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Editorial Note

The November 2025 issue of the *Journal of International Business Disciplines (JIBD)* has been the result of a rigorous process of blind reviews, and in the end, the reviewers recommended three articles for publication in this issue of *JIBD*.

JIBD is committed to maintaining high standard of quality in all its publications.

Ahmad Tootoonchi, Chief Editor
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THE REALITY OF ARBITRAGE IN CANADIAN CRYPTOCURRENCY MARKETS

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ABSTRACT

Understanding the unprecedented growth of cryptocurrency has challenged professionals and scholars. This study involved addressing the existence of arbitrage opportunities in the Canadian cryptocurrency market. The purpose of this study was to test the theory of the Law of One Price (LOP) on cryptocurrency in Canada. The LOP demonstrates that the value of a financial asset should be the same across different markets. The research questions for this study examined whether different exchanges cause arbitrage opportunities in the Canadian cryptocurrency market and whether volatility and liquidity were influencers of the arbitrage opportunities between Canadian cryptocurrency exchanges. A quantitative nonexperimental cross-sectional research design was employed with a sample population of almost 3,000 data points collected for four cryptocurrencies across four cryptocurrency exchanges. The data analysis techniques were predictive modeling and a binary logistic regression model. The study results indicated that arbitrage opportunities were found almost 100% of the time, and volatility and liquidity were weak influencers of the arbitrage opportunities. Professionals will become better equipped to protect average and inexperienced investors in cryptocurrency from the study results. The positive social change implications can enable professionals to gain greater insights into supporting and educating investors in high-risk cryptocurrencies who lack risk management knowledge or financial stability, avoid losing a portion or all of their savings.

Keywords: cryptocurrency, arbitrage, law of one price, Canadian markets, volatility, liquidity, quantitative, nonexperimental cross-sectional research, predictive modeling, binary logistic regression model

INTRODUCTION

Cryptocurrency's rise from a conceptual possibility for blockchain technology in 2008 to a key financial asset by the mid to late 2010s has been unprecedented. Though it is a relatively new financial asset, cryptocurrency is one of the most important financial instruments in the world today (Duczmal & Skomorovski, 2021). Cryptocurrency is the technological advancement of

currency into a digital format. While the currency has roots on the internet, the recent success of cryptocurrencies is not based on the currency's seamless ability to be used in online formats.

The advantages of cryptocurrency go beyond its natural online applications. Core characteristics of cryptocurrencies are that transactions are decentralized, unregulated, and anonymous (Inci & Lagasse, 2019). The lack of regulation or accountability mechanisms guiding different markets may drive cryptocurrency growth. These advantages may also be causing cryptocurrencies to break away from the conventional understanding of financial markets.

An example of discontinuity between cryptocurrency, cryptocurrency markets, and conventional financial thinking is arbitrage opportunities in these markets. Recent studies have found arbitrage opportunities between cryptocurrency markets and noted the role the lack of uniform global regulatory frameworks played in allowing arbitrage to exist (Kabašinskas & Šutienė, 2021; Makarov & Schoar, 2020; Pieters & Vivanco, 2017). The topic of this study is arbitrage opportunities for cryptocurrency as a financial asset. This topic is important to study because cryptocurrencies' noted characteristics and outcomes undermine commonly accepted financial principles, which unwittingly expose average and inexperienced investors to undesirable risk-to-reward propositions. Gaining a better understanding of arbitrage in cryptocurrency markets will have a positive social impact by better preparing professionals to protect average and inexperienced investors using cryptocurrencies to maximize their portfolio performance.

The issue of arbitrage was addressed using the Law of One Price (LOP), which states that assets should be fairly priced by market forces. The LOP is a key principle for understanding financial markets (Kabašinskas & Šutienė, 2021; Makarov & Schoar, 2020; Persson, 2008; Pieters & Vivanco, 2017). The organization of the study will cover the background of the topic, problem statement, purpose, research questions, theoretical framework, and method used to support the study, followed by a review of results and a discussion of the study.

BACKGROUND

The concept of money has been around for a long time, and its characteristics and purpose have adapted with the evolution of civilization. Money has been a part of civilization since 3000 B.C.E., but its role at that time was more of a "social lubricant" (Surowiecki, 2012, p. 46). At the time, money was used more to stimulate social interactions, allowing markets and fairs to form. It would not be until more current events that money would take on a more important role in the local and global economies.

The economic role of money has evolved significantly over time, adapting to changing societal and technological needs. While early forms of money existed, it was not until the seventh century that standardized metal coins began to resemble modern currency (Surowiecki, 2012). The rise of multi-territorial trade in the 1600s spurred the use of paper money, though early versions were plagued by instability and fraud. In response, the 1800s saw the creation of regulatory bodies like the Bank of England and the U.S. Federal Reserve, which adopted the gold standard to restore confidence. However, economic crises such as World War I and the Great Depression led to

abandoning the gold standard in favor of fiat currencies—money not backed by a physical commodity but by government policy and economic strength. This transition reflects money's enduring ability to adapt and maintain its function through economic transformation.

Money has demonstrated resilience by evolving with the rise of current-day economic demands. Over the years, technological advances have made the material substance of money less important. In its place, electronic payment methods have been adopted (Bezhovski et al., 2021). While electronic payment methods, such as credit/debit cards, digital wallets, payment gateways, and bank transfers, still use fiat currencies, the adoption of these types of payment methods by both the business community and the public fostered a demand for further innovation of technology, such as digital currencies.

Digital currencies have been available for over 30 years. Several digital currencies were created but were not adopted, such as DigiCash in 1990, e-Gold in 1996, and Liberty Reserve in 2006, and it was not until 2009 that the first successful digital currency, Bitcoin, was introduced (Trautman, 2014). Bitcoin was the world's first decentralized cryptocurrency. Being decentralized, cryptocurrencies are neither backed by a government nor a commodity.

Fiat currencies rely on governments and financial regulators to manage risk. Financial risk management history demonstrates that maintaining the economy through generally accepted financial principles has been a way for countries to mitigate risks involving inflation, trade, jobs, and overall consumer sentiment (Khan et al., 2019). The financial principles have been enabled by centralized banking system regulations and markets (Kabašinskas & Šutienė, 2021). Recent technological advances in currency markets have changed the way nations and investors understand financial risk, along with the theories and principles that govern these dynamics. The outcome gives rise to cryptocurrency's adoption.

A recent addition to the financial markets has been the introduction of cryptocurrencies. Cryptocurrencies, originally created to safely and securely manage digital transactions, have transitioned into a widely accepted form of currency (Inci & Lagasse, 2019). Unlike traditional currencies, cryptocurrencies are most notably characterized as being decentralized, unregulated, and anonymous (Inci & Lagasse, 2019). These characteristics have made cryptocurrency markets a haven for illicit activities, and a bane for financial and governmental risk managers. Bringing into question the need to regulate cryptocurrency and cryptocurrency markets.

There is no regulatory mechanism guiding cryptocurrency markets that has allowed cryptocurrencies to break away from conventional ways of understanding money and the economy, and eliminated concerns over giving governments too much control and using money for class discrimination. While the benefits of cryptocurrency have been universally recognized, adoption has been limited (Bezhovski et al., 2021; Liang et al., 2021). A hinderance to cryptocurrency adoption concerns how this form of money will meet expectations based on traditional uses of money and generally accepted financial principles. These concerns have gained the attention of professionals and scholars alike.

Cryptocurrency has gained the interest of both professional and scholarly communities. There have been several current studies on cryptocurrency about illicit activities (Dawson, 2020; Didenko &

Buckley, 2018; Foley et al., 2019; Trautman, 2014), financial/governmental regulations (Pieters & Vivanco, 2017; Yin et al., 2019), and investment opportunities as a financial asset (Baur, Dimpfl, et al., 2018; Baur, Hong, et al., 2018; Bayram et al., 2020; Bedi & Nashier, 2020; Corbet et al., 2018; Inci & Lagasse, 2019; Zaher et al., 2020). Findings from these studies reinforce the fact that cryptocurrencies are breaking away from generally accepted financial principles. The research results have generated concerns over the unknown risks associated with cryptocurrency.

One type of risk arising from cryptocurrency's disconnection with generally accepted financial principles within cryptocurrency markets is the arbitrage opportunity. Arbitrage opportunities arise when investors can profit from simultaneously buying assets in one market and selling them in other markets (Zaher et al., 2020). Recent studies have indicated arbitrage opportunities between cryptocurrency markets and noted the role that a lack of a uniform, global regulatory framework played in allowing arbitrage to exist (Bruzgė & Šapkauskienė, 2022; Kabašinskas & Šutienė, 2021; Makarov & Schoar, 2020; Pieters & Vivanco, 2017). While these studies have demonstrated the existence of arbitrage, gaps still exist within the literature regarding this topic.

The literature review for this study encompassed an analysis of over 150 academic sources. Several gaps in the existing research were identified. First, there is a notable lack of studies focusing specifically on the Canadian cryptocurrency market. Second, most existing research is heavily concentrated on Bitcoin, with limited attention to other cryptocurrencies. Third, the literature presents mixed findings regarding whether arbitrage opportunities exist for cryptocurrency as a financial asset. Finally, there are similarly inconsistent findings concerning the role of volatility and liquidity as potential influencers of such arbitrage opportunities. These literature gaps directly informed this study's purpose and objectives.

The study's goal was to grow the body of knowledge regarding cryptocurrency by focusing on arbitrage opportunities in the Canadian cryptocurrency market. Due to the relative newness and seemingly boundless expansion of different cryptocurrencies and cryptocurrency markets, recent studies have concluded that further studies are required to fully understand arbitrage in these markets (Bruzgė & Šapkauskienė, 2022; Kabašinskas & Šutienė, 2021; Makarov & Schoar, 2020; Pieters & Vivanco, 2017). These conclusions are the foundation of the topic of this study. This topic is important to study because the noted types of characteristics and outcomes for cryptocurrencies undermine generally accepted financial principles, which unwittingly expose average and inexperienced investors to undesirable risk-to-reward propositions. Gaining a better understanding of arbitrage in cryptocurrency markets could lead to positive social change by better preparing professionals to protect average and inexperienced investors regarding the use of cryptocurrencies to maximize their portfolio performance.

THE PROBLEM

The social problem that prompted this study was that average and inexperienced investors may be accepting unnecessary and increased risks by adding cryptocurrencies to their financial portfolios, due to expectations of improved performance. The characteristics of cryptocurrency and many investors undermine the commonly accepted financial principles required to understand the risk-

to-reward relationship associated with an investment (Almeida & Gonçalves, 2023). Such as investors being assured they are getting the market price for their investment. These characteristics make cryptocurrency a highly volatile and risky investment that needs to be researched to understand better and protect average and inexperienced investors.

