 and only first-person references were significant. When we added the experimental variable, precision increased to 0.616 and recall decreased to 0.615, but F1 and AUC both improve. Additionally, we note that the Story variable is significant and positive and has the largest magnitude of all the variables (estimate 0.285, odds ratio 1.767), and increases the probability of funding success by 63%.

The presence of an origin story makes a substantial difference over controls-only. We therefore conclude that our hypothesis is supported.

Study 2: Experiment

The *Shark Tank* study found a correlation between the inclusion of a founding narrative and the probability of achieving investment. To establish a causal link, we are conducting a 4 (pitch) x 4 (actor-entrepreneurs) x 2 (conditions) experiment, where the manipulation is that the story is swapped out for general product descriptions. Student actors are paid to record a memorized pitch twice, once with the story and once without. They are coached to deliver the pitches with the exact same gestures, facial expressions, and inflections.

We are paying 200 subjects \$4.00 each to watch two randomly selected pitches and evaluate them on a scale used to evaluate pitch contests. Our goal is to see whether the version of the pitch with the story scores consistently higher than the version without. This work is in progress.

DV: Deal (1/0)	Model 1: Controls Only			Model 2: Controls + Experimental		
	Estimate	Chi-Square	Prob>Chi-Square	Estimate	Chi-Square	Prob>Chi-Square
Intercept	-0.010	0.000	0.993	0.239	0.045	0.832
AskedFor	0.000	1.279	0.258	0.000	0.692	0.405
Malepresent	-0.091	0.703	0.402	-0.047	0.185	0.667
I	0.149	3.978	0.046	0.095	1.510	0.219
We	0.205	5.605	0.018	0.173	3.890	0.049
Interrogative	-0.307	2.754	0.097	-0.301	2.594	0.107
Preparedness	0.116	1.965	0.161	0.128	2.333	0.127
Concreteness	-0.769	1.499	0.221	-0.734	1.347	0.246
Story				0.285	7.613	0.006
Precision			.576			.616
Recall			.634			.614
F1			.603			.615
AUC			.613			.630

Table 2. Results of logistic regression predicting Deal from control variables (Model 1) and experimental variable (Model 2) in *Shark Tank* pitches.

Conclusion

We observed that the inclusion of a story telling the origin of the business concept has a significant positive impact on the probability of obtaining investor funding. While numerous technical factors are important—the quality of the idea, the economic timing, the match of investor and entrepreneur—previous research has shown that purely presentational factors, including word choice, gesturing, and figurative language make a significant difference in funding outcome. We add to this research by showing that a story about the genesis of the business, one with literary devices such as setting, characters, conflict, climax, and resolution, make a pitch more convincing and more likely to persuade potential investors. We hope to establish a causal relationship with the follow-up experiment.

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Appendix

In 1997, while living in Dallas, I survived an attack in my apartment. and due to the nature of the crime, uh, it became very high profile. And my story was told lots of places. And as that happened, I noticed something-- that what this one person had done to me, this one negative action, really spread out as a ripple effect, and affected literally millions of people. And I thought that if somebody could affect millions of people with a negative action, then somebody could affect millions of people with a positive action. and soul's calling was born out of that. in 2004, I decided I could really, maybe, potentially make a business out of this. And the first object that I launched with is the Inspirella Umbrella.

17 years ago, I graduated from Loyola Law School in Los Angeles and passed the bar exam. The economy was in recession, and there were not a lot of opportunities for young lawyers. I decided to pursue other interests. I always wanted to open up a coffeehouse. I ended up spending more time in coffeehouses than courthouses. And then it hit me. I realized that a coffeehouse would be the perfect place for a legal resource center that could cater to the unmet needs of the middle class.

Four years ago, when I gave birth to my first child, it should've been the most beautiful day of my life, but instead, I have terrible memories of feeling humiliated and insecure, all because I was wearing a nasty, chemical-smelling, ill-fitting hospital gown that left my body exposed. I actually had to wear two gowns--one in the front, one in the back--to somewhat cover my backside. I swore on that day four years ago, that no woman should ever have to feel humiliated like I did on such a joyous day in her life, so I designed Hot Mama gowns.

It was six years ago that I went out in search for a baby gift. I was looking for those little ruffled bloomers my mom always called 'rufflebutts.' It's when I realized they were nowhere to be found that our company was born. our company started around a simple baby bloomer, but we now design and manufacture an entire clothing line for girls up to age 6.

About four years ago, my daughter was going to middle school. It was the night before she needed her locker organized the next morning. I went out to the garage, took my table saw out the back porch, and I created the first one. I'm a contractor and a developer, so I had the tools. It was, uh, you know, rough around the edges but very functional. so, she woke up the next morning, looked at it, and goes, 'dad, I'm not taking this to school.' exactly. But she knows me, and we've done this many times. Kids never appreciate anything we do for them ever. no. well, the telling sign was, two girls walk behind us -- first day at a new school -- and they looked, and they said, 'Cool. Where'd you get that wooden one?' We made about eight or nine of them for just close people she had met that first little bit, but then the school organizational director, the one who goes and checks the lockers, contacted me and said, 'this is -- this really works. it's functional.' And he ordered 500 of them on the spot.

Listing A1. Examples of founding narratives from *Shark Tank*.

Variable	Measure	Source
<i>Preparedness</i>	LIWC “numbers”	(Chen et al., 2009; Pollack et al., 2012)
<i>Concreteness</i>	noun/verb ratio, computed using NLTK POS tagging. For nouns, we counted all noun forms: NN, NNS, NNP, and NNPS. For verbs, we counted all verb forms: VB, VBG, VBD, VBN, VBP, and VBZ.	(L. Cunningham, 2010)
<i>Malepresent</i>	at least one speaking male present	(Balachandra et al., 2013; Brooks et al., 2014)
<i>Self</i>	‘I’ or ‘We’ from LIWC	(L. Cunningham, 2010; Marom & Sade, 2013; Parhankangas & Renko, 2017)
<i>Interactive</i>	‘interrog’ category from LIWC	(L. Cunningham, 2010; Parhankangas & Renko, 2017)

Table A2. Control variables for the *Shark Tank* study.

SOYBEAN SEED VARIETY SELECTION USING MEAN-VARIANCE MODEL

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Mean-Variance Model, Seed Variety Mix, Risk Diversification

Introduction

Soybean is one of four major crops that produce about two-third of current harvested global crop calories (Ray, Mueller, West, and Foley, 2013). Crop demand is projected to be doubled between 2005 and 2050 (Tilman, Balzer, Hill, and Befort, 2011), but crop yield growth is significantly insufficient. Especially, only 55% increase of soybean is possible by 2050 at current yield growth rates (Ray et al., 2013). This dire situation is linked to food security. Many studies develop suggestions of government policy changes, financial system change, and agricultural technique development, see Committee on World Food Security (2021). However, these suggestions can be difficult to realize and will take a long time to materially impact crop yield increases.

When a farm makes a planting plan, it typically includes several seed varieties of crops after considering environmental conditions and other uncertainties such as precipitation. A composition of different varieties is called a variety mix. A well-selected variety mix is especially important to prevent losses from unexpected environmental changes and diseases which can be crucial to certain varieties. Therefore, the variety mix is one of the essential keys for yield management.

This study presents a methodology that finds the most productive variety mix with the lowest risk while managing the number of seed varieties in the mix. Because our methodology uses only statistics and operations research techniques, if data are available, it may be the easiest and fastest way to alleviate the food security problem without juggling political, ethical, or government issues.

We use the data set provided by the Syngenta Crop Challenge in 2015. It includes yield rates of 182 soybean varieties under various environments and weather conditions in 350 sites. We formulate a model as a convex separable integer quadratic program with a cardinality constraint based on a mean-variance model. The means and variances of each variety's yield under a certain farm's environmental conditions are estimated by linear regression models. Principal component

analysis (PCA) is employed to diminish multicollinearity among variables in the data set before the regression modeling. We simulate the best variety mixes by solving our seed selection model with IBM's CPLEX solver and discover the relationship between the expected yield and its risk. The relationship is visualized on an efficient frontier, so our method provides farmers with flexible choices for their variety mix planning. Simulations show that our model significantly reduces uncertainty in yield by composing practically manageable mixes. Results also show that diversification with up to 5 seed varieties in a mix can achieve about 62 to 103 times less uncertainty than planting a single variety. This study demonstrates the usefulness of the technique by applying it to a certain farm, and the same technique can be applied to any farms.

Literature Overview

Our model is based on the mean-variance model of Markowitz (1952), which has made a phenomenal impact on risk diversification and modern portfolio theory for the capital asset pricing model in finance. See Steinbach (2001). Although the mean-variance model is originally developed for finance, we introduce it to the field of agricultural operations. In fact, crop yields and their uncertainties are similar to returns and their volatilities of financial assets. A variety mix can therefore be treated as a portfolio selection of financial assets.

Methodology

We first apply the classical mean-variance model to the soybean data to show possible variety mixes and their maximum possible yield. Then, we improve the model to incorporate practical restrictions in choosing a variety mix. The data-cleaning procedure and techniques for coefficient estimations are described in this section.

Suppose we have n seed varieties. Let $r_{j,t}$ be the *estimated yield* of a seed variety j when it is planted on a certain farm at year t . Denote its mean over the time $t = 1, \dots, T$ by

$$\bar{r}_j = \frac{1}{T} \sum_{t=1}^T r_{j,t}. \quad (1)$$

Assuming yield is constant to the amount of variety planted, the *total expected yield* is

$$R = \sum_{j=1}^n \bar{r}_j x_j, \quad (2)$$

where x_j is a proportion of variety j in a variety mix. The following constraint ensures the proportionality.

$$\sum_{j=1}^n x_j = 1. \quad (3)$$

Then, our goal is to optimally allocate x_j to achieve the maximum total expected return yield R in (2). But at the same time, its risk should be considered because R is from estimated values \bar{r}_j in (1). We measure the uncertainty of the estimate by the *variance* of R :

$$Var[R] = \sum_{j=1}^n v_j x_j^2 + \sum_{i=1}^n \sum_{j=1, j \neq i}^n v_{ij} x_j x_i$$

where v_j is the variance of $r_{j,t}$ and $v_{i,j}$ is the covariance of $r_{i,t}$ and $r_{j,t}$.

Since soybeans grow by their nature, yields by variety are independent of each other, so it is reasonable to assume that the covariance between yields is zero, i.e., $v_{i,j} = 0$ for $i, j = 1, \dots, n$, and $i \neq j$. It implies the variance of R to be

$$Var[R] = \sum_{j=1}^n v_j x_j^2. \quad (4)$$

Combining (2) and (4) with the proportion restriction (3), we formulate the *basic mean-variance model* (B):

$$(B) \quad \min \quad \sum_{j=1}^n v_j x_j^2 \quad (5)$$

$$\text{s.t.} \quad \sum_{j=1}^n \bar{r}_j x_j \geq r_0 \quad (6)$$

$$\begin{aligned} \sum_{j=1}^n x_j &= 1 \\ x_j &\geq 0 \quad j = 1, \dots, n \end{aligned} \quad (7)$$

where r_0 is the *minimum desired yield*, and x_j is restricted to be nonnegative in (7) for its proportionality. Model (B) finds an optimal proportion x_j that returns at least r_0 expected yield while achieving the minimum volatility of R in (5). Because all variances v_j are always nonnegative, Model (B) is a convex separable quadratic program, and it is globally solvable by commercial solvers such as IBM's CPLEX.

Model (B) is useful to identify the relationship between the expected yield R in (2) and its volatility $Var[R]$ in (5). We simulate them for a certain farm on various target yield r_0 and visualize the result in the black line in Figure 1. Orange dots depict the individual variety's mean yields \bar{r}_j and standard deviations $\sqrt{v_j}$. The method to estimate \bar{r}_j and v_j from data shall be discussed. The line in the figure is called the *efficient frontier* and represents *the best variety mix* that has the lowest risk at the specific required yield. That is, a point on the line is an optimum proportional combination of some orange dots. Figure 1 shows that the variety mix has the minimum risk at the expected yield of 62.3. Thus, any variety mix below the point must not be selected; otherwise, a farmer loses the opportunity to get a higher yield at the same risk level. In fact, (B) does not find the variety mix under 62.3 because of optimality. So, the line for the expected yield below 62.3 is drawn by switching the inequality in (6) to equality for the illustration purpose. Therefore, farmers should choose a variety mix on the efficient frontier based on their desired expected return above 62.3 and their acceptable risk level.

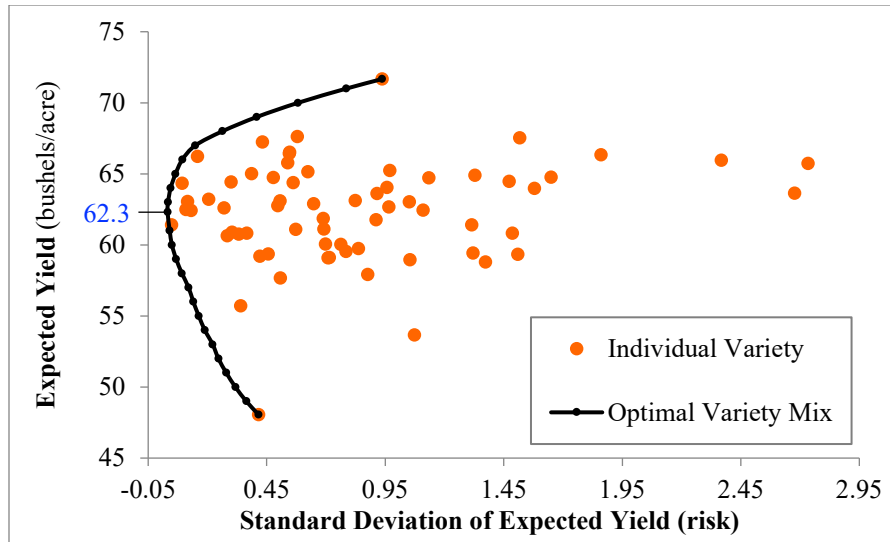


Figure 1. The efficient frontier and individual varieties

However, some variety mixes may not be applicable when it consists of too many different seed varieties with fractional proportions. Table 1 shows that when $r_0 = 62$, (B) finds the variety mix having the minimum volatility of 0.032 with the expected yield of $R = 62.3 \geq r_0$. But its variety mix consists of 47 varieties with proportions such as 0.01% or 1.3%. In practice, planting 47 varieties on a farm in such low quantities for some varieties may not be applicable or profitable.

Required Yield, r_0	62	63	64	65	66	67	68	69	70	71
Expected Yield, R	62.3	63	64	65	66	67	68	69	70	71
Std. Deviation	0.032	0.034	0.045	0.065	0.094	0.149	0.263	0.408	0.582	0.786
Number of Varieties in Mixes	47	39	34	36	22	12	8	7	5	4

Table 1. Seed variety mixes of the basic Model (B)

To resolve the issues, we modify Model (B) by adding more constraints for a practical variety mix as shown in the following *seed selection model* (S):

$$(S) \quad \min \quad \frac{1}{C^2} \sum_{j=1}^n v_j x_j^2 \quad (8)$$

$$\text{s.t.} \quad \sum_{j=1}^n \bar{r}_j x_j \geq Cr_0 \quad (9)$$

$$\sum_{j=1}^n x_j = C \quad (10)$$

$$\sum_{j=1}^n y_j \leq M \quad (11)$$

$$0 \leq x_j \leq Cy_j \quad j = 1, \dots, n \quad (12)$$

$$x_j \text{ is integer and } y_j \text{ is binary } j = 1, \dots, n \quad (13)$$

Model (S) introduces binary variables y_j in (13) to construct a cardinality constraint in (11) with a positive integer M to limit the number of varieties in the mix. Since the cardinality constraint alone cannot prevent fractional mixes, the proportion of seed varieties, x_j are also restricted to be integer in (13) with the bound of a positive integer C in (12). This new parameter C scales x_j to have the increment of $\frac{100}{C}\%$. For instance, when $C = 10$, the integer solution x_j is one in $\{0,1,2, \dots, 10\}$. Suppose $n = 5$ and a solution is $x^* = (2,0,0,0,8)$. Then, it is scaled back by $x^* \leftarrow (0.2,0,0,0,0.8) = x^*/C$ for a 10% increment. So, the variety mix consists of 20% and 80% of the first and fifth varieties. This scaling on x_j consequently modifies (8)-(10) without affecting the solution. Although the additional constraints considerably shrink the feasible region of (S), our simulation shows that the restrictions do not considerably deteriorate the risk. Before we discuss the result, we describe the method to estimate yields $r_{j,t}$, which is only required data to use (S).