The specific research problem addressed through this study was to determine whether arbitrage opportunities exist in the Canadian cryptocurrency market. While cryptocurrency has experienced professional and academic attention due to its unprecedented growth, unlike traditional asset classes, cryptocurrency is most notably characterized as being riddled with high price volatility, burst bubbles, fraud, and collapsed currencies and exchanges (Baur, Dimpfl, et al., 2018; Bruzgė & Šapkauskienė, 2022). These characteristics fuel the high-risk-high-reward speculative nature of cryptocurrency (Baur, Dimpfl, et al., 2018). The research problem was selected based on the underlying social problem created by cryptocurrency's increasing popularity, as evidenced by its significance to the financial community, and notable gaps in current literature. This evidence justifies the importance of this topic to the professional and academic communities.

PURPOSE OF THE STUDY

The purpose of this quantitative study was to test the theory of the LOP on cryptocurrency and cryptocurrency markets in Canada. LOP models that identical goods must be sold for identical prices at different locations. As a key financial principle, recent studies have indicated the need to continue to study arbitrage in the cryptocurrency markets through the LOP theoretical lens (Kabašinskas & Šutienė, 2021; Pieters & Vivanco, 2017). These studies demonstrate the connection between the problem being addressed and the purpose of this study. The study's intent needs to be reviewed to understand its purpose entirely.

The study's intent was to compare daily closing prices of individual cryptocurrencies between different Canadian cryptocurrency exchanges. The LOP involves comparing the market value of cryptocurrencies across different markets to see if there are arbitrage opportunities. If there are arbitrage opportunities, then the LOP has been violated. The dependent variable, daily arbitrage opportunity, was measured as a dichotomous value (yes or no). The independent variable was the daily closing prices of different markets. This comparison demonstrated whether there were arbitrage opportunities for cryptocurrency within the Canadian markets but did not show possible influences of such opportunities.

If arbitrage opportunities are found, the subsequent intent of the study is to demonstrate probable influencers of arbitrage opportunities among Canadian cryptocurrency exchanges. Where arbitrage opportunities were found, relationship measures for volatility and liquidity were tested. The dependent variable was the daily arbitrage opportunity (yes or no). Independent variables of this test would be the measurements for volatility and liquidity. To achieve the purpose of this study, it is essential to address the research questions comprehensively.

Two research questions were formed to address the research problem and align with the study's purpose.

Research Question 1: To what extent do daily closing prices of cryptocurrency by different exchanges cause arbitrage opportunities in the Canadian cryptocurrency market?

***H_0*1**: Daily closing prices by exchange do not cause arbitrage opportunities in the Canadian cryptocurrency market.

***H_a*1**: Daily closing prices by exchange do cause arbitrage opportunities in the Canadian cryptocurrency market.

Research Question 2: To what extent do volatility and liquidity influence arbitrage opportunities between Canadian cryptocurrency exchanges?

***H_0*2**: Volatility and liquidity do not influence arbitrage opportunities between Canadian cryptocurrency exchanges.

***H_a*2**: Volatility and liquidity do influence arbitrage opportunities between Canadian cryptocurrency exchanges.

Theoretical Foundation

The theoretical framework that grounded this study was the LOP. While the intellectual history of LOP dates to mid-1700s France, Miljkovic (1999) and Persson (2008) attribute the current economic contextualization of LOP to Giovannini (1988). Giovannini defined the LOP as a model that demonstrates the value of an asset, such as currency, should be the same value regardless of the market, and should not fluctuate between markets. The LOP is a key financial principle that helps investors understand the inner workings of market prices.

Investors rely on key financial principles to help them understand markets and risk-to-reward relationships. The LOP is a fundamental and unifying economic principle for understanding the workings of financial markets and their valuations (Giovannini, 1988; Kabašinskas & Šutienė, 2021; Kristoufek, 2019; Makarov & Schoar, 2020; Miljkovic, 1999; Persson, 2008; Pieters & Vivanco, 2017; Shynkevich, 2021; Witzel, 2005). LOP ascertains that identical goods must be sold for identical prices regardless of the market. If there are price differences between markets, then the markets' price variances would be quickly corrected through arbitrage.

Arbitrage is the practice of moving supply between markets for profit, which involves buying assets in one market and simultaneously selling them for profit in another market. Transferring the supply from one market to another causes shifts in price for both markets based on supply and demand economics: the decreased supply will cause an increase in the price in the original market. The increased supply will cause a decrease in the price in the destination market. The transactions continue until there are no longer price incentives to transfer supply from one market to another (see Figure 1).

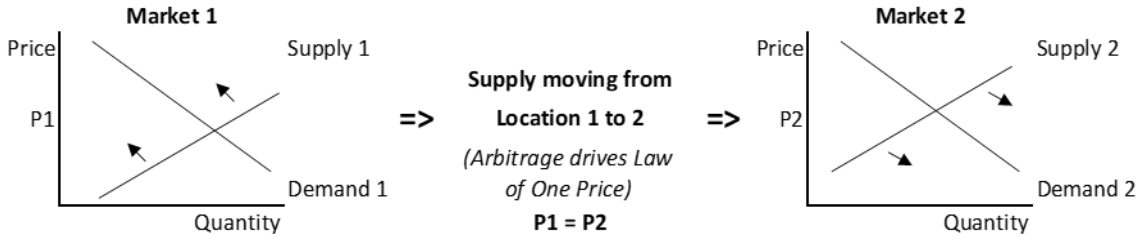

FIGURE 1. HOW ARBITRAGE SUSTAINS THE LOP

Misaligned with its label, LOP is not a law of economic and financial theory, but an explanation that is not always maintained. While the LOP is frequently violated, it is still considered a key building block of current financial and economic theory (Giovannini, 1988; Miljkovic, 1999). The LOP is commonly maintained for highly traded commodities and currencies, such as gold and the U.S. dollar (Miljkovic, 1999; Rogoff, 1996). Furthermore, recent quantitative studies have used the LOP framework to examine if arbitrage opportunities exist between cryptocurrency markets (Kabašinskas & Šutienė, 2021; Makarov & Schoar, 2020; Shynkevich, 2021). The theory demonstrates that no arbitrage opportunities will be found if the LOP is respected between cryptocurrency markets within Canada, which aligns the theoretical framework to the research questions of this study.

SIGNIFICANCE OF THE STUDY

The adoption of cryptocurrency as a financial asset cannot be questioned. While cryptocurrencies are being accepted as a new payment system and financial asset, there remains "skepticism and a lack of understanding of their nature" (Charfeddine et al., 2020, p. 198). One topic of incomplete knowledge surrounding cryptocurrencies is the existence of arbitrage opportunities between cryptocurrency markets (Bruzgė & Šapkauskienė, 2022; Kabašinskas & Šutienė, 2021; Krückeberg & Scholz, 2020; Makarov & Schoar, 2020; Shynkevich, 2021). The significance of this study was the advancement of the knowledge of arbitrage opportunities for cryptocurrency as a financial asset. The following sections review how this study will advance knowledge in academic theory, professional practice, and its contribution to social change.

Significance to Theory

Theoretically, cryptocurrency is a relatively new but critical phenomenon and has garnered much discussion in current literature. Recent studies have focused on cryptocurrency as a financial asset (Corbet et al., 2018), its relationship with other financial assets (Nedved & Kristoufek, 2023), enhancing portfolio performance (Inci & Lagasse, 2019), governmental and financial regulations (Borri & Shakhnov, 2020; Lee & Oh, 2022), cyber criminality (Dawson, 2020; Foley et al., 2019), and arbitrage (Bruzgė & Šapkauskienė, 2022; Kabašinskas & Šutienė, 2021; Makarov & Schoar, 2020). While these studies have been successful, other studies have noted that advancing

knowledge regarding how to analyze arbitrage opportunities between cryptocurrency markets through traditional financial theory would help to increase the integrity of cryptocurrency as a financial asset (Krückeberg & Scholz, 2020) and the efficiency of financial markets (Shynkevich, 2021). Academic theory is expected to be advanced as scholars continue to contribute to the evolving body of knowledge on this relatively new and dynamic financial asset. Bringing into question the completeness of the current body of work on this topic of interest.

The academic literature on arbitrage opportunities for cryptocurrency as a financial asset is lacking. Duan et al. (2021) noted that studies on arbitrage opportunities in the cryptocurrency market are surprisingly "scant" (p. 1). Recent studies have generalized these findings and have noted that research has not kept up with either the technological advancements involving cryptocurrency or the influencers of arbitrage opportunities for cryptocurrency as a financial asset (Duczmal & Skomorovski, 2021). This study is significant because it will address this gap in the literature. The study results will allow scholars to better inform practitioners of the nature and influences of cryptocurrencies.

Significance to Professional Practice

Despite being 16 years old, cryptocurrency is a relatively new financial asset. In comparison to other financial assets, cryptocurrencies and their markets are considered to be in their infancy (Bruzgė & Šapkauskienė, 2022). Bringing into question how cryptocurrency may change as it develops into a mature financial asset. In practice, this developmental characteristic of cryptocurrency should be mitigated by the low level of impact cryptocurrency has on the financial markets.

There is an imbalance between the financial magnitude of cryptocurrency and what is known about the financial asset. Despite its early development status, cryptocurrency as a financial asset has immensely impacted the financial markets. Several recent studies have concluded that cryptocurrency markets are less synchronized in comparison to other financial markets due to a lack of understanding of the influences on the market (Bedi & Nashier, 2020; Bouri et al., 2019; Bruzgė & Šapkauskienė, 2022; Leung & Nguyen, 2019; Makarov & Schoar, 2020; Wątorek et al., 2021). Being less synchronized is evidenced by the belief that arbitrage opportunities exist between cryptocurrency markets, prompting the question: If such opportunities exist, what factors influence arbitrage in cryptocurrency as a financial asset?

A deeper understanding of arbitrage opportunities and their influencing factors in the context of cryptocurrency as a financial asset can assist professional investors in more effectively managing cryptocurrency investments. Recent studies have denoted that a more current and expressive understanding of arbitrage opportunities in cryptocurrency markets will enable investors to gain a better understanding of how to use important financial indicators and instruments, such as interrelationships between markets (Bruzgė & Šapkauskienė, 2022; Wątorek et al., 2021), trading strategies (Kabašinskas & Šutienė, 2021; Leung & Nguyen, 2019; Makarov & Schoar, 2020), price assumptions for adaptation to Futures markets (Shynkevich, 2021), optimal portfolio management (Bianchi et al., 2019; Krückeberg & Scholz, 2020), hedging strategies (Bruzgė & Šapkauskienė,

2022; Salisu et al., 2019), and portfolio diversification (Charfeddine et al., 2020; Inci & Lagasse, 2019; Mensi et al., 2019). This study will advance investment practice in cryptocurrency by providing a deeper understanding of the extent of arbitrage opportunities across Canadian cryptocurrency exchanges. This study's results will, in turn, allow for financial analysts and other professional investors to better serve and direct their customers and the general public.

Significance to Social Change

With the rapid growth of cryptocurrencies, experienced and inexperienced investors are attracted to invest in cryptocurrencies (Delfabbro et al., 2021). There is a significant risk that average and inexperienced investors lack the risk management strategies and financial resilience necessary to absorb potential losses associated with cryptocurrency investments. To mitigate this risk, professional investors and scholars must contribute to a deeper understanding of cryptocurrency as a financial asset, thereby supporting the protection of less experienced market participants.

Given cryptocurrency's high volatility, frequent misrepresentations on social media, and the absence of widely accepted financial principles guiding trading behavior, average and inexperienced investors may be exposed to unnecessary or unintended risks. Recent studies suggest that cryptocurrency investments are predominantly driven by speculative motives, potentially increasing these investors' vulnerability to financial losses. (Baur, Dimpfl, et al., 2018; Baur, Hong, et al., 2018; Corbet et al., 2018). This risk is compounded by the fact that non-professional investors in cryptocurrency erroneously regard their investments as having the same characteristics as more common, traditional assets (Kim et al., 2020). These characteristics demonstrate that there are more influences on a particular investor's behavior than just inexperience. To protect investors, these other influences need to be reviewed.

Overexposure to risk may not be due to inexperience, but rather the mental state of the investor. Recent studies have likened the behaviors of non-professional investors of cryptocurrencies to that of online gamblers (Delfabbro et al., 2021; Mills & Nower, 2019), risk-seekers (Pelster et al., 2019), and irrational investors (Almeida & Gonçalves, 2023; Ballis & Drakos, 2020; Kaiser & Stöckl, 2020; Tjondro et al., 2023). Almeida and Gonçalves (2023) and Delfabbro et al. (2021) noted the need for professionals and scholars to gain a better understanding of strategies to protect average and inexperienced cryptocurrency investors from harm, while still allowing them to benefit from investing in cryptocurrencies. As noted in the prior two sections, a greater understanding of the extent of arbitrage opportunities between Canadian cryptocurrency exchanges would allow the use of generally accepted financial principles when dealing with cryptocurrencies.

Professional investors and scholars are responsible for creating the knowledge necessary to protect average and inexperienced investors. Bruzgė and Šapkauskienė (2022) noted that a more in-depth understanding of arbitrage opportunities would allow investors to understand better the interrelationships between cryptocurrency markets and how this can be employed to create optimal financial portfolios. The increased understanding of cryptocurrency and cryptocurrency exchanges would have a positive social impact by helping to preserve average and inexperienced investors'

savings for retirement and their children's education by reducing unnecessary or unwanted risk. The potential for positive social change exists from the significance of this study.

RESEARCH DESIGN AND METHODS

To address the research questions, this study employed a nonexperimental cross-sectional research design and used quantitative statistical methods, including descriptive statistics and binary logistic regression. Recent studies have shown that arbitrage opportunities for cryptocurrencies can be successfully researched using a quantitative method (Bruzgė & Šapkauskienė, 2022; Duan et al., 2021; Foley et al., 2019; Kabašinskas & Šutienė, 2021; Kristoufek & Bouri, 2023; Leung & Nguyen, 2019; Makarov & Schoar, 2020; Wątorek et al., 2021; Zaher et al., 2020). The specific research design in this study followed the work of Bruzgė and Šapkauskienė (2022). These studies successfully demonstrated arbitrage opportunities between cryptocurrency markets.

To answer the research questions, daily closing prices, bid prices, and ask prices of cryptocurrencies were compared across various Canadian cryptocurrency exchanges. The dependent variable in this study was the presence of arbitrage opportunities, defined as a dichotomous variable (yes/no) and measured at the nominal level. The independent variable was the daily closing price of individual cryptocurrencies across different Canadian cryptocurrency exchanges. These prices are discrete and measured at the ratio level. To test for the existence of daily arbitrage opportunities, daily closing prices of the same cryptocurrency were compared across multiple exchanges. If arbitrage opportunities were identified, a second analysis was conducted to examine the relationship between the dependent variable and volatility and liquidity measures. The dependent variable—daily arbitrage opportunity—was operationalized as a dichotomous (yes/no) variable at the nominal level of measurement. The independent variables included volatility, measured using beta, and liquidity, measured using the bid-ask spread, for each cryptocurrency across different Canadian cryptocurrency exchanges. Both independent variables are discrete and measured at the ratio level.

Population, Sample Population, and Data Collection

Like most of the world, cryptocurrency is not considered legal tender in Canada; however, it is not illegal to use cryptocurrency in Canada. Approximately 9% of the Canadian population owning cryptocurrency has access to the almost $1 trillion U.S. market, consisting of over 200 cryptocurrency exchanges and almost 10,000 different cryptocurrencies (Laycock, 2022). While a study focused on the Canadian cryptocurrency market would add to the existing knowledge, further refinement of the population was required to make the study manageable while still ensuring its validity. This kind of subset of the population is known as a sample.

With approximately 10,000 cryptocurrencies, credible criterion to select the sample population is required. The criterion of the most popular cryptocurrencies in Canada was used. This sample population criterion follows the sample process used by recent studies that looked at arbitrage

opportunities for more than one cryptocurrency (Bruzgė & Šapkauskienė, 2022; Kabašinskas & Šutienė, 2021). The top four popular cryptocurrencies in Canada with at least 1% of the market, which account for 64% of the overall market holdings, are Bitcoin, Ethereum, Dogecoin, and Cardano (de Best, 2022; Laycock, 2022). Internationally, these cryptocurrencies are seen as a leading cryptocurrency (Demmler, 2023). Only data for these cryptocurrencies were collected for the sample.

With over 200 cryptocurrency exchanges from which to collect data, a credible set of criteria to select the sample population was required. The LOC principle notes that local costs must be accounted for and considered in the sample selection. Embedded into the market prices for cryptocurrency are regulatory costs and transactional costs. To ensure that the exchanges selected had the same regulatory and transactional costs, three selection criteria were made: the exchange must support the four noted cryptocurrencies; prices are quoted in Canadian dollars and paid out in Canadian dollars (to remove foreign exchange costs); and the exchange had to be approved by Canada's largest security committee—the Ontario Security Committee.

The noted criteria will help to ensure that, along with consistent regulatory costs, only legitimate and leading exchanges are selected for data collection. These sample population criteria follow the sample process used by recent studies that looked at arbitrage opportunities for more than one cryptocurrency (Bruzgė & Šapkauskienė, 2022; Kabašinskas & Šutienė, 2021). Based on these criteria, there were four exchanges selected: Bitbuy Canada & Bitvo (due to the purchase and amalgamation of Bitvo by Bitbuy during the data collection period, the data collected for these exchanges were referred to as Bitbuy/Bitvo); Coinsquare; Netcoins; Newton. These exchanges accounted for 50% of the Canadian cryptocurrency market revenues (Smith, 2023). Binance, the world's largest cryptocurrency exchange, announced in May 2023 that they would be immediately leaving the Canadian market due to regulatory issues, such as its inability to gain approval from the Ontario Securities Commission (Durrani, 2023). This announcement will have an effect of increasing the market share of the noted exchanges.

The quantitative data collected for this study consisted of the daily closing values for price, bid price, and ask price for each of the four selected cryptocurrencies across the four identified cryptocurrency exchanges. These three data points provide a foundation for analyzing the presence of arbitrage opportunities between exchanges and constructing metrics to assess market volatility and liquidity. This approach enables a comprehensive evaluation of price discrepancies and trading dynamics within the Canadian cryptocurrency market.

Data Analysis Plan

Data for this study were collected over a 3-month (92-day) period beginning on October 15, 2023. Two distinct datasets were developed from this collection: a primary dataset and a secondary dataset. The primary dataset consisted of the daily values for closing price, bid price, and ask price for each of the four selected cryptocurrencies across the identified exchanges. This dataset was designed to support the analysis of Research Questions 1 and 2 (RQ1 and RQ2). The secondary dataset comprises daily closing prices of the S&P/TSX, sourced from the S&P/TSX Composite

Index, and was specifically used to support the evaluation of Research Question 2 (RQ2).

A key challenge in aligning these datasets stems from the operational differences between cryptocurrency markets and traditional financial markets. Cryptocurrency exchanges operate continuously, whereas the TSX follows a fixed trading schedule and is closed on weekends and statutory holidays. To ensure comparability, 27 non-trading days (13 Saturdays, 14 Sundays) and three Canadian statutory holidays (December 25, 2023; December 26, 2023; and January 1, 2024) were excluded from the primary dataset, resulting in 62 days of fully aligned data.

Data collection was automated using Microsoft Excel's Visual Basic and Power Query features, with a scheduled refresh set to capture exchange data at 11:59:59 PM daily. The resulting data was analyzed using descriptive statistics and IBM SPSS software to conduct a binary logistic regression model to address the research questions.

Data Collection

Data for this study were collected over 92-days, from October 15, 2023, to January 14, 2024. For each of the four selected cryptocurrencies, data was recorded for 62 trading days—excluding weekends and Canadian statutory holidays to align with the traditional trading calendar of the S&P/TSX Index. Three data points were collected daily (closing price, bid price, and ask price) from four different cryptocurrency exchanges, resulting in 744 observations per cryptocurrency (62 days * 3 datapoints * 4 exchanges) and a total of 2,976 observations across all cryptocurrencies (744 observations * 4 cryptocurrencies). Following the Central Limit Theorem and the events-per-variable rule of thumb, this sample size is sufficient to ensure statistical power and generalizability of results, particularly given the study's use of a binary logistic regression model.

The complete dataset, titled the Raw Dataset, was used to address RQ1. To address RQ2, a second dataset, titled the Transformed Dataset, was created through the systematic transformation of the Raw Dataset. The transformation of raw data involved two key steps: (1) calculating a measure of volatility using beta (β), benchmarked against the S&P/TSX Index, and (2) calculating a measure of liquidity using the bid-ask spread.

The first transformation focused on capturing the volatility of each cryptocurrency relative to the broader Canadian financial market, represented by the S&P/TSX Index. β is a standard measure of systematic risk, reflecting the degree to which an asset's price fluctuates relative to a market benchmark. In this study, β was calculated as the percentage change in the cryptocurrency's closing price relative to the previous day's closing price. The formula used was:

$$\beta = \frac{(Current\ Day's\ Closing\ Price - Previous\ Day's\ Closing\ Price)}{Previous\ Day's\ Closing\ Price}$$

To interpret volatility, the daily percentage change of each cryptocurrency was compared to the corresponding daily change in the S&P/TSX Index. A β value greater than 1 indicates greater volatility than the benchmark; a value less than 1 indicates lower volatility; and a negative β suggests an inverse relationship. For analytical clarity and consistency with risk assessment

conventions, a dichotomous variable was constructed to represent volatility. A value of 1 indicates high volatility, defined as a daily price fluctuation equal to or greater than ±1.5 times the β of the S&P/TSX Index. In contrast, a value of 0 denotes low or average volatility, defined as a fluctuation less than ±1.5 times the benchmark β.