Syngenta's dataset contains 34,212 observations of 182 soybean varieties from 350 locations between 2008 and 2014. It provides yields of 182 varieties under various environmental conditions such as temperature, precipitation, solar radiation, soil pH, and soil source. Because no farms have planted all 182 varieties, the yield of all varieties must be estimated for the environmental conditions of the farm to which the variety mix is planted. For this, we build multiple linear regression models after data cleaning is done for assumptions of linear regression and missing and unbalanced data. More specifically, we exclude 77 varieties that have less than 30 observations and further exclude 38 varieties if the data ranges do not include the evaluation farm's data. A total of 67 varieties remains, but the environmental data are naturally highly multicollinear having a range of correlations up to 99.87%. We use principal component analysis (PCA) and select the top 10 eigenvalues calculated from 29 explanatory variables. The 10th eigenvalue is 2.9%, and the cumulative percentage of the 10 eigenvalues is 88.73%. With the 10 independent variables, we used backward stepwise with a p-value threshold of 0.05. All models are significant and valid with $\alpha = 5\%$. VIFs of all models are less than 2.5 except for two values of 4.0 and 4.2. We select a certain farm and substitute its environmental data into the regression models to estimate $r_{j,t}$ for variety j and year t from 2008 to 2014. The averages and standard deviations of $r_{j,t}$ of the 67 varieties are in the scatter plot in Figure 1.

Results and Implications

We simulate Model (S) with parameters of $M = 5$ for cardinality and $C = 10$ for a 10% increment of proportions. Although (S) is NP-hard as an integer quadratic program, IBM CPLEX solver found global optimum solutions for all instances within a few seconds in a personal laptop.

Required Yield, r_0	62	63	64	65	66	67	68	69	70	71
Expected Yield, R	62.37	63.05	64.03	65.01	66.01	67.04	68.00	69.01	70.02	71.13
Std. Deviation	0.037	0.041	0.056	0.080	0.120	0.161	0.282	0.416	0.590	0.843
Number of Varieties in Mixes	5	5	5	4	5	5	4	4	3	2
Risk Growth Ratio	0.076	0.155	0.438	1.213	4.934	0.304	4.559	0.951	0.461	0.436

Table 2. Seed variety mixes of the seed selection Model (S)

The results are in Table 2. All expected yields R are realized a little over the required yield r_0 mainly because of the integer and binary restrictions on the solution. It is contrary to the results in Table 1 of Model (B). Since (B) allows continuous solutions, it finds the least risky variety mix meeting $R = r_0$ for the required yield over 62.3, which generates the minimum variance. (S) has the minimum variance at $R = 62.37$. See the first column in Table 2. It is naturally greater than that of (B) due to the additional constraints in (S), but it is not considerable. This occurs similarly throughout other required yields. We measure the risk growth per yield increase by

$$\text{Risk Growth Ratio} = \frac{StDev(S) - StDev(B)}{R(S) - R(B)}, \quad (14)$$

where $StDev(S)$ and $StDev(B)$ are standard deviations with the expected yield $R(S)$ and $R(B)$ of Models (S) and (B), respectively. The ratio below 1 means that a variety mix found by (S) has smaller uncertainty than (B) when the expected yield increases by one unit (bushels/acre). Table 2 shows the ratio on its last row, and most instances have the risk growth ratio below or near 1. Now, compare the number of varieties in mixes of Table 1 and 2. Since (S) is solved with $M = 5$, the sizes of most variety mixes are 5, and the smallest size is 2, while Table 1 shows that (B) composes mixes with from 47 to 4 varieties. This concludes that (S) composes variety mixes with a significantly smaller number of varieties than (B) while having superior risk levels with risk growth ratios below 1 in most instances. A visual comparison is in Figure 2. It shows that the efficient frontier of (S) is just slightly on the right side from that of (B) even though the feasible region of (S) is significantly restricted. Therefore, (S) will immediately offer farmers considerable benefits by suggesting a manageable variety mix. For example, when a farmer requires the minimum risk variety mix, (S) suggests a mix of (V39,V42,V43,V44,V118) = (20%,10%,10%,10%,50%), which consists of 5 varieties with 10% increment, expecting $r_0 = 62.37$ with a standard deviation of 0.037 (see Table 2). On the other hand, (B) finds a mix composed of 47 varieties with a similar expected yield of $r_0 = 62.30$ and standard deviation of 0.032 (see Table 1), and 80% of varieties of its mix have proportions between 0.1% and 1%, which are too fractional to consider for planting.

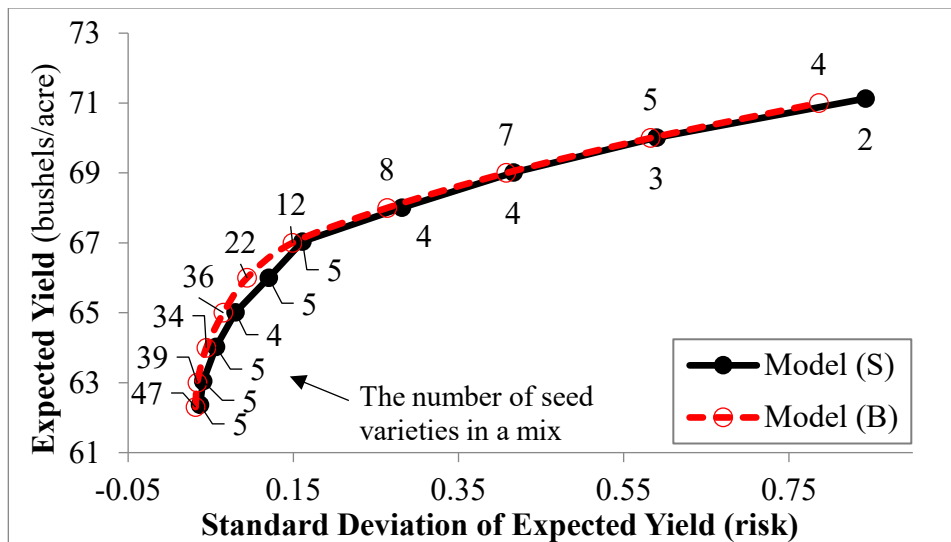


Figure 2. The efficient frontiers of the seed selection model and the basic model

(B) and (S) also demonstrates the importance of risk diversification. When only a single variety is planted on the same farm used for the simulation above, the expected yield of the randomly picked single variety would yield within the *prediction interval* of:

95% prediction interval: [54.93, 69.99]

with the standard error of 3.8321. It implies that the farm would have a yield of 69.99 bushels/acre at its luckiest case in 95%. Given an almost similar required yield of $r_0 = 70$, (B) and (S) find a mix with 5 and 3 varieties having 6.58 ($=3.8321/0.582$) and 6.50 ($=3.8321/0.590$) times smaller standard deviations (risk). Therefore, a variety mix optimally composed by (B) and (S) easily surpasses the risk of a single variety planting. In addition, the yield of a single variety in the worst case is 54.93 bushels/acre in 95% chance; however, by mixing only 5 varieties, (S) expects 62.37 bushels/acre at its minimum risk, which is 103.88 ($=3.8321 / 0.037$) times less risky. This impressive impact of risk diversification is consistent with the well-known results of the modern portfolio theory in finance.

Conclusion

We develop seed selection models (B) and (S) based on the mean-variance model widely used in finance. We built linear regression models to estimate the yields for the data needed for the models after proper data cleaning and PCA. (S) successfully finds optimum variety mixes with a manageable number of seed varieties having a certain proportion increment even with a smaller risk increase from that of (B) in most cases. More impressively, in the simulation, by mixing up to 5 varieties, (S) significantly shrinks the yield variability by 6.50 to 103.88 times compared to single seed planting. This remarkable result can be further expanded with other well-developed portfolio selection techniques in finance. For example, if data are available, we can modify (S) to the similar way that Value-at-Risk (VaR) is implied for the financial asset allocation. We hope this study will contribute to decelerate the food security problem that we have faced and will face more seriously.

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SMALL BUSINESS AND A RECESSION: WOES ON “MAIN STREET”

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Small business, entrepreneurship, inflation, recession, economy

Introduction¹

This research begins with an examination of COVID-19 impacts on entrepreneurs and their responses. Several significant developments have followed: inflation, supply chain disruptions, labor shortages, and a looming recession. According to some, such a recession is already here, and to others, a recession is on its way. Earlier in the first two quarters of 2022, which showed two consecutive quarters of negative GDP growth, a technical recession was observed ("Business cycle dating procedure: Frequently asked questions," 2022; Henney, 2022a). In the second two quarters of 2022, a seemingly repetitive cycle for the past several months, predicted the likelihood of a recession based on surveys of consumers (Daniel, 2022; Kellstedt, Linn, & Lee Hannah, 2015), large and small business owners, CEOs (Bushard, 2022; Henney, 2022a), bankers (Cox, 2022; Son, 2022) and pundits as well as the Federal Reserve, should there be “monetary policy tightness that is enacted in response to inflationary pressures” (Ajello, Benzoni, Schwinn, Timmer, & Vazquez-Grande, 2022). As such, transition from dreaded specter to a lived reality is being realized by consumers and businesses that represent the U.S. economy. While case rates of COVID-19 are declining (at this), there was a rather extraordinary spike in December of 2021 with over 5 million cases in the U.S., and another spike in December 2022 ("Covid tracker weekly

¹ This present paper, while a unique work product unto itself, is connected to an ongoing research stream (including literature review databases).

review: Interpretive summary for December 02, 2022," 2022). With variants (Katella, 2022) under consideration as well, and winter, it remains uncertain as to what may be on the horizon. Nevertheless, sustained impacts on our economy, small businesses, and consumers continue to linger ("Survey: Small business challenges worsen amid record inflation and workforce shortages," 2022). This research also examines other trends which may be symptomatic such as tech industry layoffs, reductions in seasonal hiring, increasing debt levels and diminishing consumer savings.

Literature Overview and Methodology

Due to the emergent and dynamic nature of conditions with which this research is concerned, it is appropriate to point out that the present exploration is conceptual in its very nature. As for the future, economists can guess, but new circumstances that can change a trajectory may arise at any moment. As such, a qualitative framework is the appropriate approach in any attempt to better understand a phenomenon which is still a developing story. In keeping with this, the artifacts collected in a literature review may come from traditional scholarly sources (e.g., journal articles and conference proceedings; government disseminated data sets) as well as others, including the popular press. Although popular press sources must be scrutinized (in some cases heavily), to determine their veracity, one key advantage they present is that they are at least the most contemporary. Further, the body of artifacts that has been assembled for this present paper is in connection with an ongoing stream of research concerned with the entrepreneurial environment at large. Software has been used to manage a database comprised of over 500 bibliographic entries. Said entries, when available (which is in most instances), are accompanied by attachments such as PDF and Excel files, along with images (typically charts graphs and other illustrations). These items – including emergent ones as research progresses – are treated as sources of data to be analyzed under a qualitative research paradigm (Creswell, 1994; Hodder, 1994; Strauss & Corbin, 1994). The researcher is to pose questions, collect data, seek to identify patterns and themes in such data, interpret findings and report them. Finally, the qualitative researcher, while employing a constructivist approach may derive theoretical frameworks (Barry, 1996; Schwandt, 1994). Such frameworks are neither regarded nor intended to be generalizable.

ProQuest, ABI/INFORM, and Ebsco are examples of library sources that have been searched. Available on the Internet, numerous other entities, such as the *NFIB* Research Foundation, publish findings about small business and trends. To assess the environment, (example) search terms have included COVID-19; inflation; recession; labor shortages; and supply chain. However, another interest is in how small business owners respond to environmental conditions. Although not the first exogenic shock, the pandemic presents a recent window through which researchers could view pivoting and innovation (Lahm Jr., 2021), or more tragic outcomes such as permanent business failures (Amankwah-Amoah, Khan, & Wood, 2021). The U.S. Bureau of Labor Statistics (BLS) has been invaluable for its calculators and current as well as historic data, such as its Consumer Price Index (inflation). It is assumed that Federal Reserve's policies and actions in raising interest rates in its efforts to tame inflation are closely tied to the specter of a recession (Ajello et al., 2022).

Results and Implications

“Disconnected supply chains, logistics challenges, shortage or unavailability of key resources, extreme price distortions, government restrictions on the functioning of many industries and

markets, the need to redesign the working processes for many industries, consumer pessimism, and erosion of trust in global trade” (Morgan, Anokhin, Ofstein, & Friske, 2020) emerged noticeably with the COVID-19 global pandemic. At this point, several of the global trade and other economic issues persist, notably affecting supply chains (“2022 small business owner report [Press Release],” 2022; Santacreu & LaBelle, 2022) and labor markets (Casto, 2022; Henney, 2022b; “Seasonal hiring update: Retail, transportation & warehousing companies add fewer jobs than last year,” 2022). At the same time coronavirus variants, including Alpha, Beta, Delta, and Omicron (Katella, 2022) have arisen. According to (medical researchers) Bollinger and Ray (2021), “mutations in viruses — including the coronavirus causing the COVID-19 pandemic — are neither new nor unexpected.” Relative to the pandemic itself, the U.S. Government Accountability Office (GAO) has identified lingering effects known as long COVID. According to its estimates 7.7 to 23 million Americans have suffered from recurrences, continuing health problems, or new ones; GAO estimates that the number of persons who are now unable to work has risen to approximately 1 million (“Science & tech spotlight: Long COVID,” 2022). Inflation has been raging at record levels for several months (Rubin & Harrison, 2022; “Small business and inflation,” 2022) with the Federal Reserve aggressively raising interest rates as it seeks to bring inflation under control (“Federal Open Market Committee [FOMC] January 31 to February 1, 2023,” 2023). Consumer confidence levels, often an indicator of changes in purchasing, have oscillated. Executives and small business owners across multiple industries are signaling strong expectations of a recession (“CEO confidence deteriorated further heading Into Q4 [Press Release],” 2022; Cox, 2022; Henney, 2022a). Jamie Dimon, CEO of JPMorgan Chase, before a group of investors and analysts earlier in the summer of June 2022 was quoted: “I said there’s storm clouds but I’m going to change it ... it’s a hurricane” (Son, 2022). Recent layoffs associated with the tech industry may now be spreading into other sectors. According to the site [Layoffs.fyi](https://layoffs.fyi), which was established to track tech layoffs since the pandemic, in mid-November 2022 Amazon announced that 10,000 employees, 3% of its total workforce would be laid off; a week before that, Meta (parent company of Facebook) announced laying off 11,000 of its employees (13%). Additional notable tech layoffs – many of which are for the first time – are depicted in Figure 1:

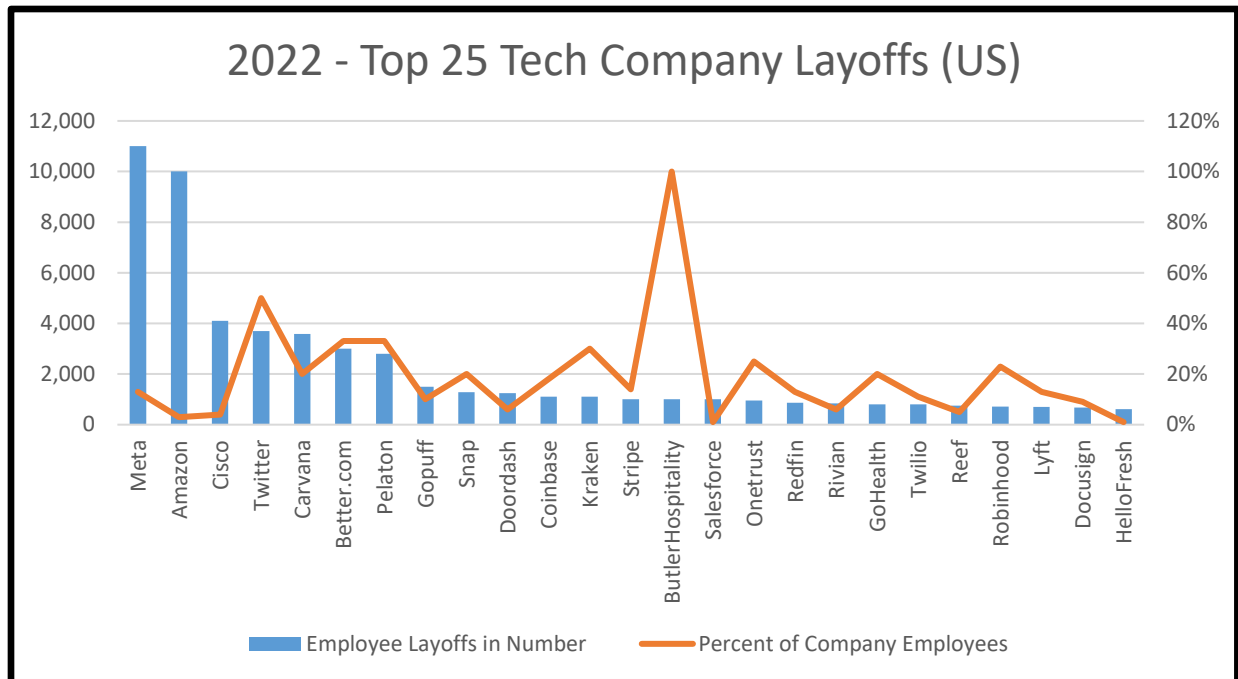


Figure 1. Top Tech Brands and Layoffs (US)².