The second transformation addressed liquidity by analyzing the bid-ask spread, a widely recognized indicator of market efficiency and transaction cost. The bid-ask spread represents the difference between the highest price a buyer is willing to pay (bid) and the lowest price a seller is willing to accept (ask). The spread was calculated as follows:

$$\textbf{Bid-Ask Spread} = \left(\frac{\textbf{Ask Price} - \textbf{Bid Price}}{\textbf{Ask Price}}\right) \boldsymbol{x}\ \mathbf{100}$$

To categorize liquidity levels, this study adopted the framework established by Makarov and Schoar (2020), who analyzed average bid-ask spreads in cryptocurrency markets. Their thresholds were applied: spreads of 0–3 basis points (bps is $1/100^{th}$ of a percentage point) were classified as liquid, 4–16 bps as average, and 17+ bps as illiquid. These categories were converted into an ordinal variable for analysis: liquid (2), average (1), and illiquid (0). While the bid-ask spread is inherently a ratio-level measure, its transformation into an ordinal variable facilitated categorical analysis of market liquidity conditions across exchanges and over time.

RESULTS

The purpose of this quantitative study was to examine the existence of arbitrage opportunities within the Canadian cryptocurrency markets through the theoretical framework of LOP. Specifically, the study sought to determine whether identical cryptocurrencies were being traded at different prices across Canadian exchanges, violating price parity conditions posited by LOP. In instances where such arbitrage opportunities were identified, the study further aimed to assess the relationship between these opportunities and key market characteristics—namely, volatility and liquidity—by employing quantitative metrics to evaluate their potential influence on price discrepancies.

Research Question 1

To address RQ1, a probability-based statistical analysis was conducted to evaluate the frequency of arbitrage opportunities within the dataset. This analysis considered the total number of valid trading days (n = 62), the number of arbitrage instances identified per cryptocurrency, and the frequency of occurrences across specific buy-sell exchange pairings. The approach was grounded in the assumptions underlying basic probability and frequency analyses, including random sampling, normal distribution of the data, independence of observations, and goodness-of-fit, as outlined by Warner (2012). Before conducting the analysis, these assumptions were evaluated using the Raw Dataset. They were determined to be sufficiently met, thereby supporting the validity of the inferential results derived from this analysis.

The methodology used to identify arbitrage opportunities in this study was adapted from the frameworks established by Bruzgė and Šapkauskienė (2022) and Kabašinskas and Šutienė (2021), who conducted successful empirical investigations into cryptocurrency arbitrage. In alignment with these prior studies, the daily closing prices sourced from multiple cryptocurrency exchanges were interpreted as indicative of potential buy and sell points. An arbitrage opportunity was considered to exist only when a trader could simultaneously purchase a cryptocurrency on one exchange and sell it on another at a profit, net of any transactional costs.

To depict this buy-sell relationship within the data collected for this study, we calculated the net value by subtracting the closing price from the buying exchange from the closing price from the selling exchange (Selling Closing Price – Buying Closing Price). Following the structure used by Bruzgė and Šapkauskienė (2022) in their study of arbitrage opportunities, an arbitrage opportunity was recognized if the resulting amount from the transaction equaled or exceeded $0.01 for Bitcoin or Ethereum, $0.00001 for Cardano, or $0.000001 for Dogecoin. These thresholds reflect the typical magnitude of arbitrage margins observed in high-frequency cryptocurrency markets while accounting for each asset's relative nominal price levels.

Upon analyzing the data and applying our predefined criteria for identifying arbitrage opportunities, it becomes evident that such opportunities are a consistent daily occurrence across all exchanges, albeit meager based on the tolerances. Furthermore, the distribution of arbitrage opportunities, when considered as a percentage frequency, appears remarkably uniform across all platforms. This uniformity implies that no single exchange consistently offers lower or higher prices, highlighting a balanced occurrence of arbitrage opportunities evenly distributed among the exchanges. The output of the probability analysis of cryptocurrency can be found in Figure 2.

Summary of Arbitrage Opportunity Data for Bitcoin

Buy - Sell Exchanges	Valid Days	Arbitrage Frequency	Arbitrage Percentage	Cumulative Exchanges %
Bitbuy/Bitvo - Coinsquare	62	25	40.3%	
Coinsquare - Bitbuy/Bitvo	62	37	59.7%	100.0%
Bitbuy/Bitvo - Netcoins	62	26	41.9%	
Netcoins - Bitbuy/Bitvo	62	36	58.1%	100.0%
Bitbuy/Bitvo - Newton	62	23	37.1%	
Newton - Bitbuy/Bitvo	62	39	62.9%	100.0%
Coinsquare - Netcoins	62	31	50.0%	
Netcoins - Coinsquare	62	31	50.0%	100.0%
Coinsquare - Newton	62	29	46.8%	
Newton - Coinsquare	62	33	53.2%	100.0%
Netcoins - Newton	62	27	43.5%	
Newton - Netcoins	62	35	56.5%	100.0%

Summary of Arbitrage Opportunity Data for Ethereum

Buy - Sell Exchanges	Valid Days	Arbitrage Frequency	Arbitrage Percentage	Cumulative Exchanges %
Bitbuy/Bitvo - Coinsquare	62	37	59.7%	
Coinsquare - Bitbuy/Bitvo	62	25	40.3%	100.0%
Bitbuy/Bitvo - Netcoins	62	30	48.4%	
Netcoins - Bitbuy/Bitvo	62	32	51.6%	100.0%
Bitbuy/Bitvo - Newton	62	28	45.2%	
Newton - Bitbuy/Bitvo	62	34	54.8%	100.0%
Coinsquare - Netcoins	62	34	54.8%	
Netcoins - Coinsquare	62	28	45.2%	100.0%
Coinsquare - Newton	62	23	37.1%	
Newton - Coinsquare	62	39	62.9%	100.0%
Netcoins - Newton	62	26	41.9%	
Newton - Netcoins	62	35	56.5%	98.4%

Summary of Arbitrage Opportunity Data for Cardano

Buy - Sell Exchanges	Valid Days	Arbitrage Frequency	Arbitrage Percentage	Cumulative Exchanges %
Bitbuy/Bitvo - Coinsquare	62	34	54.8%	
Coinsquare - Bitbuy/Bitvo	62	27	43.5%	98.4%
Bitbuy/Bitvo - Netcoins	62	40	64.5%	
Netcoins - Bitbuy/Bitvo	62	22	35.5%	100.0%
Bitbuy/Bitvo - Newton	62	36	58.1%	
Newton - Bitbuy/Bitvo	62	26	41.9%	100.0%
Coinsquare - Netcoins	62	39	62.9%	
Netcoins - Coinsquare	62	23	37.1%	100.0%
Coinsquare - Newton	62	32	51.6%	
Newton - Coinsquare	62	30	48.4%	100.0%
Netcoins - Newton	62	29	46.8%	
Newton - Netcoins	62	33	53.2%	100.0%

Summary of Arbitrage Opportunity Data for Dogecoin

Buy - Sell Exchanges	Valid Days	Arbitrage Frequency	Arbitrage Percentage	Cumulative Exchanges %
Bitbuy/Bitvo - Coinsquare	62	34	54.8%	
Coinsquare - Bitbuy/Bitvo	62	19	30.6%	85.5%
Bitbuy/Bitvo - Netcoins	62	39	62.9%	
Netcoins - Bitbuy/Bitvo	62	23	37.1%	100.0%
Bitbuy/Bitvo - Newton	62	36	58.1%	
Newton - Bitbuy/Bitvo	62	26	41.9%	100.0%
Coinsquare - Netcoins	62	40	64.5%	
Netcoins - Coinsquare	62	22	35.5%	100.0%
Coinsquare - Newton	62	35	56.5%	
Newton - Coinsquare	62	27	43.5%	100.0%
Netcoins - Newton	62	22	35.5%	
Newton - Netcoins	62	40	64.5%	100.0%

FIGURE 2. SUMMARY OF ARBITRAGE OPPORTUNITY BY CRYPTOCURRENCY AND BUY-SELL CRYPTOCURRENCY EXCHANGE COMBINATION

Applying this methodology to the collected data revealed that arbitrage opportunities were present across all four cryptocurrencies and all exchange pairings on a near-daily basis. Specifically, out of 1,488 valid events (calculated as 62 trading days × 4 cryptocurrencies × 6 unique buy-sell

exchange combinations), arbitrage opportunities were observed in 1,477 instances, yielding a frequency rate of 99.3%. This high occurrence rate suggests that arbitrage opportunities are not only present and persistently available within the Canadian cryptocurrency market.

Furthermore, the distribution of these arbitrage events appeared evenly dispersed across all exchanges, indicating no systematic pricing advantage or inefficiency consistently associated with any single platform. This distribution suggests a balanced inter-exchange pricing dynamic that still allows for profitable discrepancies at a microstructural level.

Given the overwhelmingly high frequency of arbitrage events, the null hypothesis for RQ1—which posited that no arbitrage opportunities exist across cryptocurrency exchanges in Canada—was rejected. The evidence supports the alternative hypothesis: daily closing price differentials across exchanges give rise to arbitrage opportunities. This finding contributes to the broader literature by confirming the continued presence of pricing inefficiencies in the Canadian cryptocurrency market, despite its increasing maturity and integration.

Research Question 2

Following the confirmation of persistent arbitrage opportunities across Canadian cryptocurrency exchanges, RQ2 was examined to investigate the influence of market volatility and liquidity on the occurrence of these opportunities. A binary logistic regression model was employed to evaluate this relationship. This statistical method was selected for its suitability for modeling dichotomous dependent variables, aligning with the study's aim of determining whether the presence or absence of arbitrage opportunities could be predicted based on volatility and liquidity measures.

As noted by Warner (2012), binary logistic regression is appropriate when the outcome variable is categorical with two levels—in this case, the presence (1) or absence (0) of an arbitrage opportunity. For the model to yield valid inferences, several assumptions must be satisfied: the dependent variable must be dichotomous; the sample size must be sufficiently large to ensure statistical power; there should be no multicollinearity among predictor variables; observations must be independent; a linear relationship must exist between continuous predictors and the logit of the dependent variable; and there must be no issue of complete or quasi-complete separation in the data.

These assumptions were tested using both the Raw Dataset and the Transformed Dataset prior to the regression analysis. Diagnostic tests confirmed that all necessary conditions were met, thereby validating the appropriateness of the logistic regression model and supporting the reliability of its results in explaining the relationship between volatility, liquidity, and the likelihood of arbitrage events in the Canadian cryptocurrency market.

Model diagnostics began assessing the null model (Block 0), which assumed that no arbitrage occurred. This baseline predicted the outcome correctly 50.4% of the time. Upon including volatility and liquidity as predictors (Block 1), the model's predictive accuracy increased marginally to 52.5%. While the Omnibus Test of Model Coefficients yielded a statistically

significant result ($\chi^2 = 17.561$, df = 3, $p = .001$), indicating that the overall model improved upon the null model, the model's explanatory power remained weak.