Given that tech is an overarching term it may be useful to observe from a different vantage point the industries themselves that are involved as well. Sub-industries represented in these layoffs include Food, Healthcare, Fitness, Transportation/Auto, Real Estate, Cryptocurrency, Finance, and Consumer-goods. For instance, in the auto industry, Carvana’s stock price has plummeted in 2022 by approximately 97%; beyond a workforce reduction in May (2022) its CEO announced an additional round of layoffs, 1500 persons, or 8% of its remaining workforce (Wayland & Wapner, 2022). The same letter is quoted in which the executive lamented: “The world around us has continued to get tougher and to do what is best for the business, we have to make some painful choices to adapt.” Freedom Mortgage (industry is self-evident) “engaged in massive layoffs,” which affected at least 50% of its workforce. According to the article covering these layoffs on an industry website, [HousingWire.com](https://www.housingwire.com), the company is among the nation’s largest VA and government lenders and loan servicers with a headcount (before the reduction) of approximately 10,000 employees; numerous other employees and entities are also covered, with a prediction that there would be “dark days ahead” (Furlan Nunes & Kim, 2022).

According to analysis by the global outplacement firm, Challenger, Gray & Christmas, Inc., relying upon BLS data, a dramatic decrease in seasonal hiring across three key sectors (retail, transportation, and warehousing), has been observed: 2021 – 940,300 hires vs. 2022 – 592,400 hires, representing a 37% decrease from year-to-year ("Seasonal hiring update: Retail, transportation & warehousing companies add fewer jobs than last year," 2022).

² Figure developed from data published by the site [Layoffs.fyi](https://layoffs.fyi). using sort features set to identify highest number of employees laid off from US companies, retrieved December 9, 2022.

It appears a wave of similar challenges is beginning to produce symptoms of woes to come for small business owners, mixed with glimmers of optimism. Table 1 below provides a collage of headlines collected between July 2022 to February 2023, in chronological order from the website, [Alignable.com](https://www.alignable.com), which describes itself as a referral network for nearly 6 million small business owners. While it is meant to be neither exhaustive nor conclusive, the table is suggestive, especially given the consistency of these headlines with other data sources. For instance, Federal Reserve Chair Jerome Powell, in a September press conference expressed, “job openings could come down significantly” (Henney, 2022b; Powell, 2022), while widespread tech sector layoffs have become common knowledge. Yet, as of early 2023, small businesses may again be hiring. Under a qualitative research frame such headlines may be regarded as data; the veracity of such data increases once multiple sources are triangulated (Caporaso, 1995; Maxwell, 1992).

Headline	Date
47% Of SMBs Risk Closing by Fall	July 12, 2022
45% of small biz employers stop hiring & 4% plan layoffs	July 20, 2022
Hiring freeze breaks new record: 63% of SMB employers halt hiring, 10% start layoffs	September 6, 2022
Holiday hiring slumps to new low: Just 7% of small biz employers seek seasonal help	October 12, 2022
Record surge in rent delinquency: Up 7% in October, totaling 37% for U.S. SMBs	October 26, 2022
62% of U.S. SMBs say Republicans controlling Congress would benefit their businesses the most	November 3, 2022
Rent crisis breaks '22 record: 41% in U.S. couldn't pay in Nov., up 4%	November 23, 2022
Sounding the alarm: Merchants need you now	December 5, 2022
Layoffs & hiring freezes surge among SMBs: 15% reduce staff (up 7% from 11/2022) & 74% halt hiring (up 12% from 11/2022)	December 9, 2022
40% Can't Pay Dec. Rent (Up 14% From Dec. '21), 38% In Cash Crisis (Up 12% from Dec. '21)	December 30, 2022
56% of Minority-Owned Businesses Couldn't Afford Jan. Rent, Up 6%, While U.S. Rent Delinquency Average Drops 10% from Dec.	January 31, 2023
54% Of Small Business Owners Are Trying To Hire Again, Flipping Trend Of 2022 Hiring Freezes	February 16, 2023

Table 1. Recession (from Alignable.com): Headline Collage³

Finally, additional investigation into rising debt and decreased savings associated with consumers suggests that pressures of inflation have influenced consumers’ decisions around delaying purchases, paying down debt, cutting back on holiday spending, and allocating more income to savings. Such trends could be (and/or become) very concerning to small businesses.

Conclusion

More than a definitive conclusion, we are at a temporary pause taking inventory of where we are. Reflecting upon a stopping place to take inventory of the symptoms that are aggregating – economically speaking – from a range of sources forecasting a recession. The evident mixed messages of healthy unemployment rates, supportive jobs reports, and record-breaking holiday shopping revenues juxtaposed with historically high inflation rates, interest rates for long- and short-term loans for both fueling consumer spending and business loans, historic tech industry layoffs, and low levels of seasonal hiring promotes tremendous uncertainties. Such concerns are

³ Table developed from poll result publishing headlines. Retrieved December 9, 2022, from <https://www.alignable.com/blog>

corroborated by the Conference Board's Consumer Confidence Index, which reported a decrease in confidence from October (102.2) to November (100.2) (Daniel, 2022; Kellstedt et al., 2015; "US consumer confidence declined again in November," 2022), and a slight increase in December only to fall again in January 2023 ("US consumer confidence declined again in January," 2023). As uncertain as times may be, it appears that instead of recovery, we may soon be witnessing more challenges, and "woes on 'Main Street.'"

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PROCUREMENT PREVENTIONS IMPACT ACCESSIBILITY

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Introduction

Generally, organizations have procurement policies and processes that focus on lowest bids and not necessarily on best value. If best value is a desired added value of the item(s) being procured, then accessibility should be among the desired added values of the procurement. However, many organizational policies and practices lack disability inclusivity even though creating accessible

workplaces successfully attracts and retains talented employees who bring different perspectives to the workforce (Yin, Shaewitz & Megra, 2020). Financially, this desired added value is often undervalued and not a requirement unless a procurement officer is familiar with the impact accessibility has within the workplace.

The purpose of this paper is to examine the procurement process to determine how accessibility is integrated within procurement processes. This paper suggests that purchasing can facilitate creating accessible inclusive diverse workplaces that are successful in attracting and retaining talented employees.

Literature Overview

“Accessibility focuses on creating technologies that can assist diverse users by incorporating design features that are flexible and customizable” (Teach Access, 2019). As such, accessibility considers both electronic (e.g., websites, software, and accessible documents) and physical (e.g., ramps, curb cuts, and Braille signage) spaces in building inclusive environments for populations.

Although approximately twenty-five percent of the U.S. population has a disability (CDC, 2020; Teach Access, 2019), organizations have failed to address the core issues associated with using accessible technology to improve the workforce performance and to create employment opportunities for individuals with disabilities (cf. Field & Jett, 2007; McCrudden, 2007; Yin, Shaewitz, & Megra, 2020). Jobseekers may face adverse consequences if they disclose needs for reasonable accommodations associated with the duties and responsibilities of a position (Dalgin & Bellini, 2008). During interviews, jobseekers with *invisible* disabilities such as cognitive, metabolic, and some physical disabilities, are likely to be perceived as less able to perform the job functions as desired by the employer. Those jobseekers with a cognitive disability are considered the least likely candidate to be successful.

Whilst laws, e.g., ADA, prohibit discrimination against individuals with disabilities, these do not necessarily promote efforts for accessible workplaces for the future, and aging, workforce. Considering that the ADA was enacted over 30 years ago, there is still a lack of employment for many people with disabilities (U.S. EEOC, n.d.). Most of the 36 million baby boomers are still employed and their numbers are projected to reach over 42 million in 2026 (BLS, n.d.; PEW, 2019). Hence, the presence of older employees with disabilities in the workforce will increase and a need to re-imagine the workplace is necessary (JAN, n.d.).

Policy initiatives must balance organizational needs to attain appropriate value for goods and services acquired while ensuring transparency in procurement processes that do not unduly enrich vendor bids (Bolton, 2006; McCrudden, 2007). Organizations routinely miss opportunities for successful employee recruiting and retention because of rigid procurement processes that fail to incorporate reasonable accommodations. With most accommodations being less than \$500.00

(JAN, 2020), they may be included in value added bids where procurement decisions are primarily based upon the quality of the goods and services and not exclusively on price. In essence, procurement decisions consider inclusion of individuals based upon the principles of Universal Design.

Universal Design focuses on creating accessible spaces that minimize barriers to individuals regardless of circumstances such as age and disabilities (Teach Access, 2019). Using Universal Design, public procurement processes can assist selected groups of individuals (e.g., individuals with disabilities) who have been historically discriminated against (Arrowsmith, 2010). For example, socioeconomic programs can encourage these groups to actively participate as suppliers of goods and services in procurement processes (Dube, 2005; McCrudden, 2007). Organizations that fail to improve accessibility may find future jobseekers with disabilities choose not to apply. Likewise, organizations that are inclusive with active participation in procurement processes are more likely to have greater participants within the labor force.

Methodology

In considering how procurement processes impact accessibility, this paper conducts a literature review to understand how procurement policies and practices limit acquisitions of accessible equipment and technologies. Using literature as a backdrop for procurement processes, practical reasons for integrating accessibility into purchasing are discussed.

Results and Implications

Three areas that can be put into practice to improve organizational accessible environments that open workplaces to individuals with disabilities: 1) communication and assessment of needs; 2) raising the minimum expectations to purchase for accessibility; and 3) inclusive participation and not extrapolation.

Communication and Assessment of Needs

Ask what is needed and extrapolate the rest is not the best practice. This represents a significant barrier to procurement processes associated from failing to communicate, understand, and assess needs. From initial discussions in determining the desired outcomes, failures can result from incorrectly interpreting organizational policies and procedures and not understanding a vendor proposal (McCrudden, 2007). Communicating incorrect needs can prevent designing solutions that are significantly more appropriate to the situation (Law et al., 2006).

Accessibility might not be a concern due to the current employee demographics, but creating accessible workplaces promotes inclusion of diversity within an organizational culture (McCrudden, 2007; Sun et al., 2017). As able-bodied employees can perform functions without accessibility, organizations may fail to consider alternative work environments and work patterns associated with disabilities. Although individuals may have similar disabilities (e.g. blind), each

can experience a disability differently. Hence, understanding accessibility must be incorporated within organizational culture to raise the minimum expectations to purchase for accessibility.

Raising the Minimum Expectations to Purchase for Accessibility

Minimum requirements have long been a foundation for communicating general needs for solicitations within bidding processes (Arrowsmith, 2010). *Meet the minimum expectation* is not going to gain a competitive advantage for attracting and retaining employees nor improving productivity. Organizations expect employees to make extra efforts towards making customer experiences extraordinary but organizations making extraordinary efforts for employees is limited. As employees connect and communicate with customers, employees should be a central focus in creating a positive, productive, and innovative environment. When organizations are empathetic to employees, employees can be empathetic to customers and stakeholders.

Organizations choosing not to recruit individuals with disabilities due to cost perceptions for reasonable accommodations exceeding benefits of employment narrow applicant options. By creating a minimum standard for *purchasing for accessibility*, organizations can increase their applicant pool of highly qualified jobseekers. Meeting the minimum requirements is often coupled with policies and procedures embracing “*low-bid is the best bid*”. Long-term, with re-work and the cost of poor quality, low-cost may not be the low-cost option and may also place constraints on value-added technological features promoting accessibility. Low bid does not have to be eliminated; it needs augmented. Thus, purchasing for accessibility fosters inclusive environments which can be enhanced by inclusive participation and not extrapolation.

Inclusive Participation and not Extrapolation

Participants of exclusive members in procurement processes yield limited results (Gatere & Shale, 2014). While there may be legal and procedural requirements associated with a purchasing authority (i.e. designation of a procurement officer), an authority can have an advisory group that fosters inclusive environments. Advisors familiar with accessibility and disability provides greater opportunities to find ethical solutions to needs assessment questions (Sun et al., 2017).

In finding solutions, teams that include individuals with disabilities can provide better assurance of purchase functionality (Sun et al., 2017). Moreover, newcomers as well as other employees should be able to freely request accommodations without fear of being discriminated against (Dalgin & Bellini, 2008). Often, the stereotype of disability provides perceptions of lower individual performance and diminished abilities that impact performance evaluations and work assignments. By including individuals with disabilities in procurement process, the desired ethical outcomes can be achieved through inclusion.

Conclusions

Purchasing for accessibility should be a standard and not a value added option or enhancement upon which to base procurement decisions (McCrudden, 2007). The first barrier that needs to be addressed is understanding how accessibility can be successfully achieved within the working environment. Then, the focus can be on the language contained within the policies as it must be

changed to include some minimum standards of accessibility that mandate decisions for removing inferior choices, i.e., those purchases failing to meet minimum accessibility standards. Finally, pre-bid or pre-procurement processes must include individuals familiar with accessibility and individuals who can benefit from accessibility. This collaboration helps facilitate understanding the desired procurement outcomes to include within the procurement specifications that will lead to successful purchases.

In going forward, successful procurement processes need to include in best practices the three points presented: 1) communication and assessment of needs; 2) raising the minimum expectations to purchase for accessibility; and 3) inclusive participation and not extrapolation. The inclusion of these points helps ensure sustained attention to purchasing for accessibility as procure officers and personnel arrive and depart in their roles and it is essential that the framework be integrated as part of the organizational culture that focuses on social responsibility. Procurement policies and processes that limit acquisitions of accessible functions, enhancements, equipment, and technologies ultimately fail to create inclusive environments.

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EFFECTS OF THE NEEDLE EXCHANGE PROGRAM AND ITS CURRENT STATUS IN WEST VIRGINIA

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Bloodborne Diseases, Healthcare Costs, Needle Exchange Program, Syringe Exchange Programs, West Virginia

Introduction

One of the main problems that have impacted the state of healthcare in West Virginia has been the rising costs of treatments for bloodborne infections (Bates et al., 2019). Bloodborne pathogens and their resulting diseases have commonly spread by exchanging contaminated needles (Denault & Gardner, 2021). In West Virginia, Needle Exchange Programs (NEPs) have been implemented to reduce the transmission of certain infections, such as HIV, hepatitis B, and hepatitis C, which have been more common among drug users (Beck & Kersey, 2018). In 2015, West Virginia had the second-highest rate of cases of hepatitis C Virus (HCV) in the country (3.4 per 100,000) (Davis et al., 2018). The overdose rate has drastically increased over the last decade in the US (Dasgupta et al., 2018). In 2015, West Virginia had the highest overdose rate of 33,091, accounting for 41.5 deaths per 100,000 people (Hedegaard et al., 2017). The HIV rate increased by over 300% in West Virginia, between 2007 and 2015, with the most frequently indicated risk factors for acquiring HIV infections being used drugs distributed on the street and injection drug use (Rudd et al., 2016).

Literature Overview

In response to these elevated rates, NEP opened in West Virginia starting in 2015, with the first onset in one of the largest cities, Huntington (Davis et al., 2017). With an average of roughly 41.5 deaths per 100,000 people in 2015 related to drug overdoses, West Virginia has also been labeled a center of illegal drug use (Dydyk et al., 2021). These spikes in drug overdoses have been related to over-prescription cases that plagued the region previously (Okorie, 2019). West Virginia was found to have led the US in the opioid crisis in 2015, with the state dominating the country's opioid-related overdose deaths (Kaski et al., 2019). The same year, West Virginia was also determined to be home to one of the country's highest synthetic opioid death rates, with roughly 26.3 persons per every 100,000 persons (Seth et al., 2018). Lastly, West Virginia, behind Indiana, had the second-highest hepatitis C virus (HCV) infection rate in 2018, at 3.9 persons per 100,000 (CDC, 2018). The problem of contaminated needle utilization has been one that has plagued West Virginia for years (Vestal, 2016).

NEPs have intended to target even the worst needle sharers. Distributive syringe sharers have been described as self-identified users at needle exchange sites who report having shared their syringes multiple times in a previous 30-day period (Adams et al., 2019).

Methodology

The purpose of this study was to examine the effects of the needle exchange program in West Virginia to determine its influence on healthcare costs, rates of infectious disease, and the prevalence of drug use as well as to analyze its current legal policy. This study utilized mixed

methodologies with a literature review complemented by semi-structured interviews with specialists in the field to cover data that has yet to be published in the academic literature.

Results

The research showed that implementing NEP in West Virginia led to decreased rates of HIV and hepatitis among injection drug users. Preventative measures taken by the program also helped to avert future healthcare costs related to treating infectious diseases. The review suggested a positive relationship between implementing NEP and healthcare outcomes, healthcare costs, and the spread of bloodborne diseases. Despite the growing evidence that a well-run needle and syringe program can save lives and healthcare costs and have an impact on the community in a positive way, it has remained politically charged and difficult to implement. The West Virginia Legislature passed Senate Bill 334, the Syringe Services Program Act, in July 2021. The Bill placed severe limitations on NEPs and required various licensure processes. Roundly criticized by those in the field, many said NEP could not adequately operate with Senate Bill 334 as the new law; contrary to the advice and objections from leaders in the field, the West Virginia Legislature decided to control these syringe services (Milan Puskar Health Right v. Crouch, 2022). Since the law's passage, many NSPs have been forced to close their doors, and rates of bloodborne diseases are up ticking (Stuck, 2021).

For an infected patient with HIV, lifetime costs have been found to total more than \$450,000 (Bingham et al., 2021). Researchers have found that syringe service programs (SSPs) have helped lower infection rates, lessened the presence of needles in public places, and reduced healthcare costs (CDC, 2019).

West Virginia's Opioid Epidemic Next Harm Reduction organization, a non-profit online website that provides supplies, education, and support to drug abuse users, found that harm reduction programs and needle exchanges did not increase or promote substance or drug abuse but rather facilitated people to get the proper care they needed (PBS, 2021). It was explained that removing NEP not only facilitated HIV and hepatitis C transmission but forced drug users to engage in risky behavior, such as sharing needles or utilizing the same needle up to 20 to 30 times (PBS, 2021). NEPs have been found to reduce HIV transmission rates by one-third to two-fifths (ACLU, 2021). Many have provided access to sterile paraphernalia, acting as access points to discard used needles and even providing condoms and additional services to reduce the spread of disease in the community (Fernandes, Cary, Duarte, Jesus, & Alarcao, 2017). Participants of NEP were found to have been five times more likely to enter drug treatment when compared to those who had never participated in the program (ACLU, 2021).

In 2017, Cabell County, WV, recorded 831 non-fatal overdoses and 182 overdose deaths (Fire Chief for the City of Huntington Fire Department Interview, 2021). In 2018, however, with the continued implementation of NEP in the county, the number of non-fatal overdoses decreased by 40%. Another 25% reduced it for fatal overdoses (Fire Chief for the City of Huntington Fire Department Interview, 2021). In total, the clean needle exchange program was found to have prevented an estimated 200 overdoses in Cabell County since 2015, the year of implementation of the program (Physician Specialist Cabell County Health Department, 2021). According to this

specialist, the estimated cost of one overdose death was \$1.1 million, and healthcare costs associated with IV drug use were valued at \$1 million. Translated, the funds saved in preventing one overdose could run the clean needle exchange program for two years (Physician specialist Cabell County Health Department, 2021).

Another study found that the preventative HIV costs associated with needle-exchange programs totaled between \$4,000 and \$12,000 annually per injecting drug user (Iozzo, 2011). For an average to a smaller city in the US, the cost of running a needle exchange program was deemed somewhere near \$160,000 or about \$20 per user per year (ACLU, 2021). Treating an individual for HIV, specifically an injecting drug user, costs \$190,000 yearly (Iozzo, 2011). Therefore, the costs associated with running a needle exchange program amounted to less than the treatment costs for one infected HIV patient in some cities. A single tri-state needle exchange program that services Kentucky, Ohio, and West Virginia reported collecting more than 27,000 needles (Bixler, et al., 2018). A spokesman for the program explained that those are 27,000 needles that would have been left in the streets and exposed citizens to public harm if not for the operation of NEP (Suro, 2017).

Other actions that included going beyond handing out clean needles or educating and providing resources to needle and syringe users included NEP successfully catching HIV outbreaks. Through its screening and questioning of needle users, a needle exchange group in Charleston, West Virginia, named Solutions Oriented Addiction Response or SOAR, discovered an HIV outbreak, specifically in Cabell County, that spread to roughly 50 individuals (Vergano, 2021). The severity of the need for NEP has been showcased in the fact that two of the four most significant HIV outbreaks to occur in the US in 2021 occurred in West Virginia and that these NEP helped to eliminate the rapid transmission of HIV primarily from those who injected heroin, fentanyl, and methamphetamines because of opioid addiction (Vergano, 2021). It has also been reported that the use of contaminated needles in West Virginia was a public health disaster as Charleston, with nearly 178,000 citizens, had been found to have a higher rate of new HIV cases, with 35 new cases in 2020 compared to New York City who had a recorded 36 HIV cases tied to intravenous drug use in 2019, but with a population of more than 8 million (Raby, 2021).

An examination into the importance of NEP found that with an annual \$10 to \$50 million funding increase, 194-816 HIV infections would be averted (Nguyen et al., 2014). The cost per infection prevented totaled somewhere between \$51,601 and \$61,302, meaning that the rate of financial return would be between 7.58 and 6.38 (Nguyen et al., 2014). In March 2018, with Kanawha County in the middle of an overdose epidemic followed by an HIV outbreak, the needle exchange program in Charleston, WV, suspended health department operations (Pollini, 2019). The state capital was left with little to no sterile needles for drug users, leaving needle users desperate, digging in the dirt or trash for old needles (Leffler, 2021). This allowed for a spike in the spread of infectious bloodborne diseases within the region and resulted at the end of one of the most studied methods to prevent the spread of HIV and hepatitis C (Peace, 2020). From 2018 to 2019, when the Kanawha health department needle exchange program remained disbanded, there was an uptick in HIV cases related to intravenous drug use from 12.5% to 62.4% (Raby, 2021). Thus, an association between the closing of the needle exchange program was recognized as a reason for the increased rates of hepatitis C and HIV in the state (Davis et al., 2019).

Conclusion

The literature review and semi-structured interviews suggested a strong association between implementing NEP and decreased incidents of bloodborne infections, increased health outcomes, and decreased health costs.

The study showed that implementing NEP in West Virginia led to decreased rates of HIV and hepatitis among injection drug users. Preventative measures taken by the program also helped to avert future healthcare costs related to treating infectious diseases. Despite the growing evidence that a well-run needle and syringe program can save lives and healthcare costs and have an impact on the community in a positive way, it has remained politically charged and difficult to implement. The barriers set up by the West Virginia Legislature with Senate Bill 334 have been costing West Virginia's taxpayers possibly millions and millions yearly in excess healthcare costs.

Senate Bill 334, the Syringe Services Program Act, severely limited NEPs and required various licensure processes. Since the law's passage, many NSPs have been forced to close their doors, and rates of bloodborne diseases are up ticking. Roundly criticized by those in the field, many said NEP could not adequately operate with Senate Bill 334 as the new law; contrary to the advice and objections from leaders in the field, the West Virginia Legislature decided to control these syringe services.

There has been significant controversy regarding NEP in West Virginia as there has been an opinion that NEP enables drug users and needle users. However, this study is one of many that have confirmed that implementing NEP helped positively impact healthcare costs and outcomes. The CDC also echoes this by allocating \$7.7 million to States strengthening syringe service programs. It is time for the leadership in West Virginia to accept the established science and quit being poised to remain last in every measure of success. Assuming the trend is not reversed, and Senate Bill 334 is not repealed, the West Virginia Legislature will exacerbate the problems of the opioid epidemic and cost a considerable amount of funds for West Virginia taxpayers.

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IMPACTS OF PERSONAL CULTURAL ORIENTATIONS ON COLLEGE STUDENTS' PSYCHOLOGICAL HEALTH AND PREVENTIVE BEHAVIORS DURING THE COVID 19 PERIOD

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Introduction

The outbreak of the COVID 19 pandemic in January 2020 brought a life changing crisis to all human beings across the world in ways of significantly affecting people's physical and mental health. The disruptions caused by the COVID 19 are especially traumatic for those who are in vulnerable situations such as college students living on campus (Lancaster, Arango, 2021). Many college students were required to leave their dormitories and be separated from their social groups while being expected to continue their academic work as usual (Copeland et al, 2021). We focus our study on this vulnerable group to examine how individuals respond to such pandemic period behaviorally and psychologically. We try to understand how people's personal traits such as

personal cultural orientations would influence their psychological health and shape their coping behaviors in the period of pandemic.

While most research about how cultural orientations affect behavior pattern had been focused on national culture, few research examined personal cultural orientations and its relationships with people's behavioral and psychological activities. Individuals from the same country may not share similar cultural characteristics (Sharma, 2009). Therefore, personal cultural orientations are both conceptually and empirically different than natural cultural dimensions. Personal cultural orientations are based on individuals' social upbringing so that individuals may demonstrate diverse cultural traits. Studies demonstrate that personal cultures shape individuals' behaviors and ultimately predict individuals' well-being during COVID 19 (Nair, 2022).

Literature Overview

We adopted Sharma's concept of personal cultural orientations and the related multi-dimensional scale. Specifically, Sharma identified eight dimensions of personal cultural orientations: independence, interdependence, power, social inequality, risk aversion, ambiguity intolerance, masculinity, gender equality, tradition, and prudence. Independence is defined as associated with acting independently, a sense of freedom, autonomy, and personal achievement. Interdependence is associated with acting as a part of one or more in-groups, having a strong group identity, a sense of belongingness, and valuing group goals over individual goals. Power represents the extent to which individuals accept differences in the power held by various members in any organization and social inequality is the degree of inequality/hierarchy among people in society in which an individual accepts. Risk aversion is the extent in which people are reluctant to take risk and ambiguity intolerance is the degree to which people can tolerate uncertain situations and ambiguity. Masculinity represents the expression of assertiveness, self-confidence, aggression, and ambition whereas gender equality is the extent to which people perceive men and women as equal in terms of social roles, capabilities, rights, and responsibilities. Tradition is representing respect for traditional values such as morality, respect for one's heritage, social consciousness, and hard work. Prudence represents planning, perseverance, thrift, and future orientation (Sharma, 2009).

Research demonstrates that social isolation is linked with adverse health consequences including depression. Loneliness can have negative impact on an individual's physical, mental and cognitive health (Philosophical Transactions of the Royal Society B, Vol 370, No. 1669, 2015). Yet highly independent people are self-reliant, strong-willed, and able to conquer such negative impacts in face of the obstacles. Thus they tend to adapt quickly and function normally during the COVID 19 period despite not being able to interact with others. Meanwhile, we can also anticipate that highly independent people are problem-solvers who would positively and actively seek for possible solutions. We thus propose:

H₁: People with higher levels of independence will relate to fewer mental problems than people with lower levels of independence.

H₂: People with higher levels of independence will more actively engage in coping strategies than people with lower levels of independence.

H₃: People with higher levels of independence will more actively engage in prevention behaviors than people with lower levels of independence.

H₄: People with higher levels of interdependence will relate to more mental problems than people with lower levels of interdependence.

H₅: People with higher levels of interdependence will less actively engage in coping strategies than people with lower levels of interdependence.

H₆: People with higher levels of interdependence will less actively engage in prevention behaviors than people with lower levels of interdependence.

Evidence suggests that individuals with the low socio-economic status have high likelihood of exposure to stressors across the life course and have less efficient and few options of coping strategies due to the limited social resources to combat stressors and seek for social support (Fluharty, Fancourt, 2021). People who believe in social inequality accept that people of different social classes have unequal access to social resources and benefits, so those people tend to remain status quo and avoid any efforts to enable changes. Similarly, people of high-power distance would feel they lack the necessary resources to change for the better and find it easier to accept what is given. Therefore, People of a high-power distance would-likely not to actively cope and prevent against COVID 19. Thus, we propose:

H₇: People with higher levels of power distance will relate to more mental problems than people with lower levels of power distance.

H₈: People with higher levels of power distance will less actively engage in coping strategies than people with lower levels of power distance.

H₉: People with higher levels of power distance will less actively engage in prevention behaviors than people with lower levels of power distance.

H₁₀: People with higher levels of social inequality will relate to more mental problems than people with lower levels of social inequality.

H₁₁: People with higher levels of social inequality will less actively engage in coping strategies than people with lower levels of social inequality.

H₁₂: People with higher levels of social inequality will less actively engage in prevention behaviors than people with lower levels of social inequality.

Research proposes that with higher levels of risk aversion have lower tolerance and do not like new stuff (Petrocchi, S., Iannello, P., Ongaro, G. *et al.*, 2022). People of high risk aversion are reluctant to take risks and try to avoid risky decisions. As a result, they would have more mental stress as they try to think of various possible ways to avoid risk or make careful planning before they take an action. As a result, they will less actively engage in coping/preventing against COVID 19 because they have a lower tolerance towards new stuff that they are uncertain about.

H₁₃: People with higher levels of risk aversion will relate to more mental problems than people with lower levels of risk aversion.

H₁₄: People with higher levels of risk aversion will less actively engage in coping strategies than people with lower levels of risk aversion.

H₁₅: People with higher levels of risk aversion will less actively engage in prevention behaviors than people with lower levels of risk aversion.