Goodness-of-fit statistics further underscored this limitation. The Nagelkerke R^2 value was .008, suggesting that less than 1% of the variance in arbitrage occurrence could be explained by the independent variables. According to Cohen's (1988) benchmarks, this represents an effect size so small as practically negligible. Additionally, the Hosmer and Lemeshow test ($\chi^2 = 1.014$, $p = .798$) indicated no significant difference between the observed and predicted outcomes, confirming that the model did not systematically deviate from the data but failed to strongly explain the difference. Despite the weak model fit, the odds ratio analysis revealed statistically significant and directionally meaningful relationships. For volatility, the regression coefficient ($\beta = .252$, $p = .005$) and corresponding odds ratio (Exp(β) = 1.287) suggested that each one-unit increase in volatility raised the odds of arbitrage occurrence by approximately 28.7%. Conversely, the liquidity variable (Liquidity(2): $\beta = -.344$, $p = .043$; Exp(β) = 0.709) demonstrated that higher illiquidity reduced the likelihood of arbitrage opportunities by 29.1%. Given this, the null hypothesis for RQ2—which posited that arbitrage opportunities across cryptocurrency exchanges in Canada were not influenced by volatility or liquidity—was rejected. These findings align with theoretical expectations, as greater volatility is typically associated with price dislocations, while more liquid markets are generally more efficient and less prone to arbitrage gaps.

Summary

This study found that arbitrage opportunities exist in the Canadian cryptocurrency markets and that volatility and liquidity were influencers of these opportunities. While the logistic regression model demonstrated statistically significant associations between arbitrage opportunities and volatility and liquidity, the overall model exhibited poor explanatory power and limited practical significance. The odds ratios indicated moderate, directionally consistent relationships, suggesting that while these variables play a role in shaping arbitrage conditions in Canadian cryptocurrency markets, they do not capture the full complexity of the phenomenon.

DISCUSSION

The results of this study provide empirical evidence that arbitrage opportunities persist within the Canadian cryptocurrency market, thereby supporting the hypothesis that cryptocurrency, as a financial asset, is subject to price inefficiencies. Moreover, the analysis demonstrated that while volatility and liquidity were statistically significant predictors of arbitrage opportunities, the strength of these relationships was negligible, suggesting limited explanatory power. These findings align with prior literature identifying persistent arbitrage conditions in various contexts, including market-specific (Borri & Shakhnov, 2020; Lee & Oh, 2022), cross-border (Makarov & Schoar, 2020), and exchange-specific environments (Bruzgė & Šapkauskienė, 2022; Kabašinskas & Šutienė, 2021). The observed influence of volatility and illiquidity is also consistent with earlier research that recognizes these factors as key contributors to arbitrage dynamics in cryptocurrency

markets (Bianchi et al., 2019; Bouri et al., 2019; Brauneis et al., 2022; Hansen et al., 2024; Shahzad et al., 2021).

The study found that while arbitrage opportunities exist in the Canadian market for cryptocurrency as a financial asset, the opportunity is meager. This finding generalized the findings of Li and Liu (2024), who found that arbitrage opportunities for Bitcoin start to vanish at a spread of 1.02% for centralized and trustworthy exchanges and 1.65% for decentralized and untrustworthy exchanges. Shynkevich (2023) confirmed these findings, noting that since 2018, arbitrage opportunities still exist, but the profitability of the opportunities has significantly declined. The findings of this study and the other noted studies bring into question a limitation of the study based on the effect of tolerances on the scope of what is considered an arbitrage opportunity and the generalizability of the findings.

These contributions add to the growing body of literature on the structural inefficiencies inherent in cryptocurrency markets. From a practical standpoint, the findings underscore the importance of developing more comprehensive regulatory frameworks and investor education initiatives. Such measures are particularly critical for average and inexperienced investors, many of whom may lack the requisite financial literacy or risk management capabilities to navigate the complex and volatile nature of cryptocurrency markets. By deepening scholarly understanding of the mechanisms driving arbitrage, this research supports efforts to enhance market integrity and protect vulnerable participants within the evolving cryptocurrency landscape.

Limitations of the Study

Research on arbitrage opportunities in cryptocurrency markets continues to evolve in parallel with the rapidly expanding and technologically complex nature of digital financial systems. This study aimed to investigate the influence of volatility and liquidity on arbitrage opportunities for cryptocurrency as a financial asset in Canada. While the study design followed established financial principles and statistical methods, several limitations emerged during data collection, transformation, and analysis. These limitations, which affect the reliability and generalizability of the findings, are critical for contextualizing the results and identifying directions for future research.

Although the original design of this study anticipated free and readily available data, practical limitations complicated the data collection process. Contrary to expectations, historical data were not consistently accessible on cryptocurrency exchange websites, and direct requests for the data often yielded no results. As a response, a custom data collection tool using Microsoft Excel was developed to automatically extract (or “scrape”) the three datapoints from exchange websites at a fixed time (11:59:59 PM daily). A manual backup process was also maintained to ensure data continuity. Although this adapted method produced data aligned with the study's initial requirements, it introduced complexities that limited the overall repeatability of the research, as the raw dataset cannot be historically reconstructed.

The continuous 24/7 nature of cryptocurrency markets further complicates data collection. Unlike traditional financial markets that operate during fixed hours on weekdays, cryptocurrency trading does not observe weekends or holidays and trades continuously. To maintain comparability with traditional finance studies, weekend and holiday data were excluded, following precedents such as Bianchi et al. (2019). However, the exclusion of this data and the arbitrary selection of a fixed daily pull time potentially compromise the completeness and repeatability of the dataset.

Based on the studies completed by Bruzgė and Šapkauskienė (2022), the tolerance for what is considered an arbitrage opportunity was set at $0.01 for Bitcoin. Based on the data collected for this study, the average daily closing price for Bitcoin was approximately $52,630. The $0.01 tolerance for arbitrage opportunity represents only a fraction of the average daily closing price. As a robustness check to the study's results, a sensitivity analysis was completed on the assumption used for an arbitrage opportunity. If an arbitrary 1% of the average daily closing price, $526.30, was set as the tolerance for what is considered an arbitrage opportunity for Bitcoin, then the cumulative percentage for arbitrage opportunities drastically reduces from 100% to a range of 3.2% to 0.0% - depending on the buy-sell exchange combination. This sensitivity analysis demonstrates that while arbitrage opportunities exist within the Canadian cryptocurrency market, the extent of the opportunity is meager.

The raw dataset underwent transformation to better align with accepted financial modeling practices. Continuous variables were converted to dichotomous (volatility) and categorical (liquidity) forms to meet the analytical needs of binary logistic regression. All statistical model assumptions were confirmed for the raw and transformed datasets, except the linearity of the logit, which can only be tested for continuous variables. This exception was verified for the raw data, but not the transformed dataset—introducing another methodological limitation.

The rapidly evolving cryptocurrency environment presented another constraint. Since the study's inception in early 2022, significant events—including the collapse of cryptocurrency exchanges FTX and TerraUSD, Bitcoin's adoption in El Salvador, and the consolidation of Bitbuy and Bitvo in Canada during the data collection period—have reshaped the global and Canadian cryptocurrency markets. These systemic changes likely affected the dataset in ways that limit its generalizability to future studies.

Additionally, the study's findings indicated weak relationships between arbitrage opportunities and volatility and liquidity. The weak relationships suggest that other unmeasured factors may be more influential. Prior research has identified technology (e.g., blockchain innovations), economic conditions, investor sentiment, and social media influence as potential price-setting factors for cryptocurrencies, which were not included in this study. Their omission represents an important limitation and suggests directions for future inquiry.

A further limitation stems from the study's intent to address a gap in the literature by including cryptocurrencies beyond Bitcoin. Although Bitcoin substantially dominates global and Canadian cryptocurrency markets, its datapoints were weighted equally with Ethereum, Cardano, and Dogecoin. This approach underrepresents Bitcoin's market influence and may reduce the external validity of the findings.

Finally, the study inadvertently excluded decentralized exchanges (DEXs) by selecting only exchanges approved by Canadian regulatory authorities, which are all centralized (CEXs). As prior studies have shown, there are differences in arbitrage behavior between DEXs and CEXs (Hansen et al., 2024; Hansson, 2022; Li & Liu, 2024; Morin & Moore, 2023), this oversight limits the applicability of the findings to the broader cryptocurrency ecosystem and highlights another potential avenue for future research.

Implications

The rise of cryptocurrency as a financial asset has increased interest among professional and average investors. However, the decentralized and unregulated nature of cryptocurrency markets—combined with high volatility, limited investor education, and emerging trading strategies—has raised significant concerns about investor risk, market integrity, and long-term social impact. This study investigates the existence of arbitrage opportunities for cryptocurrency in the Canadian market and explores how factors such as volatility and liquidity contribute to these opportunities. In doing so, the study also examines broader implications through the lenses of academic theory, professional practice, and social change, offering insights into the need for protective mechanisms to guide and safeguard average and inexperienced investors.

This study is grounded in the LOP, an economic theory suggesting that an asset should have the same price across markets when accounting for transactional and localized costs. LOP violations indicate arbitrage opportunities, which occur when a financial asset is priced differently in different markets, allowing investors to profit from the price discrepancy. The relevance of LOP in cryptocurrency markets has been confirmed not only by this study, but in recent studies (Kabašinskas & Šutienė, 2021; Makarov & Schoar, 2020), confirming to scholars that the LOP is a sound theoretical framework to examine market efficiency and trading behaviors in decentralized environments.

The findings from this study uphold the theoretical expectation that volatility and illiquidity can influence arbitrage opportunities. However, the influence of these factors was found to be weak, suggesting that arbitrage conditions are not solely driven by these traditional variables. The findings supports the broader economic understanding that arbitrage is often the result of a confluence of factors—including technological, behavioral, and institutional dynamics. As such, while the findings reinforce the utility of LOP as a guiding theory, they also highlight the need for expanded models that incorporate non-traditional influencers in cryptocurrency markets.

From a practical standpoint, the study reveals the considerable risk exposure faced by non-professional investors who may lack a nuanced understanding of how cryptocurrency markets operate. Many average and inexperienced investors mistakenly equate cryptocurrency with traditional financial assets, misjudging its volatility, liquidity, and price-setting mechanisms (Kim et al., 2020). This misperception, coupled with speculative investment motives, places investors at greater risk of making poor financial decisions, especially in environments where reliable financial benchmarks and protective regulations are absent.

Beyond inexperience, some investor behaviors align with patterns observed in online gambling and risk-seeking behaviors (Delfabbro et al., 2021; Mills & Nower, 2019). Such tendencies suggest that certain cryptocurrency investors may be driven by addiction or irrationality rather than informed strategy. Studies by Almeida and Gonçalves (2023) and Pelster et al. (2019) stress the importance of understanding these behavioral dynamics, recommending that financial professionals develop preventative strategies and educational tools to support more responsible investment practices.