Intolerance for ambiguity is directly linked to distress therefore representing a risk factor for mental health (Petrocchi, Iannello, Ongaro, *et al.*, 2022). People with high levels of ambiguity intolerance will have more mental problems because they can only function well with ~~need~~ structure and orders. As their normal structured daily lives have been disrupted by COVID 19, it causes people with high levels of ambiguity more mental stress. As people with high levels of ambiguity intolerance want to go back to their structured lives, they would actively prevent and cope with COVID 19 and follow the regulations in hope of returning to their normal lives as soon as possible.

H₁₆: People with higher levels of ambiguity intolerance will relate to more mental problems than people with lower levels of ambiguity intolerance.

H₁₇: People with higher levels of ambiguity intolerance will more actively engage in coping strategies than people with lower levels of ambiguity intolerance.

H₁₈: People with higher levels of ambiguity intolerance will more actively engage in prevention behaviors than people with lower levels of ambiguity intolerance.

People with higher levels of masculinity are more materialistic (Xiao, Tessema, 2019). They have higher self-confidence and believe themselves less vulnerable. Believing themselves vulnerable during the pandemic could hurt their pride. This leads them to more mental problems as they try to maintain this reputation throughout COVID 19. People with high levels of masculinity less actively engage in coping strategies and prevention behaviors because they find themselves less vulnerable and do not see the point of them having to cope as they believe they are stronger.

H₁₉: People with higher levels of masculinity will relate to more mental problems than people with people with lower levels of masculinity.

H₂₀: People with higher levels of masculinity will less actively engage in coping strategies than people with lower levels of masculinity.

H₂₁: People with higher levels of masculinity will less actively engage in prevention behaviors than people with lower levels of masculinity.

Similarly, people with high levels of gender inequality will have more mental problems and not want to cope and prevent against COVID 19 because people with high levels of gender inequality inherently believe and acknowledge gender differences and accept the difference of vulnerability between male and female.

H₂₂: People with higher levels of gender inequality will relate to more mental problems than people with lower levels of gender inequality.

H₂₃: People with higher levels of gender inequality will less actively engage in coping strategies than people with people with lower levels of gender inequality.

H₂₄: People with higher levels of gender inequality will less actively engage in prevention behaviors than people with lower levels of gender inequality.

According to research, culture is a strong determining factor in motivating or demotivating treatment-seeking behavior. It helps determine whether someone seeks support from families and communities, how, and where they seek help. People with high levels of tradition are strong in their faith in which their faith provides them with guidelines. Similarly, people who have strong ties with their tradition will follow what their tradition tells them to do. Therefore, they do not have to mentally stress about what to do during COVID 19 as they just have to follow what their faith or tradition guides them to do. People with high levels of tradition will less actively engage in coping and prevention behaviors against COVID 19 because they believe that the guidance from their faith is sufficient, and they do not need to take additional steps to tackle COVID 19.

H₂₅: People with higher levels of tradition will relate to fewer mental problems than people with lower levels of tradition.

H₂₆: People with higher levels of tradition will less actively engage in coping strategies than people with lower levels of tradition.

H₂₇: People with higher levels of tradition will less actively engage in prevention behaviors than people with lower levels of tradition.

People with high levels of prudence consider for the future (long-term planning) and therefore need to take additional aspects into consideration rather than just worrying about the present which causes more mental stress. As a result, people with high levels of prudence will actively engage in coping strategies and prevention behaviors against COVID 19 so that they are better prepared and decrease the chance of getting COVID 19, which helps them keep their long term planning goals on track.

H₂₈: People with higher levels of prudence will relate to more mental problems than people with lower levels of prudence.

H₂₉: People with higher levels of prudence will more actively engage in coping strategies than people with lower levels of prudence.

H₃₀: People with higher levels of prudence will more actively engage in prevention behaviors than people with lower levels of prudence.

Methodology, Limitations and Direction for Future Research

A survey was created based on three well established scales of personal cultural orientations (Sharma, 2010), Hospital Anxiety and Depression Scale (Zigmond, Snaith, 1983), and Brief COPE (Carver, 1997). The survey was distributed to students of different majors at Eastern Kentucky University using Qualtrics. Checking questions were used throughout the survey to determine the reliability of student responses. SPSS will be used for the ANOVA analysis to test our hypotheses.

Future research needs to go beyond the student sample in order to improve its finding's generalization.

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THE EFFECT OF MAGNET HOSPITALS ON NURSING BURNOUT

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Introduction

The World Health Organization [2019] defined burnout as a syndrome caused by chronic job stressors that are not successfully managed, characterized by exhaustion, depersonalization, job

detachment, and feelings of inadequacy (WHO, 2019). According to Murthy [2022], the nursing burnout crisis was underway before COVID-19. Nurse burnout recognized pre-COVID-19 was due to systemic organizational problems such as inadequate organizational support and underinvestment in public health (Murthy, 2022).

A 2022 survey of 2500 nurses exhibited increased rates of burnout during the pandemic, with 75% of respondents experiencing burnout, while 65% of those surveyed expressed their desire to leave the healthcare field (Johnson, 2022). Additional research demonstrated that nearly one-third of nurses surveyed claimed they would leave their jobs by the end of 2022, 44% of which cited burnout and high stress as the primary reason for leaving employment (Landi, 2022).

Literature Overview

According to the 2022 Nurse Salary Research Report, nurses stated that factors other than salary had contributed to nursing burnout. Despite nurse salary increases, healthcare providers need help recruiting and retaining nurses (Kreimer, 2022). The literature review revealed that symptoms and clinical diagnoses such as depression, burnout, and fatigue were common for nursing staff. Nurses had depression rates more than double that of employees in any other field (Thew, 2018). Additional research suggested that healthcare workers' intention to leave healthcare doubled from 2020-2021 (Almendral, 2022). The data indicated that burnout was the most significant controllable reason for nurses quitting healthcare, emphasizing the importance of organizational interventions (Fontaine, 2021).

Bakhamis et al. [2019] defined factors associated with nurse burnout as personal, management, and organizational factors, such as excessive workload, staff shortages, and low nurse-to-patient ratio. As nurses experiencing burnout left their positions, peer nurses experienced increased stress (Bakhamis, Paul, Smith, & Coustasse, 2019). Consequently, hospitals aim to prevent increased patient injuries, medical errors, and mortality rates by decreasing burnout among nursing staff (Bakhamis et al., 2019).

An additional literature review of 20 studies that examined nurses from 14 countries, including the United States, suggested that a high dimension of emotional exhaustion in nurses was associated with increased patient mortality. In contrast, depersonalization was associated with increased adverse events such as medication errors (Jun et al., 2021). The authors also found that high levels of nurse burnout were associated with reduced commitment to organizations and reduced job productivity. Furthermore, nurses who regularly worked 12-hour or longer shifts experienced burnout and were likelier to experience lower job satisfaction (Dall'Ora et al., 2015).

With nurse burnout acknowledged as a system-wide concern, the U.S. Surgeon General recommended interventions to combat nurse burnout that included adequate pay, increased mental health services, improved access to health insurance and personal protective equipment, investment in public health services, and a reduction in administrative burdens (Murthy, 2022). Additional research demonstrated that most healthcare organizational interventions in 2022 had focused on addressing nurse burnout (Pijpker et al., 2019). The organizational interventions included improving job control, social support, working well in the proper environment, and effort-reward balance (Giga et al., 2018).

An additional review of the literature considered the structure of Magnet-designated hospitals and the likelihood that the requirements of this designation might affect nursing burnout. Magnet hospitals were designated as such by the American Nurses Credentialing Center (ANCC) for meeting the requirements of its Magnet Recognition Program (ANCC, n.d.). The Magnet Recognition Program has several standards for excellence, including transformational leadership, structural empowerment, innovations and improvements, exemplary professional practice, and empirical quality results (ANCC, n.d.) One of the aspects of the structural empowerment requirement for Magnet recognition was shared governance, defined as a governance model where nurses share power, input, and decision-making with hospital administration, usually via committees and councils (Collins, 2017).

Methodology

The purpose of this research was to examine Magnet-designation status in U.S. hospitals, specifically shared governance and structural empowerment, and its effects on the rates of nurse burnout, nurse turnover, and job satisfaction of nurses. This study utilized mixed methodologies with a literature review complemented by semi-structured interviews to gain perspectives about burnout with relevant answers used in the discussion. The literature reviewed consisted primarily of peer-reviewed journals, news articles, and data analyses from within the last 12 years. Interviews were recorded with the nurses' consent, and the answers were transcribed. Interviews were approved by the Marshall University Institutional Review Board (IRB).

Results

An analysis of cross-sectional data from 425 U.S. hospitals examined the involvement that nurses had in shared governance ranging from the least engaged, where nurses did not serve on hospital committees, to the most engaged, where nurses had the opportunity to participate in policy decisions (Kutney-Lee et al., 2016). Magnet Hospitals accounted for 46 of the 425 hospitals in the study; of these, 36 were found to have nurses highly engaged in shared governance, and 10 had nurses that were moderately engaged, with no Magnet hospitals being rated as having minor engaged nurses (Kutney-Lee et al., 2016). Nurses who were highly engaged in shared governance reported significantly better job outcomes than less engaged nurses, with 13% of most engaged nurses having reported being dissatisfied with their jobs compared to 43% of the minor engaged nurses (Kutney-Lee et al., 2016). In addition, 23% of highly engaged nurses said they experienced burnout, compared with 52% of the least engaged nurses and 8% of the most engaged nurses stating their intentions to leave, compared to 13% of minor engaged nurses (Kutney-Lee et al., 2016).

An initiative by a Magnet-designated U.S. hospital sought to improve shared governance and decision-making to improve nurse job satisfaction (Oss et al., 2020). Interventions included distributing literature about shared governance to nurses and meetings to enhance relationships between nurses and management. A follow-up survey of the nursing department found that 53% of nursing units demonstrated improvement in registered nurse (RN) satisfaction with involvement in decision-making, and 48% of units noted improvement regarding RN job satisfaction about autonomy and job duties (Oss et al., 2020).

A survey regarding work environment and nursing outcomes was given to nurses from 567 hospitals in Pennsylvania, California, Florida, and New Jersey, with 46 of these being Magnet hospitals (Kelly et al., 2011). The work environment aspects studied included nurse participation in hospital affairs, nurse manager ability, and organizational support, and outcomes measured included burnout, job satisfaction, and intent to leave their jobs (Kelly et al., 2011). The results of the survey found that nurses in Magnet hospitals were 18% less likely to report job dissatisfaction and 13% less likely to have high levels of burnout as compared to nurses from non-Magnet hospitals, as well as being less likely to leave their positions (Kelly et al., 2011).

Additional research was performed on cross-sectional data, which included over 20,000 nurses in 523 U.S. hospitals, of which 83 had a Magnet designation. The analysis results found that Magnet hospital status reduced burnout, with 40% of the Magnet hospitals studied being in the lowest quartile of burnout scores (Schlak et al., 2021).

A correlational study that examined a sample of 2,958 nursing units in 497 U.S. hospitals analyzed reasons for turnover and compared Magnet and non-Magnet hospitals (Park et al., 2016). The results indicated that turnover due to work environment factors was significantly less in Magnet hospitals than non-Magnet hospitals, with 14.21% of separated Magnet hospital nurses indicating that work environment was the reason for separation versus 17.09% for non-Magnet nurses (Park et al., 2016). Additionally, a cross-sectional study of longitudinal data from 1,884 nursing units in 306 U.S. hospitals found evidence that Magnet hospitals had 16% lower RN turnover than non-Magnet hospitals (Staggs & Dutton, 2012).

Another study examined in the literature review sought to compare the performance of military hospitals to civilian Magnet hospitals and non-Magnet civilian hospitals. Performance indicators analyzed included job satisfaction and the intent of nurses to leave their jobs (Patrician et al., 2022). Results indicated that job satisfaction scores were higher in Magnet hospitals than non-Magnet hospitals, with a median score of 68.24 vs. 65; this was statistically insignificant (Patrician et al., 2022). The study also found that intent to leave was not statistically significantly different in Magnet Hospitals vs. non-Magnet hospitals. However, that nurse participation in hospital affairs, a proxy measure for shared governance, was significantly higher in Magnet hospitals at $p=0.0014$ (Patrician et al., 2022).

Additional research included data analysis from 157 non-Magnet and 14 Magnet hospitals with 675 and 162 nurse respondents, respectively, to define the differences in nurse satisfaction and work environment between the two types of hospitals (Trinkoff et al., 2010). There were no statistically significant differences in job satisfaction, 79% for Magnet hospitals vs. 71.9% for non-Magnet hospitals (Trinkoff et al., 2010). The results also indicated no significant difference in practice environment scores between Magnet and non-Magnet hospitals, with a score on this measure of 51.0 for Magnet and 50.0 for non-Magnet hospitals (Trinkoff et al., 2010).

One study that surveyed new RNs examined the differences in job satisfaction and reports of workplace hostility between nurses in Magnet and non-Magnet hospitals (Hickson, 2015). This analysis also found no significant difference between Magnet and non-Magnet hospitals regarding job satisfaction, with a mean score of 80.9 for nurses in Magnet hospitals and 74.3 for non-Magnet

hospitals (Hickson, 2015). Finally, some nurses claimed that they were still expected to work 12-hour shifts and take on documentation tasks in Magnet hospitals, which could have led to burnout (Bachert, 2017).

Conclusion

The literature review found evidence that Magnet hospitals had better nurse burnout, turnover, and job satisfaction outcomes than non-Magnet hospitals. Several reviewed articles showed no significant difference between Magnet and non-Magnet hospitals for these performance metrics. However, findings were only consistent across some studies.

Other studies found no significant difference in work environment factors between Magnet and non-Magnet hospitals. These studies noted that despite earning a designation as a Magnet hospital, these organizations function similarly to non-Magnet hospitals in practice (Trinkoff et al., 2010).

The practical implications of this study demonstrate that although Magnet hospitals have generally shown better outcomes regarding nurse satisfaction, retention, and lower levels of burnout, more research is needed to determine what specific aspects of the Magnet program are the most significant contributors to this success. Results generally indicate that engaged nurses, regardless of Magnet or non-Magnet status, typically demonstrate more favorable performance indicators related to job satisfaction. Successful aspects of the Magnet program, such as shared governance, could be more widely adopted to combat nurse burnout in U.S. hospitals.

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DO THE MATH: OVERCOMING MATH ANXIETY

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Introduction

Math anxiety among college students is an enduring problem (Richardson and Suinn 1972; Dew, Galassi and Galassi 1983) and perhaps even a growing problem (Hamza and Helal 2013; Van Gundy, Morton, Liu and Kline 2006). An initial review of the extant research reinforces that this is a valid and valuable topic to study. There are studies on how math anxiety develops in early years, as early as Kindergarten (Lu, Li, Patrick, and Mantzicopoulos, 2021). There is research on math-averse parents' contributions to math anxiety among their children and the building of math-confidence in children by math-confident parents (Elliott, Bachman, and Henry, 2020).

Eastern Kentucky University's College of Business has introduced a new course for undergraduate business students that hopes to alleviate some math anxiety. The course, "Fundamentals of Problem Solving with Excel", includes several sets of quantitative reasoning/math/logic problems, presented in the form of word problems. Students must read and understand each problem, determine what is known and what is not known, and ultimately construct an equation to solve the problem. Math anxiety has been apparent among many students when these problem sets were introduced. Anecdotal observations from recent semesters show students initially dreaded this aspect of the coursework, protested the math problem sets, and then eventually gained confidence in their ability to solve these problems.

This research proposes a method to study math anxiety and perhaps find evidence that these quantitative problem sets help in overcoming it. The current proposal is to study the before and after perceptions of students in the “Problem Solving with Excel” class and what that might show about the appropriate methods and steps to overcome math anxiety. A compelling case can be made for a “practice makes perfect” approach, and that the best way to overcome math anxiety is to “do the math”, repeatedly practicing the skills until self-confidence is gained and the skills become routine for the students.