Additionally, the research identifies unethical practices within cryptocurrency exchanges that have direct implications for investor trust. One such practice—skimming—occurs when exchanges capture arbitrage profits that should belong to investors (McLaughlin et al., 2023). These internal mechanisms of profit capture not only mislead investors but also undermine the legitimacy of the entire exchange ecosystem. The findings of this study help to reinforce that professional oversight bodies have a critical role in advocating for greater transparency, improving digital forensics capabilities, and enforcing ethical practices within cryptocurrency platforms.

The social implications of cryptocurrency extend beyond financial markets, touching on broader issues of public education, addiction, and crime prevention. The combination of unregulated markets, speculative hype, and misinformation on social media has created an environment where average citizens are particularly vulnerable. This risk is intensified by the lack of clear, accessible education about the distinctions between cryptocurrencies and traditional financial products.

Furthermore, cryptocurrency's reputation for enabling illicit activities—such as money laundering and terrorist financing—adds another layer of social risk. Although earlier concerns focused on its use for illicit payments, newer studies reveal that some exchanges themselves may facilitate criminal activities through internal manipulation or lack of regulatory oversight (Dudani et al., 2023). For example, skimming constitutes theft and undermines systemic trust and security. The findings of this study could help professionals and scholars to recognize and address these practices, which are essential to advancing public policy that prioritizes investor protection and financial inclusion.

From a social justice perspective, protecting inexperienced investors from external manipulation and their behavioral risks requires a multi-pronged approach. Educational campaigns, clear regulations, and stronger cross-agency collaboration are necessary to mitigate systemic risk and prevent financial harm. Moreover, promoting literacy around cryptocurrency's risks and differentiating it from traditional assets, such as the existence of arbitrage opportunities, can foster more informed decision-making and equitable financial participation.

CONCLUSIONS

The purpose of this study was to test the theory of LOP on cryptocurrency and cryptocurrency exchanges in Canada. To fulfill this purpose, a quantitative statistical research and analysis design was created. The completion of this study advanced the knowledge of cryptocurrency in several ways. First, the study addressed gaps in the literature based on collective trends: a lack of

understanding of cryptocurrency beyond Bitcoin and the Canadian cryptocurrency market. Second, the study addressed gaps in the literature based on collective inconclusive findings: do arbitrage opportunities for cryptocurrency as a financial asset still exist; are volatility and liquidity influencers of arbitrage opportunities for cryptocurrency as a financial asset? Finally, the study answers the academics' and practitioners' calls for continued cryptocurrency research due to its rapidly changing characteristics and environment.

The findings of this study were that arbitrage opportunities do exist for cryptocurrency as a financial asset in the Canadian market, and that volatility and illiquidity had a meager influence on these opportunities. Based on this study and its findings, the current literature was considered, new knowledge was created, limitations were highlighted to foster future research, and implications for scholars, professionals, and positive social impacts were demonstrated. Based on these components, this study contributed to advancing of knowledge of cryptocurrency as a financial asset and cryptocurrency in general.

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PERCEIVED VALUE OF UNDERGRADUATE ACADEMIC AND EXPERIENTIAL LEARNING IN NONPROFIT AND FOR-PROFIT SECTOR HIRING DECISIONS

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ABSTRACT

Rising tuition costs and growing scrutiny of higher education outcomes have renewed debate about the value of traditional subject-centered curricula. Employers increasingly demand graduates possessing transferable skills and applied experience, yet limited empirical research has compared how nonprofit and for-profit hiring managers evaluate different forms of student engagement. This study addresses that gap by surveying over 400 U.S. hiring managers who assessed 34 activities spanning academic achievement, work-integrated learning (WIL), and extracurricular/co-curricular involvement. Results show that while academic performance remains important, both for-profit and nonprofit employers are placing increased emphasis on competencies developed through applied and integrative learning. Importantly, nonprofit hiring managers value service-oriented activities, especially those involving leadership roles, more highly than their for-profit counterparts, underscoring the need for considering organizational mission when examining employability judgments. Findings contribute to research on labor market alignment by demonstrating that nonprofit pathways require equal attention in higher education policy and career preparation.

INTRODUCTION

Securing the right talent is vital to the long-term success of any organization, and nonprofits are no exception. For example, Geib and Boenigk (2024) surveyed 361 prospective employees in Germany and found that only 14% expressed interest in nonprofit organization (NPO) positions, compared to 48% favoring for-profit roles and 38% seeking public-sector jobs. Their results indicate a growing talent shortage within the nonprofit sector in part due to increasing pressure to perform in the face of negative economic factors. Maier et al. (2025) corroborated this finding in their survey of 861 nonprofit leaders from three metropolitan areas including Vienna (Austria), Shenzhen (China), and San Francisco (USA). The investigation revealed that nonprofit executives

feel as equally responsible and pressured as their for-profit counterparts to deliver strong results to their stakeholders, especially to their board members and donors. The Nonprofit Industry Outlook (Williams-Barnes, 2025) highlighted declining donations, reduced government funding, staffing challenges, and ongoing crises as ever-increasing challenges facing nonprofit executives. In this volatile environment, attracting and retaining top-level leadership talent has therefore become increasingly difficult, as financial and staffing constraints hinder nonprofits' competitiveness (LaRock, 2023). The current study enhances NPO recruitment efforts by demonstrating how nonprofit hiring managers (HMs) can improve their talent acquisition strategies by incorporating a broader selection of assessment metrics. The study includes comparisons of for-profit and nonprofit organizations (NPOs), while not-for-profit (NFP) organizations are excluded for reasons discussed in the following section.

LITERATURE REVIEW

Taxonomy – NPO vs. NFP

Although the terms *nonprofit* and *not-for-profit* are often used interchangeably, they differ in both mission focus and IRS tax treatment (IRS, 2024). While both nonprofit (NPO) organizations and not-for-profit (NFP) organizations reinvest their excess revenue and are tax-exempt, their missions differ as do their IRS classifications (Rushton, 2007). Nonprofit organizations focus on serving the public good, and in doing so are eligible for tax exemption for most of the funds they raise under Section 501(c)(3) of the Internal Revenue Code (IRS, 2024). By contrast, not-for-profit organizations primarily exist to benefit their members and lack some tax advantages afforded to NPOs (Smith, 2017). Being treated as recreational entities by the U.S. Internal Revenue Service (IRS), NFPs are typically recognized as social clubs, with tax-exemption status under Section 501(c)(7) of the Internal Revenue Code (IRS, 2024). The NFPs tax exemption recognizes that they provide collective social goods to members that would otherwise be difficult to supply individually. The tax exemption helps ensure that dues are directed for recreational, social, or other member benefits purposes, rather than being lessened by tax burdens. Empirical investigation has shown a reduction in tax obligations allows for increased invested into essential operations such as staffing in nonprofit hospitals (Byrne, 2014). Data which recently became publicly available allowed the current study to compare directly and quantitatively for-profit and NPO organizations.

As of late 2024, data for the nonprofit sector derived from the Internal Revenue Service (IRS) were made available by the Bureau of Labor Statistics (BLS) to identify and analyze private-sector 501(c)(3) organizations (BLS, 2024). Linking this IRS data to its Business Register gave the BLS the capability of identifying nonprofits within its existing data set (especially 501(c)(3) establishments). As of mid-2025, the BLS leveraged its IRS linkage and began generating separate nonprofit quarterly reports for years. The IRS audits the majority of its tax filings a few years in arrears. According to the U.S. Bureau of Labor Statistics, as of mid-2025, the BLS had generated separate nonprofit quarterly reports from 2022 to 2018, including state and regional breakouts. As described in the next sections of the review, academic performance and achievement combined

with WIL and non-work experiential activities provide NPO HMs with a more inclusive and comprehensive means of screening undergraduate job applicants.

Academic Performance and Achievements (APAs)

Cumulative Grade Point Average (GPA) has long been a hiring screen (Cole et al., 2007; Pinto & Ramalheira, 2017), but its value is declining. Recent studies show GPA cutoffs poorly differentiate candidates (Pinto & He, 2019; Adams, 2021; NACE, 2024). Grade inflation—accelerated by the COVID-19 shift to online learning—has weakened its reliability, with rising GPAs unaccompanied by commensurate gains in SAT performance (Tillinghast et al., 2023). As online delivery persists, GPA is unlikely to regain its former weight. Employer surveys confirm this shift: GPA use dropped from 75% in 2019 to 46% in 2025 (NACE, 2019, 2025). Hiring managers now emphasize academic major and competencies, with skills-based practices on the rise despite organizational barriers including lack of management buy-in and HR resources (NACE, 2025).

Experiential Activities (EXPs)

The current study combines extracurricular activities (ECAs) and co-curricular activities (CCAs) under the broader banner heading of experiential activities (EXPs). Merriam-Webster (2025) defines the prefix "co" to mean "with," "together," or "jointly." In a higher education institution (HEI) context, the key distinction between ECA and CCA activities is their association with the HEI's formal academic curriculum. As such, CCAs are connected to the HEI curriculum in that they are designed to offer opportunities for the practical application of knowledge and skills development (Karim, 2021). CCA experiences enrich and support student learning and personal development (Mars, 2022). And yet while they enhance knowledge acquisition, CCAs with some exception, do not fulfill academic degree requirements. CCA activities often include experiential learning such as field internships, learning communities, service-learning, leadership development series, and study abroad programs (Velez & Giner, 2015). ECAs, on the other hand, represent structured experiences outside the formal curriculum that contribute to student development (Bartkus et al., 2012; Thompson et al., 2013; Jackson & Bridgstock, 2021). They tend to have little or no connection to the curriculum. Examples of ECA activities include non-professional work experience, sporting activities, and social programs.

A solid body of relatively recent peer-reviewed research shows that participation in experiential activities (EXPs) measurably develops students' skills and competencies (e.g., communication, teamwork, problem-solving, and, crucially, the ability to articulate one's competencies in the hiring process). Ribeiro et al. (2023) integrated the findings of thirty-nine earlier studies in an assessment of the impact of experiential activity on undergraduate employability and early career success. The authors' meta-analysis provided strong support for the ability of active learning to boost academic achievement and employability. Ribeiro's research team found that active experiential learning fostered transferable skills such as teamwork, leadership, and initiative. Kanar and Heinrich's (2024) study of the effects of co-curricular activities on competencies

demonstrated that CCA activities significantly increased undergraduate students' ability to better articulate their competencies to prospective employers mediated by career identity. Studies across cultural contexts (e.g., Nigeria, China, UK) show that employers and alumni perceive experiential activities as enhancing competencies, job readiness, and early career success (Akinrinmade & Ayeni, 2017; Clark et al., 2015; Peng, 2023; Hui et al., 2021; Pinto & He, 2019), by significantly enriching the acquisition and ongoing support of skills development (Mars, 2022). Yet, despite growing adoption of skills-based hiring, little is known about how hiring managers (HMs) value various forms of activity participation individually, and in comparison, to each other when making their undergraduate intern and entry-level hiring decisions. This study extends prior research that demonstrated the broader qualitative benefits of academic and experiential activities learning (Ribeiro et al., 2023). Specifically, the current study offers a quantitative empirical comparison of more than four hundred U.S. and multinational hiring manager value perceptions of thirty-four different activities. These endeavors encompass learning metrics that include classic indicators of academic achievement, as well as engagement with both non-work and work-integrated experiential learning.