Literature Overview

Extensive research has been performed related to this topic. Math Anxiety is defined as “apprehension and increased physiological reactivity when individuals deal with math, such as when they have to manipulate numbers, solve mathematical problems, or when they are exposed to an evaluative situation connected to math” (Luttenberger, et al., 2018, p. 312). This apprehension contributes to lack of development of math abilities and leads to a built-in excuse (e.g., “I am not good at math”) going into college and adulthood.

The literature goes on to say that if teachers demonstrate math averse attitudes, students are more likely to develop their own such feelings and attitudes (Lin, et al., 2017). The lesson here is that children learn the behaviors they see in their teachers and parents, and math anxiety is no exception.

Culture and gender are also thought of as factors involved in development of math anxiety. In a study of students from over 40 different countries, it was found that in certain Asian cultures, students are more likely to have high math anxiety despite high math aptitude scores; while in certain Western European cultures students are more likely to have low math anxiety with high math aptitude scores (Lee, 2009). Gender differences studies have shown a higher likelihood of math anxiety in young female students, although this perception is not carried through to math performance, which is more likely to show no correlation between gender and math performance (Bieg, et al., 2015).

Regardless of the origin of the math anxiety, if an incoming college student has math anxiety, the question is what can be done to reduce it. Various “interventions” have been studied to mitigate the effects of math anxiety. These studies fall into two categories, mathematical interventions, and cognitive-behavioral interventions (Balt, et al., 2022). In mathematical intervention studies, various methods are used including the use of digital math games, math software, musical/math training, recreational math games, etc. (Balt, et al., 2022). In cognitive-behavior intervention studies, training on coping strategies, student writing assignments about their math anxiety, therapy sessions, etc., are utilized. Balt, et al., (2022) summarizes many studies using either one of these two approaches and reports findings that do not support the effectiveness of one method over another. Further, both approaches have potential positive effects, but more research into the subject is needed (Balt, et al., 2022).

The proposed research will focus on perceptions of college-level students before and after a mathematical intervention program. While most of the studies Balt, et al. (2022) summarized regarding mathematical interventions involved much younger learners, the effort of preparing the mathematical intervention program and administering it will be similar. The most likely method

to gauge student perceptions is a pre-survey and an exit survey, before and after the mathematical intervention problem sets are completed.

Another area for further investigation is the link between online instruction and math anxiety, as studied by Van Gundy in 2006. The finding there was that web-based instruction that included discussion board activities are of great benefit to college students in statistical courses. More widespread use of such web-based instruction techniques was advocated. There is a hint of cognitive-behavioral intervention in discussion board “conversations” about the mathematical coursework, suggesting a mixed-model approach might be the best approach, with a direct mathematical intervention program and an indirect cognitive-behavioral aspect using online discussion boards to allow the students to discuss their perceptions with other students.

Methodology

The current proposal is to examine math anxiety in a phenomenological study to answer the following questions, 1) how math anxiety affects students, 2) what are contributing factors to the development of math anxiety, 3) do math interventions help students overcome math anxiety, and 4) if an extensive math anxiety intervention is delivered, such as the problem sets delivered in the “Problem Solving with Excel” course, will math anxiety feelings diminish, and finally 5) is this something that should be more prevalent in higher education.

There is an existing survey question set referred to as the MARS (Math Anxiety Rating Scale) (Richardson and Suinn, 1972). The proposal is to use an adaptation of this question set in a pre-intervention survey for students in the course to identify students with an elevated level of math anxiety, and students with a low level of math anxiety. A set of interviews of high math anxiety students should be done to identify contributing factors to their math anxiety.

After the intervention of the math problem sets is delivered, a post-assessment should be done to determine if math anxiety levels have been reduced. It would be interesting to measure whether the effects are similar on both high anxiety students versus low anxiety students.

Data for this research project has yet to be collected. The plan is to collect data in a pre-assessment survey, interviews and a post-assessment survey in the “Problem Solving with Excel” classes in the next full regular semester of operations at Eastern Kentucky University, Fall 2023, and present the data and analysis at this conference next year.

Conclusion

With this initial research effort, math anxiety is seen as a real and significant phenomenon, one that limits students’ abilities and potential for success in advanced studies and in adult life in general. The focus of the proposed study is the undergraduate student pursuing a business-related major, but the potential findings would very likely apply to other disciplines. Students in statistics, engineering and other areas have been studied, but studies of business students were not found. After this initial look at the topic, it is evident that this is a worthwhile and potentially very productive area of study.

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USING NEW DISRUPTIVE INTERMEDIATION MODELS TO CREATE FUTURE ORIENTED ASSIGNMENTS FOR UNDERGRADUATE RETAILING AND GRADUATE B2C E- COMMERCE CLASSES

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Introduction

The best methods of andragogy for a future where facts, terminology, formulas and even how-to procedural information is readily available at the click of a mouse are not clear, and may not be so for a substantial period of time. The purpose of this manuscript is to (1) make an argument for future oriented assignments and (2) to demonstrate one example of a future oriented assignment in undergraduate retailing and graduate e-commerce classes.

The Disruptors

In the midst of a long period of disintermediation in retailing two new forms of intermediation, both less than 10 years old, began in the Silicon Valley, developed nationwide models and prepared to IPO at startling valuations. The first, DoorDash, operates primarily to deliver restaurant food, went ahead and IPOed in December of 2020 at an estimated valuation of \$32B. Excitement about the stock, an early example of the Reddit-wallstreetbets phenomenon, drove its first day valuation to \$71B (Noor and Franklin 2020). Its valuation would peak at over a \$100B (about twice the market cap of Ford Motor Company) about a year later on November 12th, 2021. Like a lot of the stock market, it has lost steam since then, and at the time of writing, it is 78% off its all-time high and 68% off its post-IPO closing value at \$22B.

Instacart's founder left Amazon where he worked as a supply chain engineer to start a series of unsuccessful service companies before he developed a grocery delivery company that would expand from its Silicon Valley beginnings to a nationwide entity that offered services in more than 5500 cities with partnerships with 150 retailers and 1500 stores (Redman 2020). It filed paperwork to IPO in 2021 (James 2021) after being on several "expected IPO" lists for much of 2020 (Alcott 2020; Redman 2020). The long-anticipated IPO did not take place in either 2021 or 2022. A solid figure on its current valuation is difficult to obtain, but it recently cut its prior self-valuation of \$24B, a figure that is, itself, 40% lower than its \$39B valuation at its last round of fundraising in 2021, to \$10B (Khushi 2022; Davalos and Chang 2022).

Illustrative Assignment

The author of this manuscript has used this assignment for two years in our university's graduate e-commerce class, which is part of an online-only Masters of Science in Digital Market and is currently using it in the spring of 2023 for a third year. The assignment has also been used twice in the undergraduate level Retailing course.

Context

Any assignment like this would be incomplete without a reference to the disruption caused by the Covid crisis. DoorDash, Instacart and e-commerce generally benefited tremendously from the nesting phenomena related to the Covid-based proscription of social interaction. We certainly have not seen the end of Covid and there is a high probability that some similar social interaction inhibiting event, either a variant of Covid or a new form of virus will reoccur, but the return to normal or at least new-normal socialization has dramatically affected home delivery intermediaries. In terms of teaching about these new forms of ecommerce and retailing intermediation, these companies have very different outlooks in 2023 than they did when they were on the ascendancy in the spring of 2021, or still going strong, but faltering in the spring of 2022.

It is also important to think about how this assignment fits contextually with other cases, projects and lectures. In both the undergraduate and graduate classes where this assignment is used, a beginning semester history assignment sets the scene for the future oriented case. In the undergraduate classes, the dot com era boom then bust of online-order delivery operations like Streamline, Webvan and Peapod is one-half of an assignment which also looks at the general "retail apocalypse" and the bankruptcy of long-standing retail organizations. In the graduate class, the grocery delivery failures of the early 2000s are one-third of an assignment that looks at other ecommerce failures like eToys.com and recent companies that are still viable but failing (defined as losing 90% of their value) like Wish (Context Logic), Carvana and SmileDirectClub.

Graduate Assignment

Students make a presentation via recorded video. Our university offers a video-recording and editing software called Panopto to all students free. It is easy to use and we have technical people who have done a very good job of creating instructional content supporting Panopto. Students are given a Word file with instructions and a PowerPoint shell with the slides shown in Table 1.

Slide	Title	Instructor's Notes
1	Introduction	Student introduces themselves and gives a synopsis of what the paper is all about
2	Current Situation DoorDash	Student explains the current state of the business.
3	Current Situation Instacart	Student explains the current state of the business.
4	Business Model DoorDash 1	Supply side logistics
5	Business Model DoorDash 2	App, its usage, delivery charges, membership/loyalty strategy.
6	Business Model Door Dash 3	Other revenue streams
7	Business Model Instacart 1	Supply side logistics
8	Business Model Instacart 2	App, its usage, delivery charges, membership/loyalty strategy
9	Business Model Instacart 3	Other Revenue Streams
10	DoorDash Future 1	Near term (1-3 years). Success generally and success versus competitors
11	DoorDash Future 2	Long Term (10-15 years) Viability (of DoorDash) and evolution (discussion about what types of systems will dominate)
12	Instacart Future 1	Near Term (1-3 years) Success generally and success versus competitors.
13	Instacart Future 2	Long Term (10-15 years) Viability and evolution (discussion about which systems will dominate grocery e-commerce)
14	Conclusion	This slide has any questions, which because of it being recorded there are none. The author has seeded other presentation assignments with questions, but not this one.

Table 1. PowerPoint Shell Used in Ecommerce (Graduate level)

For Slides 2 and 3, the current state of the business, the author recommends that you caution the students about very short-term oriented finance articles which often try to explain a daily upswing or downswing in the stock price. They are encouraged to focus on the general trend of revenue, profits and valuation (market cap) over a period of a year or so. Both Instacart and DoorDash have been accused of terrible ethics failures relative to the supply side logistics' slides (Slides 4 & 7), stealing drivers' tips, laying off unionized workers and paying way below minimum wage net remuneration to its independent contractor delivery people. Nevertheless, the author of this paper does not specifically ask students to focus on this. Another instructor in the program does a tremendous job of teaching ethics, including an ethics course, and the students get to benefit from her way of framing assignments focused on ethical issues. Students, many of whom have used either Instacart or DoorDash or both, do a really good job just describing how the app works and the different levels of membership plans and loyalty/repeat purchase tactics the companies use (Slides 5 and 8). For this part, the author encourages them to talk about any experiences they have had as consumers, but also reminds them, forcefully, that this is not a consumerism class, but a business class in a business school master's program.

Slides 6, 9 and 10-13 are the most critically important and the most heavily weighted. Professors who like to grade holistically may not want to use a spreadsheet system with explicit weights like those shown in Table 2. The author, though, is a spreadsheet grader and posts the grading weights and points out the extra weight placed on these slides in the instructions.

Criteria	Slides	Weight	Grading Issues
Current Situation	2 & 3	7.5%	Can change dramatically from year to year. Focus on core business
Business Model 1	4 & 7	7.5%	The independent contractor or asset light model contrasts directly again what went wrong in the dot com bust.
Business Model 2	5 & 8	10%	Students have historically done this very well. It is important to emphasize this is not a consumerism study, but a business study.
Revenue Streams	6 & 9	20%	Students in the program generally do better at creative assignments and struggle with quantitative business concepts.
Future	10-13	35%	Students in 2021 and 2022 were significantly more prescient than stock valuers
Delivery	All	20%	The presentation aspects of the students' videos with allowances for speech impediments, ESL, presentation anxiety, etc.

Table 2. Grading Criteria and Their Relative Weights

In grading and providing feedback, the professor provides the most likely outcomes as general feedback. Instacart may develop into an 800-pound gorilla, dominating grocery store delivery and branching out into other types of retail delivery. It could also, however, lose traction or collapse entirely with what it does now taken over by the retailers themselves as they develop their own models of delivery. DoorDash could become a giant in its field, or it could be out-competed by Uber's UberEATS, GrubHub or a heretofore unknown entity. It is also possible that we might see hyper-localized systems of delivery in either or both domains that take over delivery with more streamlined expense profiles and specialized local knowledge. Nevertheless, a professor using this system must understand the limits of his or her own prescience and recognize each student's take on this is likely to be more accurate than the professor's.

Extension to Other Courses at Other Levels

The author uses the general framework for this assignment for the undergraduate course, Retailing. It is a written assignment instead of a presentation. Instead of a help video, there is a lecture module associated with the assignment. Students have follow-up discussions and more information is provided to them. For example, the graduate students are expected to learn the different revenue streams, delivery (or membership) fees, the surcharge received from partnering restaurants (DoorDash) or grocery stores (Instacart) and advertising (pay for placement). Details about how this works for both focal entities are provided to undergraduates. Pay for placement, for example, is working out better for Instacart because national brands are used to allocating budget to promote their brands over others and doing it as close as possible to the point of sale is very attractive to them. Restaurants are being asked to pay an advertising fee to come up at the top of the category on top of paying up to 30% off the top to DoorDash for delivery, and they are not hesitant to complain about what they feel is double dipping (Popper 2021).

Limitations

This assignment focuses on the core aspects of these businesses. Both are expanding to such new product domains as delivery for pet supplies and pharmaceuticals and may eventually become each other's primary competitors. DoorDash in particular is just one of a number entrants in its field. GrubHub, UberEATS and Postmates all compete in the same space. Some people who teach in this area, for example, may prefer to compare GrubHub to DoorDash.

Setting up an assignment that gets students past paraphrasing what they have read is a challenge. Some students are not used to assignments where there is no single correct answer and some systems of education do not encourage people to think for themselves. Our university has partnerships with several Asian institutions and students from one country in particular really struggled with (and complained about) this and other case assignments where they were asked to think for themselves.

Finally, it takes more work to design; it has to be updated every year and; it takes more time and effort to grade. Some professors may not have experience grading assignments where there is no correct answer. They may feel uncomfortable writing feedback that might turn out to be very wrong. I feel strongly though that reading through 25 students' assignments in several classes for several years has certainly made me better at designing the assignment, giving feedback and assigning grades.

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THE MANAGEMENT ETHICAL DECISION COVID TEST

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Introduction

In this paper, the author proposes that management made a rush to judgement in significantly changing work from home policy, and it is time to re-evaluate such decisions. The author will review ethical tests used for good decision making and how one or more tests were violated in pursuit of convenient decisions. By expediting decision making, management ignored established continuous improvement processes that require a vibrant feedback process. While the author is not opposed to innovative new strategies birthed in the COVID era, he is opposed to poor strategic decision making and feels the pendulum may have swung too far and it is time for management to reflect and correct. The author closes with suggested steps to help the organization remedy the situation.

Literature Overview

Test of the Big 4:

In the book, *Ethics 4 Everyone*, Harvey & Aritam outline a popular ethical decision-making model called the *Test of the Big 4*, “The Big Four are four characteristics of decision making that may lead you astray or toward an unethical course of action. The four factors are greed, speed, laziness and haziness”. (Harvey & Aritam, 2002) The tests of Greed, Speed, Hazy and Lazy are summarized below:

- Was the decision GREEDY? Who ultimately benefits from the decision? Are a few stakeholders benefiting or are many? *The situation was politicized, from multiple sides, as people used the situation to gain power. The result created a few big winners and many losers.*
- Was the decision SPEEDY? Did the decision happen quicker than normal possibly without the benefit of a full review of the facts? *Families, companies, and countries were forced into a situation that demanded fast, imperfect decision making.*

- Was the decision HAZY? Were the rules poorly defined? Were expectations for all parties clear? *For over eighteen months, headlines attempted to capture and reconcile the chaos, at every level of our social structure, including those corporate structures that make up our economy.*
- Was the decision LAZY? Did management follow proven processes and methods for decision making? *The purpose of this paper is to suggest that there is more work to be done and that management now seems satisfied with survival, the minimum standard.*

Methodology

In this paper, the author takes a qualitative approach comparing proven best practices to recent news events, showing the shortfall. Significant events, like a global pandemic, certainly justify unique action. These actions do not have the benefit of a well-rehearsed plan or practice. It appears that many organizations have not reflected on how workplace changes were made and why. What has happened, is that decisions that were designed to be a short-term remedy are now being employed as long-term changes without appropriate justification. As a rough analogy, we have stabilized the patient with the bullet wound and we have never evaluated the patient for internal damage or taken the steps to operate and remove the bullet.