Work-Integrated Learning (WIL) Experience

Researchers and practitioners have long endorsed the field internship as a critical component of higher education (Gault et al., 2000; Haire & Oloffson, 2009). Duke (2002) noted that while student perceptions of outcomes are informative, what is needed are studies of actual achievement and the effectiveness of learning activities. A substantial body of empirical research ensued which demonstrated that relevant, high-quality work-integrated learning (WIL)—including internships, cooperative education (co-op), field placements, service learning, and applied research projects—was highly valued by employers and strongly associated with employability by merging campus-based education with real-world environments (Ehiyazaryan & Barraclough, 2009; Gault et al., 2010; Renganathan et al., 2012; Jackson, 2014). While *internship* is the preferred term in U.S. contexts, the broader concept of *work-integrated learning* (WIL) is widely adopted internationally, ensuring greater conceptual consistency across higher education systems. Probing deeper onto how HMs value WIL experience, Gault et al. (2018) empirically demonstrated that employers were willing to pay nearly ten percent more for graduates with relevant WIL experience that was directly related to entry-level positions (Gault et al., 2018). More recent studies highlight that WIL helps hiring managers identify candidates with initiative, adaptability, and soft skills that distinguish them from peers with similar academic qualifications (Whittard et al., 2022). Consequently, WIL remains a decisive factor in employment outcomes, while extracurricular and co-curricular experiential activities serve as complementary pathways for developing employability skills. For instance, Jackson and Rowe (2022) conducted a large-scale Australian study of nearly 52,000 graduates which revealed that although WIL strongly benefits labor-market outcomes, co-curricular activities—particularly leadership and mentoring programs—also significantly enhance prospects for full-time employment and reduce perceptions of over-qualification.

Collectively, this body of research underscores the importance of examining how hiring managers evaluate not only academic performance, but also experiential work and non-work experiential activities when assessing undergraduate employability. The current study employed a comparative

methodology designed to capture both nonprofit and for-profit sector HM perceptions across a wide range of learning experiences.

METHODOLOGY

This study employed a cross-sectional survey design to examine hiring manager perceptions of graduate learning experiences across academic, work-integrated, and extracurricular domains. A structured instrument was developed to capture evaluations of thirty-four distinct activities, including traditional academic performance and achievement (APA) metrics, work-integrated learning (WIL) experiences such as internships and cooperative education, and a broad set of extracurricular and co-curricular experiential activities (EXPs). This design enabled a direct comparison of the relative value employers attribute to different forms of student engagement in shaping employability judgments. The following section outlines the sample of hiring managers who participated in the study.

Data Collection & Industry Grouping

A total of 5,000 electronic surveys were distributed to multinational hiring managers (HMs) who recruit interns and graduating seniors from four-year institutions. Stratified sampling balanced gender, industry, revenue, headcount, and location. Of these, 480 usable responses were returned, yielding a response rate of 9.6 percent. Respondents were asked to self-report the industry sector of their organization, which was subsequently standardized using the North American Industry Classification System (NAICS). Among the responses, 75 could not be reliably classified into a specific NAICS sector due to ambiguous or incomplete information and were excluded from subsequent grouping. The remaining 405 cases were categorized according to the first two digits of the NAICS code which designates an organization's economic sector. The sorting resulted in the seven distinct industry sectors listed in Table 1.

TABLE 1. DISTRIBUTION OF RESPONDENTS BY INDUSTRY SECTOR

Industry Sector	N	%
Manufacturing	**55**	**13.6**
Information	**85**	**21.0**
Finance and Insurance	**68**	**16.8**
Professional, Scientific, and Technical Services	**34**	**8.4**
Educational Services	**32**	**7.9**
Health Care and Social Assistance	**74**	**18.3**
Nonprofit Organization	**57**	**14.1**
Total	**405**	**100**

Although responses were distributed across seven industry sectors, the present study focused on three of them, including: nonprofit organizations (NPOs), plus organizations engaged in finance and insurance (F&I) and manufacturing (MFG) sector**.** The nonprofit sector was retained as the central focus, given its distinct orientation away from profit maximization and its unique humanitarian mission-driven character. To provide a meaningful contrast, the manufacturing sector was chosen to represent industries at the profit-maximizing end of the continuum, where business models are heavily oriented toward maximum efficiency against a backdrop of intense competition and thin profit margins. In the middle of the profit driven mission continuum, lies Finance and Insurance. F&I sector organizations, while clearly profit-motivated, tend to enjoy wider margins and can therefore focus more on profit maximization by providing a high level of customer service rather than cost-cutting efficiencies.

Restricting the analysis to these three groups was also necessary for methodological clarity, allowing for a more precise interpretation of patterns in hiring managers' preferences. Nonprofits' sample size (n = 57) provided a baseline for comparison with Finance and Insurance (n = 68) and Manufacturing (n = 55). With the sample defined and delimited to three sectors, attention next turned to the operationalization of key constructs. Specifically, a set of measures was employed to capture hiring managers' evaluations of undergraduate academic achievement, work-integrated learning, and experiential activities as indicators of employability.

Measures

This study compared how different forms of undergraduate achievement and involvement influence the hiring decisions of nonprofit and for-profit hiring managers. Specifically, it examined

hiring managers' Perceived Value of Employability (PVE) as reflected in undergraduate academic achievement and experiences commonly emphasized in early career preparation. To capture this breadth, respondents evaluated 34 items spanning three domains of student engagement.

The first domain, Work-Integrated Learning (WIL), included on- and off-campus internships as well as non-internship work experiences, with eight items measuring the value of practical exposure gained through both formal programs and other employment. The second domain, Academic Performance and Achievement (APA), also measured by eight items, reflected traditional indicators of scholastic attainment such as grade point average and academic milestones. The third and largest domain, Experiential Activities (EXP), encompassed 18 items representing extracurricular and co-curricular involvement, including athletics, leadership roles, student organizations, and community service. Respondents rated each item using a standardized prompt: "To what extent, if any, are each of the following types of student participation in extracurricular, academic, and work-related activities important factors to consider when assessing the quality of an entry-level applicant?" Ratings were captured on a five-point Likert-type scale ranging from 0 (None) to 4 (Very High), with higher scores indicating greater importance.

Collectively, these measures offered a comprehensive view of the dimensions through which hiring managers assess employability, capturing the relative weight they attach to academic achievement, structured internship opportunities, other work experiences, and broader extracurricular involvement. The complete set of 34 items, and accompanying descriptive statistics, is presented in Appendix 1. With these measures in place, the next step was to analyze the data and identify any resulting patterns showing how HMs across different organizational types might value various forms of student engagement differently.

RESULTS

Descriptive Statistics

Analysis of the descriptive statistics revealed several consistent patterns in how hiring managers across sectors perceived the value of student experiences. Among the 34 activities, those that provided professional work experience directly related to the HMs' posted job opening emerged as the most highly valued. Both off-campus related non-internship work (M = 3.41, SD = 0.68) and off-campus related internships (M = 3.09, SD = 0.80) received the strongest endorsements. On-campus related internships were also rated positively, although slightly lower (M = 2.58, SD = 0.80). This suggests that employers attach somewhat greater importance to experiences obtained in external organizational settings. In contrast, experiences not related to the posted job offering, whether in the form of internships or other similar work not taken for academic credit , were consistently rated lower and often fell below the mid-point of the scale (for example, off-campus unrelated internship, M = 1.83, SD = 0.71; on-campus unrelated internship, M = 1.48, SD = 0.67).

This pattern underscores the premium hiring managers place on the relevance of the students' work experience to their field of study and intended career.

Academic performance and achievement (APA) indicators were positioned in the mid-range of perceived importance. Measures such as cumulative GPA (M = 2.54, SD = 0.85), GPA in major (M = 2.83, SD = 0.90), and recognition through Dean's List (M = 2.58, SD = 0.87) were valued positively, but not to the same extent as related work experiences. Notably, prestige-oriented indicators such as being named valedictorian (M = 2.81, SD = 0.98) or graduating from a university with a strong academic reputation (M = 2.67, SD = 0.90) were among the higher-rated academic signals. This suggests that while academic performance matters, it does so most when it conveys exceptional achievement or institutional reputation.

Experiential Activities (EXPs) displayed the greatest PVE heterogeneity. Some roles were perceived as meaningful contributors to employability, particularly those associated with service orientation and leadership. For example, membership in service or volunteer organizations (M = 2.36, SD = 0.82) and holding officer roles in student organizations (M = 2.38, SD = 0.76) were rated favorably, aligning with employers' appreciation of initiative and civic engagement. In contrast, participation in social fraternities or sororities (M = 0.92, SD = 0.80) and intramural sports (M = 1.16, SD = 0.91) were viewed as relatively unimportant. This comparison illustrates HMs strong preference for organized and relevant experiential activities over those which they view as casual undertakings unrelated to the needs of the organization. Moreover, the standard deviations for activities such as varsity athletics, ROTC, and military service approached or exceeded one unit, indicating substantial variation among hiring managers in their perceived value of these experiences.

When examining sector-level patterns, distinct profiles emerged. Hiring managers in nonprofit organizations expressed comparatively stronger preferences for experiences aligned with service and mission-driven involvement. Membership in service or volunteer organizations was rated particularly high in this group (M = 2.88, SD = 0.71), as were leadership positions in student organizations (M = 2.49, SD = 0.76) and engagement in Peace Corps–type programs (M = 2.42, SD = 1.07). At the same time, they maintained the general emphasis on related work experiences, with off-campus related non-internship work rated highly (M = 3.39, SD = 0.65).

In the finance and insurance sector, while related work experience was again prioritized, there was comparatively greater appreciation for competitive and discipline-signaling activities. Varsity athletics (M = 1.82, SD = 0.88), ROTC (M = 1.94, SD = 0.99), and prior military officer-experience (M = 2.51, SD = 1.03) were valued more in this sector than in either nonprofit or manufacturing. Academic achievements also carried slightly greater weight in finance and insurance, particularly GPA in major (M = 2.90, SD = 0.88) and valedictorian status (M = 2.99, SD = 0.86), suggesting a stronger reliance on conventional academic signals alongside experiential credentials.

Finally, the manufacturing sector exhibited the most pronounced emphasis on relevant work-related experiences and the greatest discounting of unrelated experiences. Off-campus related internships (M = 3.13, SD = 0.84) and non-internship work (M = 3.40, SD = 0.63) were prioritized. In contrast, unrelated work and internships were consistently rated lowest among the three sectors (for example, off-campus unrelated non-internship work, M = 1.82, SD = 0.80). While academic

indicators were valued at levels similar to other sectors, extracurricular activities related to service (M = 1.93, SD = 0.63) or broader civic engagement were rated lower. This pattern points to a pragmatic orientation toward skills directly transferable to the workplace.