GREED Test

Unfortunately, organizations have strived to justify the decisions that were made, and even suggested they were strategic in nature. Why? simply follow the money. There are countless examples where senior executives suggested that bonuses were due because of improved profitability and or cash flow during COVID.

According a recent Bloomberg report, “One Quarter of U.S. Firms Raised Wages, Gave Bonuses in Covid Era”. (Sasso, 2022)

Another headline from The DC Brief Time politics newsletter reads, “During the COVID-19 Meltdown Execs Pocketed Millions in Bonuses While Their Companies Went Bankrupt.” (Elliott, 2021)

One source of cash for senior management was in pending capital projects. In this situation, thoughtful strategic plans were abandoned and balance sheets were manipulated to paint a picture of a healthy business. Cash set aside for long-term projects was used to mask short-term losses. Building projects were canceled, expansions were postponed, and buildings were sold... to create cash. “The national office vacancy rate stands at 12.5%, up from 9.6% in 2019 and the highest since 2011, CoStar said. Just as worrisome for developers 37% of the space under development remains available, more than double the rate in 2019 and approaching the record 39% in 2008.” (Grant, 2022)

The poor distribution, then misuse, of COVID relief funds are another obvious example where personal greed superseded good judgement.

Management failed the Greed Test.

SPEED Test

During COVID, most organizations refocused limited time and human resources on the critical elements of the business. Organizations lacked resources, good information and time. Because the end of COVID was hard to define and because there were less people to do the work, management elected to focus on just what was necessary to get the job done. Basically, people recreated the daily TO-DO List. Job and job functions were stripped down to their core. The raw steps needed to deliver products and provide services were all that remained. If the list was completed, then it was a daily success. If the weekly list was completed, then it was a weekly success. If the monthly list was completed, then it was a monthly success. **Two years later success is redefined, as is the job and job functions that made it possible.** This redefinition of the work-life balance and changing work expectations is a reality across our culture and it impacts how work teams and companies operate. Jason Gay took the cultural shift to extremes, writing a parody about Tom Brady skipping football practice on Wednesdays, in a hypothetical quote from Brady – “I thought we were all cool with remote work now”. (Gay, 2022)

Management did not have the time, so they need to take the time now to reevaluate decisions made, or fail the Speed Test.

HAZY Test

There was simply a lack of oversight in the process where job functions and job priorities were changed. There was less management involvement. There was no time for creative brainstorming. Time studies and HR best practices were set aside, leaving many people to redefine their job and job priorities. As people recreated their jobs and their daily TO-DO lists, they also re-evaluated personal priorities. At the same time, these personal priorities were being debated and politicized. **The result was a set of new priorities that may or may not be aligned with the goals of the organization, and a new form of management that lacked the ability to stress accountability and even goal alignment.** People will simply make up their own rules to fit their needs when other organizational rules are not in place. In a fun example, John Clarke profiled a problem at the 2022 American Cornhole League World Championships. In the championship round the No. 1 ranked doubles team was questioned for using illegal size bags. Upon review, it was determined that they were illegal, however, the other opposing team’s bags were also illegal. (Clarke, 2022) Here, we have a sport that has quickly evolved over the past few decades, and it was felt that there was a clear understanding of the most basic of rules, when there really wasn’t. How many businesses are making the same incorrect assumptions today?

Callum Borchers writes about the problem of poor assumptions and how the problem is growing in business.

“Productivity paranoia”, coined by Microsoft CEO Satya Nadella, is a new term to describe the not-so-new concern that workers aren’t as effective or honest at home, and it appears it is intensifying amid recession forecasts.

According to Sean Slater, vice president at the Brixton recruiting group, “It’s an HR nightmare and one of several kinds of deception – big and small, real and potential – that are intensifying some managers’ return – to – office desires. In on-line meetings it can be difficult to tell who is paying attention to Zoom and who’s cruising Zillow.” (Borchers, 2022)

Management also has lost the opportunity to provide some basic supervision and guidance. Collaboration opportunities with subordinates are viewed as extra, beyond the list, if additional to the scheduled Zoom call. Management feedback is left to formal feedback only. Time with the boss is now scheduled, creating a more formal environment that lends itself to documentation. Informal, undocumented time that is often more open, less structured, and creative is lost. Thoughtful and emotional mentoring is lost as well.

Peer-to-Peer mentoring opportunities are also lost. Peer-to-Peer time is even more difficult to schedule than Supervisor – Subordinate time, creating another lost opportunity for staff development. Seasoned mentors are often the best source for best practices and are often the “guards of corporate culture”. Unfortunately, in the new post COVID environment, this valuable resource does not make the list for either the senior or junior worker.

There are those that suggest that “work is better now”. For many people it may be. Is work better for whom? As we indicated previously, many people “filled the policy void” with their own needs as job and job priorities changed during COVID. However, were the changing organizational needs balanced as a part of the change? The best argument is that by remaining flexible with employees, the organization was able to ensure a higher level of retention. The complete justification of this “strategy” is yet to be determined because of how these flexible work policies were developed and implemented. Organizations could easily determine that they are simply retaining the wrong people.

Management failed the Hazy Test by not testing the validity of employee driven policy changes.

LAZY Test

New technology and processes were leveraged to help bridge the gap. Technology may have been able to replace some jobs and job functions that were redundant and/or systematic. In this way, COVID acted like an accelerator in compressing time and decision making, driving companies to act on things they knew they would need to do some day in the future. It forced organizations and people to make decisions that needed to be made, because less human resources were available, and the organization had a new opportunity to break bad habits or outdated policy from the past. In this case, as painful as it may have seemed, the right choice may have been made. We ripped of the band-aid and needed progress was made.

In many cases technology changes were appropriate, but research has shown us that the bulk of communication between two or more people is NOT verbal. Communication from gestures, eye contact, posture, and other non-verbal clues are lost in some way, in the digital ether many companies have adopted. Poorly worded texts, chats, and emails result in more poorly worded texts, chats, and emails to resolve complex issues, rather than thoughtful conversations. People who think they are competent multi-taskers are not competent at all while multi-tasking.

Many of the technology tools may deserve a lasting place in the organization. COVID did provide an ideal environment for innovation. Management now must take the time to determine if these tools provide a lasting financial benefit to the organization, in a similar way as they did in COVID,

when other resources may have been scarce. For many of these tools, the cost/benefit math may not stand up. For some organizations, new technology tools may have been the only option. In this situation, the organization was forced to pay far more for a solution than it may have thought possible a year prior. It is also likely that other technology innovators were tested during COVID, allowing the organization to now compare and more critically evaluate the price and technology that was employed. Companies can also now review a more complete justification, using a more known labor cost that they did not have before. During COVID, the cost of labor was scarce and rapidly changing, an unknown; this forced managers to overestimate the expense in the justification. The continuous feedback loop is needed for evaluation, so a more refined solution can be leveraged. A solution that was employed on the battlefield may not be ideal for peacetime.

Management failed the Lazy Test by not doing basic ROI analysis, required for strategic decision making.

Results and Implications

A recent *WSJ* article summarized a comprehensive study by the *Drucker Institute*, reviewing changing competency factors and traits across senior leadership in thousands of companies. (Wartzman & Tang, 2022) The study reviewed changes in the population between 2020 and 2022. The following competencies dropped off the list:

- *Builds effective teams*
- *Drives engagement*
- *Communicates effectively*
- *Cultivates innovation*

Companies are essentially groups of work teams. If those teams are not effective or if the effectiveness of such teams are not a priority to management, then we should expect company effectiveness to also suffer. Companies must interact with organizations outside of the organization to thrive, grow and adapt. Effective customer engagement and feedback is a critical component of a healthy business. In an everchanging market place the understanding of changing customer needs is an absolute priority. As new technology has been employed and the work environment has become more fragmented, due to work from home policy, the need for effective communication should be a growing priority, not a dinosaur of best practice. As we reviewed, managers that promote a TO-DO list environment are those who are seeking a minimum standard. The minimum standard will simply not be enough as the company faces competition.

Conclusion

“Organizations must continually engage in activities focused on improving processes, tools, products and services.” (Dewar, Doucette & Epstein, 2019) Due to multiple pressures experienced during COVID, management simply cut too many corners and proven processes were not followed.

The continuous feedback process has been rebranded and expanded on over the decades. At its core, it is a cyclical process made up of four primary elements:

1. Identify the Problem
2. Develop a solution and plan
3. Execute the plan
4. Review the execution and then review the problem and start the process again with an improved solution...

During COVID, it is apparent that organizations were focused on the Execution phase, (phase 3). With limited resources, energy was focused on the immediate functions at the core of the business enterprise. Resources previously dedicated to Problem Identification, Solution Planning, and Review were re-allocated to Execution. Products were shipped, services were provided, but a higher % were shipped late, incorrectly and services were provided with less quality. **The true impact of providing goods and services short of the ideal, or the pre-COVID ideal expectation, is still unknown.**

“Organization learning is important in ensuring continuous diagnosis, action planning, implementation, and evaluation in order to improve an organization’s capacity to solve evolutionary and disruptive problems, and effectively manage change.” (Chinoperekweyi, 2022)

As we think about how to recover from decision making driven by greedy, speedy, hazy and lazy tendencies, here are seven recovery strategies to consider:

1. Do not confuse strategic cash reserves with revenue.
2. Critically evaluate tools and processes employed over the past two years. Question those that may be inconsistent with your company mission, culture, and strategic plan.
3. If new technology was quickly employed, confirm that it was deployed properly.
4. Take a temperature reading of employees. Establish informal communications to help nurture staff development and to get their formal and informal feedback.
5. Verify assumptions made about customers and suppliers. Resist the urge to be dependent on third party data or macro data when company-specific input is needed. Call them, on the phone, meet them, buy them dinner, learn about their changing needs. Take the time that has not been taken to develop a more personal relationship to have a better understanding of their individual needs.
6. Seek action **beyond the list** and remind employees that action is needed beyond the list, for the organization to grow. Redefine the definition for success that has been used for the past two years.
7. Learn from COVID-employed changes, but do not be bound by them. Know the difference between short term fixes and planned strategic change.

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THE ‘HOW’ OF AN APOLOGY: MAXIMIZING EFFECTIVENESS VIA COMMUNICATION MEDIUM

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Trust repair; apology effectiveness; communication medium

Introduction

We’ve all been there—a mishap, an ethical lapse, or even something out-of-our-control happens, and the burden falls to us to repair damage done to those transgressed. While multiple methods exist for repairing broken trust (Lewicki & Brinsfield, 2017), an apology statement has been found to be highly effective and low in cost (Goffman, 1971). Research is already exploring the art of crafting an apology and the components that are deemed necessary for inclusion to increase the likelihood that broken trust is repaired (Lewicki & Polin, 2012; Lewicki et al., 2016). To extend the understand of apology efficacy, however, the communication medium must be considered. Specifically, does the efficacy of an apology statement vary based on the communication medium (e.g., text, audio, visual) utilized? If the goal is offering the most effective apology statement so as to increase the likelihood that the transgressed party is willing to engage in the trust repair process, wouldn’t the apologizer want to offer the apology statement using the most efficacious communication medium? This short paper describes the beginning stages of a study being developed to examine this phenomenon.

Literature Review

Trust is defined as the “confident positive expectations regarding another’s conduct” (Lewicki et al., 1998, p. 439). Whether intentional or unintentional, though, these expectations are often

violated, resulting in a trust breach that, if the relationship is to continue, must be repaired. Options for actions that can lead to trust repair include payment of reparations (Desmet et al., 2011) or structural solutions (Malhotra & Murnighan, 2002); but the simplest and financially least expensive proves to be an apology statement (Lewicki & Polin, 2012). In fact, apologies are often viewed as the key verbal tool aimed at improving communication and an initial step in repairing relationships (Lewicki et al., 2016). Some research recognizes the potential for apologies to be “cheap talk” (Farrell & Rabin, 1996), which has lead researchers to consider the nuances of apology content to make the verbal statement meaningful and more likely to encourage parties toward trust repair.

Lewicki and Polin (2012) as well as Lewicki and colleagues (2016) have studied specific elements of apology statements and found the effectiveness of an apology is directly improved by including certain components (see Table 1). While including all six apology components leads to an increased likelihood of trust repair, some components do prove to be more critical than others (e.g., *acknowledgement of responsibility*; *offer of repair*). What is included in the apology is certainly important to those receiving it and ultimately impacts the receiving party’s overall perception of the person from whom the apology originates.

Expression of Regret	A statement in which the violator expresses how sorry they are for the offense
Explanation	A statement in which the reasons for the offense and described to the victim
Acknowledgement of Responsibility	A statement which demonstrates the violator understands their part in the offense
Declaration of Repentance	A statement in which the violator expresses their promise not to repeat the offense
Offer of Repair	A statement extending a way to work toward trust rebuilding on the part of the violator
Request for Forgiveness	A statement asking for the victim to pardon the violator’s actions

Table 1. Apology Components and Definitions (Lewicki et al., 2016)

In their research, Lewicki et al., (2016) examined apology efficacy in *written* apology statements. Might the efficacy of specific apology components differ if the communication medium (i.e., the *form* a message takes, Bovee & Thill, 2021) is varied? The impact of communication medium is important to consider, as employees must understand that *how* a message is crafted and sent (via the communication channel) can have a significant impact on the interpretation and reaction to the message. Further, the *richness* of the medium—its ability to convey information, facilitate feedback, and establish focus—is also an important consideration (Daft & Lengel, 1984; Daft & Lengel, 1986).

The impact of media choice and richness has been heavily discussed in the literature for nearly four decades. Lean media (e.g., email, text messaging) are more suitable and efficient in presenting analyzable tasks whereas rich media (e.g., face-to-face conversations) are more suitable for approaching serious situations or presenting subjective information (Liu et al. 2009). Other dimensions of media capabilities, including immediacy of feedback (*ability of medium to support rapid bi-directional feedback*), parallelism (“*width*” of the medium; *number of simultaneous*

conversations that can be supported), symbol variety (*“height” of the medium; number of ways information can be communicated*), reprocessability (*ability to reexamine the message*), and rehearsability (*ability to rehearse or fine-tune a message before sending*) further extend the discussion of media richness dimensions (Dennis & Valacich, 1999). These extensions suggest that the “best” medium likely depends on what is most important situationally, and the capabilities between same or similar sets of media vary between vendors, software, and services. In other words, media that have traditionally been coined as “lean” may be made more “rich” depending on what is situationally necessary by expanding communication capabilities (e.g., adding embedded video or graphics into a text message; *symbol variety*). Ultimately, medium choice can evoke positive or negative responses, intentionally or unintentionally, and the meaning of the message can be interpreted differently, whether the audience be consumers, employees, or other business stakeholder (Forouhandeh et al., 2022; Suh, 1999).

Methodology

Our proposed methodology is similar to that used by Lewicki and colleagues (2016). In Study 1, we first seek to understand if each apology component, offered individually, differs in its efficacy based on whether it is delivered via text, audio, or visual communication medium. In other words, employing a 6 (each individual apology component) x 3 (communication medium) between-subjects design, participants will be offered a vignette that involves a trust breach, and then each participant will evaluate an apology that includes *either an expression of regret or an explanation or an acknowledgement of responsibility or a declaration of repentance or an offer of repair or a request for forgiveness*. Each participant will receive this apology statement via email (text), voicemail (audio), or video (visual). This will provide us with a basis for understanding differences in apology statement efficacy based on communication medium. Dependent variables to assess apology efficacy include the following: How effective would this apology be at dealing with the violation?; How credible would this statement be?; and How adequate would this statement be?

Based on the results of Study 1, Study 2 will present a 3 (number of components: 1 vs. 3 vs. 6) x 3 (communication medium: text vs. audio vs. visual) between-subjects design. This study will aim to understand if efficacy of the number of components included in an apology statement is affected by the communication medium through which the apology statement is offered. Specifically, participants will be offered a vignette that involves a trust breach, and then each participant will evaluate an apology that includes *either one component, three components, or all six components*, that is delivered via email (text), voicemail (audio), or video (visual). Dependent variables to assess apology efficacy will be similar to those in Study 1.

Conclusion & Future Research

This research advances the understanding of trust repair, specifically apology effectiveness, by studying the communication medium through which apology statements are offered. Moving forward, we hope to solicit input and feedback from peers attending the 2023 Appalachian Research in Business Symposium to refine the study. If invited, examples of the experimental conditions will be presented at the conference and expected outcomes discussed.

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AN EMPATHIC LOOK AT USER-GENERATED HEALTHCARE CONTENT AND COVID VACCINATION INTENTION

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User-generated content, elaboration likelihood model, information adoption, empathy

Introduction

User-generated content (UGC) is a web- or mobile-based digital communication used for interactive dialogues, forming communities, and exchanging information (Mesko, 2013). User-generated healthcare content (HUGC) refers to UGC generated on social media platforms about health-related topics, including reviews, comments, blogs, videos, etc. (Mesko, 2013). Various reasons motivate consumers to search for healthcare information online, such as learning more, talking to a doctor, finding support, or feeling reassured (Ma & Atkin, 2016). According to the first national trends survey, up to 72% of internet users look for healthcare-related information online in the USA. In addition, over 26% of internet users read or watch others' experiences about health or medical issues (Fox, 2013; Hesse et al., 2005). To this end, HUGC is resulting in a paradigm shift in how people share and access healthcare-related information.

However, along with the benefits are significant drawbacks. There are concerns about users' ability to differentiate the use of online healthcare information (Finney Rutten et al., 2019). People may trust misleading information or make important health decisions based on non-objective sources.

For example, some users cannot critically assess or interpret online health information, developing a false sense of usefulness, which can lead to medical noncompliance (Tonsaker et al., 2014).

Public health practitioners and researchers are assessing how HUGC influences healthcare-related outcomes. An example is how the popularity of one person in social media-enabled online communities affects the behavior of others (Susarla et al., 2012). However, HUGC perceptions and other factors influencing users' healthcare decisions, such as COVID vaccination, are less understood.

Information systems research focused on empirically investigating how UGC influences information adoption. For example, Bhattacharjee and Sanford (2006) experimentally tested the source credibility and quality of argument in document management systems. Studies in the healthcare information context have demonstrated that empathy provides tangible medical benefits, such as understanding social media addiction (Yu et al., 2022; Dalvi-Esfahani, et al., 2021; Pedersen, 2009). Motivated by previous research of IS and healthcare, this study examines the effect of perceived empathy in the HUGC on the perceived usefulness of the COVID vaccination information. The study proposes and empirically tests an empathy-theory-based model about online healthcare information influence.

Research questions addressed in this study include: how do perceived argument quality and empathy in HUGC on social media impact the perceptions of COVID vaccination information usefulness? This study fills the gaps in social media HUGC research in general and COVID vaccination HUGC in particular.

The remainder of the paper is organized as follows. The next section reviews the literature regarding the chosen theories, builds a conceptual research model, and proposes hypotheses. We will then review our empirical study's methodology and findings. Lastly, we will discuss the theoretical and practical implications of the research and future research directions.

Literature Overview

The two major theories used in the present study are the elaboration likelihood model and empathy theory. The ELM theory enables us to identify two influencing factors to explain how the public perceives HUGC's usefulness in taking the COVID vaccination. By applying the argument quality and empathy as the persuasion factors of ELM, we understand the vaccine-related information adoption process via user-generated content on social media. The following section explains how these two theories are used to construct a conceptual model and hypotheses.

Elaboration Likelihood Model of Persuasion

The elaboration Likelihood Model (ELM) is a theory about how persuasive variables in communication change a person's attitude through elaboration and thinking. Fu et al. (2020) suggested that ELM can be applied to understand various social phenomena requiring elaboration or thinking. From the information adoption and influence perspective, Sussman and Siegal (2003) suggested that the perceived argument quality and source credibility would persuade and influence the perception of information usefulness. Drawing from the ELM theory, this study proposes the perceived argument quality and empathy as two dominant influencing factors in the HUGC adoption regarding COVID vaccination.

Argument Quality and Information Usefulness

Petty and Cacioppo (1986) posit that elaboration likelihood is a temporal state, and the situational context affects the amount of cognitive energy recipients devote to information comprehension. According to Cyr et al. (2018), the elaboration level depends on the information's relevance. COVID's life-threatening consequences make it relevant to every individual and family. This study suggests that HUGC recipients should seek and comprehend online vaccination information before being convinced to take the vaccine. According to Sussman and Siegal (2003), the perceived argument quality refers to the information's completeness, consistency, and accuracy. Later empirical studies confirm its predictive power in the adoption of website information (Tseng & Wang, 2016), online customer reviews (Cheung et al., 2008), and UGC by online communities (Hua et al., 2014). Hence, this study proposes the following:

H1: The perceived argument quality of COVID vaccination HUGC is positively associated with perceived HUGC usefulness.

Empathy and Information Usefulness

Sussman and Siegal (2003) suggest that without sufficient knowledge to make cognitively sound decisions, people rely on peripheral positive and negative cues to verify the information usefulness and make information adoption judgments (Petty et al., 1981). Peripheral information can primarily drive attitude and behavior changes (Petty and Cacioppo, 1986). According to the original model, perceived source credibility as a peripheral cue measures an information source's knowledge, expertise, reliability, and trustworthiness (Petty and Cacioppo, 1986). However, a crowdsourcing social media environment such as Instagram may make source credibility less relevant. This study argues that empathy becomes the peripheral elaboration cue rather than the source credibility during COVID. Research suggests that many people see UGC as the most authentic and trusted source of healthcare information. People perceive the HUGC as trustworthy and useful because of the stories and comments shared by others who suffer the same (Ahmed et al., 2018). Hence, this study argues that users' acting on COVID vaccination HUGC depends on their perceptions of how empathetic COVID vaccination HUGC and its source are. This study proposes that the perceived empathy of the HUGC leads to its perceived HUGC usefulness.

H2: The perceived empathy in COVID vaccination HUGC is positively associated with perceived HUGC usefulness.

The following graph (Figure 1) shows our research model.

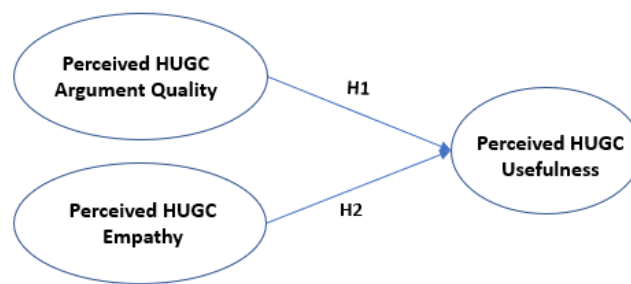


Figure 1. Research Model

Methodology

Social Media and Hashtags

This study explores how the HUGC for COVID vaccination on social media impacts perceptions of its usefulness. In social media sites, hashtags are usually used to reference information or heated topics. A brief screening survey was conducted among undergraduate students to determine which social media sites are used most often for COVID vaccination information. The most popular social media are Instagram (26 counts), Twitter (22 counts), and Facebook (11 counts). The top hashtags #getvaccinated (217k Instagram; 219k Facebook) and #protectyourfamily (129k, Instagram; 200k, Facebook) were selected to represent pros or cons attitudes.

Data Collection Procedure

We collected our survey data on MTurk from 99% or higher HIT rate respondents (e.g., Paolacci et al. 2010; Berinsky et al. 2012; Shapiro et al. 2013). Respondents were instructed to explore content on each hashtag on Instagram or Facebook for five minutes before taking the survey. Each response was evaluated on a seven-point Likert scale. Three manipulation questions, such as speeder trap and attention filter, are used to eliminate common method bias (e.g., Oppenheimer et al., 2009; Meade & Craig, 2012; Berinsky et al., 2014). The proposed survey instruments were pretested and revised in two pilot studies. At last, the primary survey with 25 items was used to collect final admissible data of 359 after deleting data that were (1) answered in less than 200 sec, using a suggested 7.5 sec each question as a guideline (qultrics.com), and (2) answered the manipulation questions wrong. In general, a sample size of 100 to 400 is recommended (Hair et al., 2014). Table 1 shows the basic demographics of respondents in the study.

		359	Count	%
GEN	Male		192	53%
	Female		167	47%
ETH	Native Indian=1		6	2%
	Asian=2		13	4%
	Black=3		38	11%
	Latino=4		17	5%
	Islander=5		1	0%
	White=6		284	79%
AGE	18-23 years =1		16	4%
	24-35 years =2		186	52%
	36-55 years =3		129	36%
	56-65 years =4		22	6%
	Over 65 years =5		6	2%

Table 1. Demographics

Survey Instruments

Respondents were asked to rate their motivation for taking COVID vaccination, such as “to what extent does the COVID vaccination HUGC on social media motivates you to take COVID vaccination?” According to Sussman and Siegal’s original model, three items each measure respondents’ perception of HUGC argument quality and HUGC usefulness. In addition, Mercer (2004) developed a consultation and relational empath (CARE) scale with ten items. The

measurement is based on a broad definition of empathy by taking patients’ perspectives, suggesting the care provider has the ability to (1) understand a patient’s situation, perspective, and feelings; (2) communicate the understanding; and (3) act on the understanding in a helpful way. This study adopted and applied the CARE items, arguing that users seeking HUGC information on social media perceive empathy from the posted information and use it as a peripheral cue. After two pilot study tests, five well-loaded items are used in the final study. These five items still cover the three broad dimensions of understanding, communication, and action. For example, “really listening,” “fully understanding your concerns,” and “making a plan of action with you.”

Measurement Model

The measurement model estimates the accuracy of measurement items (variables), the relationships between the measured items, and the latent constructs these items represent. The measurement model assesses items’ loadings, construct’s composite reliability, and convergent and discriminant validity. Composite reliability and rho_A should be 0.7 or higher to demonstrate adequate reliability for a construct in the study context (Nunnally, 1978). Convergent validity refers to the extent to which items for each construct measure the same construct and is validated by a variance extracted greater than 50% (Hair et al., 2009). All metrics shown in Table 2 are at a 0.000 significant level, indicating that all items are free from random measurement errors and consistent in measuring what they are supposed to measure.

	Cronbach’s Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)	P Value
AQ	0.853	0.856	0.91	0.772	0.000
EMP	0.948	0.948	0.96	0.827	0.000
Usefulness	0.907	0.908	0.942	0.843	0.000

Table 2. Construct Reliability and Validity

The discriminant validity ensures that items are unrelated and only measures their associated constructs. It can be evaluated using a Fornell-Larcker criterion and a heterotrait-monotrait ratio of correlations (HTMT) in SmartPLS. All Fornell-Larcker criterion values in the diagonal line are larger than values in the same row and column (Table 3). HTMT values lie in the range of 0.83 to 0.94, smaller than 1, indicating acceptable discriminant validity (Ab Hamid et al., 2017; Kline, 2015).

	AQ	EMP	Usefulness
AQ	0.879		
EMP	0.766	0.91	
Usefulness	0.74	0.871	0.918

Table 3. Fornell-Larcker Criterion Discriminant Validity

Structure Model and Hypotheses Testing

The structural model estimation includes assessing construct relationships’ multicollinearity, significance, relevance, and model fit in R². For the multicollinearity assessment, the variance inflation factor (VIF) ranges from 2.416 to 4.154 for all the variables (items) used in the model, smaller than the suggested value of 5, indicating admissible correlations among constructs (Ringle et al., 2015). R² represents the variance explained in each endogenous construct, measuring the

model's predictive accuracy. AQ (Beta=0.177; $p < 0.01$) and EMP (Beta=0.736; $p < 0.01$) have a significant positive influence on perceived HUGC usefulness. This indicates that EMP has almost five times the effect on users' perceived HUGC usefulness than AQ. Figure 2 and Table 4 provide the psychometric structural model results, including the standardized path coefficients for each hypothesized relationship and associated p-values. As we can see from the results, all paths' coefficients significantly support our hypotheses.

Hypothesis	Model Path	Path Mean		T Stats	P Value	Result
		Coefficient	STDEV			
H1	AQ -> Usefulness	0.177	0.062	2.841	0.005	support
H2	EMP -> Usefulness	0.736	0.057	12.957	0.000	support

Table 4. Direct Path Effects

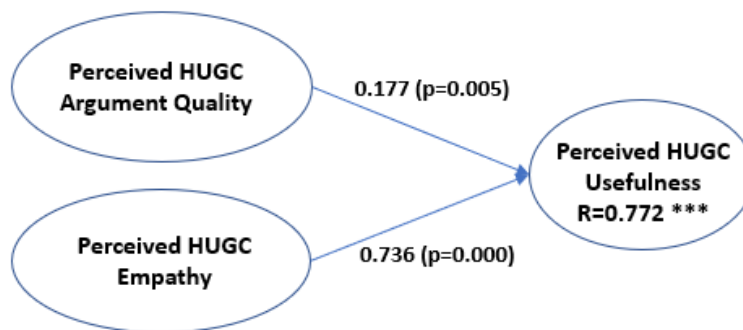


Figure 2. Research Model Results

Results and Implications

Consumers seek healthcare information online daily for various reasons (Ma & Atkin, 2016). Therefore, understanding how people take on user-generated healthcare information (HUGC) is vital. This study is motivated to conduct theory-guided research, positing that the COVID vaccination intention is the function of the elaboration about the HUGC on social media, whether on argument quality or empathy perceived. The results show that empathy and argument quality notably impact the elaboration process. Our major findings offer theoretical and practical implications and directions for future research.

Theoretical Implications

The first theoretical implication of our study is the purposely design and development of a theory-guided research model to derive insights into the formation of COVID vaccination intention in the HUGC context. The research model draws on ELM and introduces empathy as an antecedent to decipher how user-generated vaccination content on social media, such as Instagram, influences the perceived usefulness of HUGC. The theory-guided empirical study enables a more rigorous analysis. Empathy and HUGC information quality are significant exogenous constructs that predict HUGC usefulness in the COVID context. The endogenous construct of the HUGC usefulness offers a proxy indicator for the actual vaccination behavior.

Practical Implications

This study has one major practical implication. For public health regulators and organizations, vaccination reduces high infection, morbidity, and mortality rates, develops herd immunity, and alleviates overburdened healthcare systems and massive economic costs (Omidvar & Perkins, 2022). Our results indicate that perceived argument quality and empathy in the user-generated healthcare content (HUGC) significantly influence the perceived usefulness of COVID vaccination information. Given that social media play a major role in disseminating healthcare information and influencing vaccine uptake nowadays (e.g., Stahl et al., 2016; Giustini et al., 2018), the HUGC's strategic importance has become self-evidenced. Social media platforms are becoming the major battlefield to fight vaccination resistance. Therefore, healthcare regulators and organizations should consider new opportunities and challenges social media technology affords.

Conclusion

This study illustrates the possibility of applying theories to conduct more rigorous research on HUGC in social media. Based on ELM and empathy theory, our integrative research model provides insights into the adoption of HUGC related to COVID vaccination. Our model can be expanded by adopting other relevant variables from the social exchange, social penetration, social influence, and social network theories. These model expansions can help us further understand how users exchange healthcare information, compose online networks, and influence each other's healthcare choices. Health practitioners can use these findings to design and implement HUGC to engage online users to achieve the best public health interventions.

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