Taken together, these descriptive results demonstrate a consistent cross-sector preference for related work experience while also highlighting important sector-specific nuances. Nonprofit organizations (NPOs) emphasize service and civic engagement, finance and insurance places additional weight on competitive signals and academic distinction, and manufacturing underscores the salience of directly transferable work experiences while de-emphasizing unrelated and service-oriented activities. These patterns suggest that the meaning of employability signals must be interpreted in light of both their type and the industry setting in which candidates seek employment.

While the descriptive statistics suggest sectoral variation in the perceived value of student experiences, they do not establish whether these differences are statistically significant. Accordingly, a series of one-way analyses of variance (ANOVAs) were conducted to assess whether hiring managers' evaluations of experiential activities differed systematically across industry sectors.

ANOVA Results

Table 2 reports the results of the one-way ANOVAs testing for industry differences in the importance attributed to student experiences. Several clear patterns emerged. The strongest effects were associated with activities reflecting civic engagement and service orientation. Membership in a service or volunteer organization showed a highly significant sectoral difference, $F(2, 177) = 24.35$, $p < .001$, $\eta^2 = .216$, representing a substantial effect size and underscoring the influence of industry context on the perceived value of civic-oriented involvement. Similarly, Peace Corps participation yielded a strong effect, $F(2, 177) = 13.22$, $p < .001$, $\eta^2 = .130$, again demonstrating that employers diverge markedly in their evaluation of service-based experiences.

Military-related experiences also produced significant, though smaller, effects. Prior enlisted service was significant, $F(2, 177) = 4.20$, $p = .017$, $\eta^2 = .045$, while prior officer experience approached significance, $F(2, 177) = 2.70$, $p = .070$, $\eta^2 = .030$. Participation in ROTC likewise differed significantly across industries, $F(2, 177) = 3.76$, $p = .025$, $\eta^2 = .041$. These findings indicate that both formal service and university-based military training were appraised differently across sectors.

Experiential involvement tied to academic major also varied across industries, with membership in a discipline-specific club reaching significance, $F(2, 177) = 3.54$, $p = .031$, $\eta^2 = .038$. In contrast, off-campus, non-internship work not related to one's field showed only a trend toward significance, $F(2, 177) = 2.69$, $p = .071$, $\eta^2 = .001$, suggesting weaker but still possible sectoral differences.

Collectively, the ANOVA results identify three domains where sectoral differences are most pronounced: civic/service activities, military-related experiences, and major-related co-curricular

involvement, with weaker evidence for unrelated work. These patterns demonstrate that employability signals are not uniformly valued; rather, their salience depends on industry context.

TABLE 2. ANOVA RESULTS FOR STUDENT EXPERIENCE RATINGS BY INDUSTRY SECTOR

	NPO n=57 *M* (*SD*)	**F&I** n=68 *M* (*SD*)	**MFG**. n=55 *M* (*SD*))	*F*	*p*	η^2
Service/Volunteer Organization, Member	2.88 (0.71)	2.26 (0.82)	1.93 (0.63)	24.348	0.000	0.216
Peace Corps	2.42 (1.07)	1.96 (0.95)	1.47 (0.90)	13.224	0.000	0.130
Prior Military Service, Enlisted	2.25 (1.21)	2.51 (1.03)	2.05 (1.08)	4.195	0.017	0.045
Reserve Officer Training Corps (ROTC)	1.84 (1.10)	2.19 (1.01)	1.65 (1.04)	3.756	0.025	0.041
Clubs Associated with Student Major, Member	2.32 (0.78)	2.18 (0.91)	1.89 (0.88)	3.536	0.031	0.038
Prior Military Service, Officer	2.25 (1.21)	2.51 (1.03)	2.05 (1.08)	2.697	0.070	0.030
Off-campus, Unrelated Non-internship Experience	1.84 (1.10)	2.19 (1.01)	1.65 (1.04)	2.692	0.071	0.001

Planned Contrasts

To examine the specific direction of sectoral differences, planned contrasts were conducted (see Table 3). These analyses clarify distinct, industry-specific valuation patterns.

Service Orientation. NPO employers consistently rated service-related experiences more highly than their counterparts in F&I and manufacturing. For service or volunteer organization membership, NPO placed significantly greater value than both F&I ($t(177) = 4.65$, $p < .001$, $d = 0.84$) and manufacturing ($t(177) = 6.86$, $p < .001$, $d = 1.30$). Within the for-profit sectors, F&I also rated service involvement higher than manufacturing ($t(177) = 2.54$, $p = .012$, $d = 0.46$). A similar pattern emerged for Peace Corps participation: NPO weighted this experience more than both F&I ($t(177) = 2.66$, $p = .009$, $d = 0.48$) and manufacturing ($t(177) = 5.14$, $p < .001$, $d = 0.97$), while F&I again exceeded manufacturing ($t(177) = 2.73$, $p = .007$, $d = 0.50$). Collectively, these results reveal a clear hierarchy: NPO at the top, manufacturing at the bottom, and F&I occupying a middle position in the valuation of civic engagement.

Military Service. A different pattern emerged for military-related activities. F&I employers consistently rated military backgrounds more highly than manufacturing employers. This was evident for enlisted service ($t(177) = 2.82$, $p = .005$, $d = 0.51$), officer service ($t(177) = 2.29$, $p = .023$, $d = 0.42$), and ROTC participation ($t(177) = 2.50$, $p = .013$, $d = 0.45$). By contrast, NPO employers rated ROTC significantly lower than F&I ($t(177) = -2.14$, $p = .034$, $d = -0.38$) and

tended to discount enlisted service relative to F&I ($t(177) = -1.85$, $p = .065$, $d = -0.33$). These findings point to an industry-specific emphasis within F&I on experiences that signal discipline, leadership, and risk management attributes are consistent with the sector's professional culture.

Co-curricular Involvement. Differences also emerged for discipline-related club membership. NPO employers valued this form of engagement significantly more than manufacturing ($t(177) = 2.61$, $p = .010$, $d = 0.49$), with F&I showing a marginally higher valuation than manufacturing ($t(177) = 1.83$, $p = .069$, $d = 0.33$). These contrasts suggest that both NPO and F&I recognize the relevance of co-curricular academic involvement, though with less intensity than the service-oriented activities.

***Unrelated Non-intern Work Experience*.** Finally, unrelated non-internship work was viewed more favorably by NPO than manufacturing ($t(177) = 2.10$, $p = .037$, $d = 0.40$), with F&I also showing a marginal tendency to rate it more highly than manufacturing ($t(177) = 1.94$, $p = .053$, $d = 0.35$). This pattern suggests that manufacturing employers are particularly stringent in discounting unrelated work, whereas NPO and F&I appear more open to recognizing transferable skills such experiences may provide.

TABLE 3. PLANNED CONTRASTS FOR NONPROFIT (NPO) VS. FINANCE & INSURANCE (F&I) AND MANUFACTURING (MFG)

Measure	Contrast	Mean *Δ*	*t* *(df=177)*	*p*	Cohen's *d*
Service/Volunteer Org Member	NPO - F&I	0.61	4.65	0.000	0.84
	NPO - MFG	0.95	6.86	0.000	1.30
	F&I - MFG	0.34	2.54	0.012	0.46
Peace Corps Participation	NPO - F&I	0.47	2.66	0.009	0.48
	NPO - MFG	0.95	5.14	0.000	0.97
	F&I - MFG	0.48	2.73	0.007	0.50
Prior Military Service, Enlisted	NPO - F&I	-0.35	-1.85	0.065	-0.33
	F&I - MFG	0.54	2.82	0.005	0.51
Clubs Associated with Major	NPO - MFG	0.42	2.61	0.010	0.49
	F&I - MFG	0.29	1.83	0.069	0.33
ROTC Participation	NPO - F&I	-0.40	-2.14	0.034	-0.38
	F&I - MFG	0.47	2.50	0.013	0.45
Prior Military Service, Officer	F&I - MFG	0.46	2.29	0.023	0.42
Off-Campus, Unrelated Non-Internship	NPO - MFG	0.30	2.10	0.037	0.40
Work Experience	F&I - MFG	0.27	1.94	0.053	0.35

Nonsignificant Effects and Directional Patterns

Although most items did not reach statistical significance, consistent directional patterns emerged. NPO employers reported the highest mean scores for co-curricular leadership roles (e.g., student government, student organization officer) and several internship categories (on- vs. off-campus, related vs. unrelated work). In contrast, MFG employers generally gave the lowest evaluations for civic engagement and campus organizational activities. F&I employers consistently rated military-related credentials higher, even when differences were nonsignificant.

These patterns outline distinct sectoral employability profiles. NPO employers prioritize civic engagement and service-oriented experiences, reflecting a mission-driven ethos. F&I employers emphasize competitive, discipline-signaling activities, including military service, ROTC, and academic clubs. Manufacturing employers systematically devalue unrelated and service-based experiences, favoring technical or production-relevant skills. These results highlight how industry context shapes the interpretation of student experiences. For students, tailoring experiences to sector expectations may enhance employability.

DISCUSSION

This study examined how hiring managers across Nonprofit (NPO), Finance & Insurance (F&I), and Manufacturing (MFG) sectors evaluate student experiences as employability signals. By analyzing specific experiential activities, findings reveal how sectoral logics shape early-career credential assessment.

ANOVA results showed notable sector differences. Civic engagement experiences, such as volunteer organization membership or Peace Corps participation, presented with the largest effects, with NPO employers assigning the highest value. Military-related experiences, including ROTC and prior service, were consistently rated higher by F&I employers. Academic clubs aligned with a student's major were more valued by NPO and F&I than MFG. Off-campus, unrelated non-internship work showed marginal significance, yet MFG employers discounted it more than other sectors.

Planned contrasts confirmed these patterns. NPO employers consistently rated service-oriented activities higher than F&I and MFG, reflecting mission-driven priorities. F&I emphasized competitive, discipline-signaling experiences, such as ROTC, military service, and academic distinctions, highlighting credentials that demonstrate resilience, leadership, and discipline. MFG consistently placed the lowest value on service and unrelated experiences, favoring more pragmatic job-relevant technical skills over broader civic or extracurricular signals.

Figure 1 visualizes hiring managers perceived value of employability by sector-specific valuation patterns across student experiences. NPO employers peak in civic engagement, particularly volunteerism and Peace Corps participation, reflecting a mission-driven emphasis on service. F&I employers show elevated ratings for military-related experiences, including prior service and ROTC, highlighting the sector's focus on discipline and leadership credentials. MFG employers display consistently lower valuations across service and extracurricular activities, with modest recognition of academic clubs, emphasizing practical, job-relevant skills. The chart visualizes the distinct priorities of each sector, reinforcing how industry context shapes the interpretation of student experiences as employability signals, underscoring each sector's unique approach to evaluating student employability.

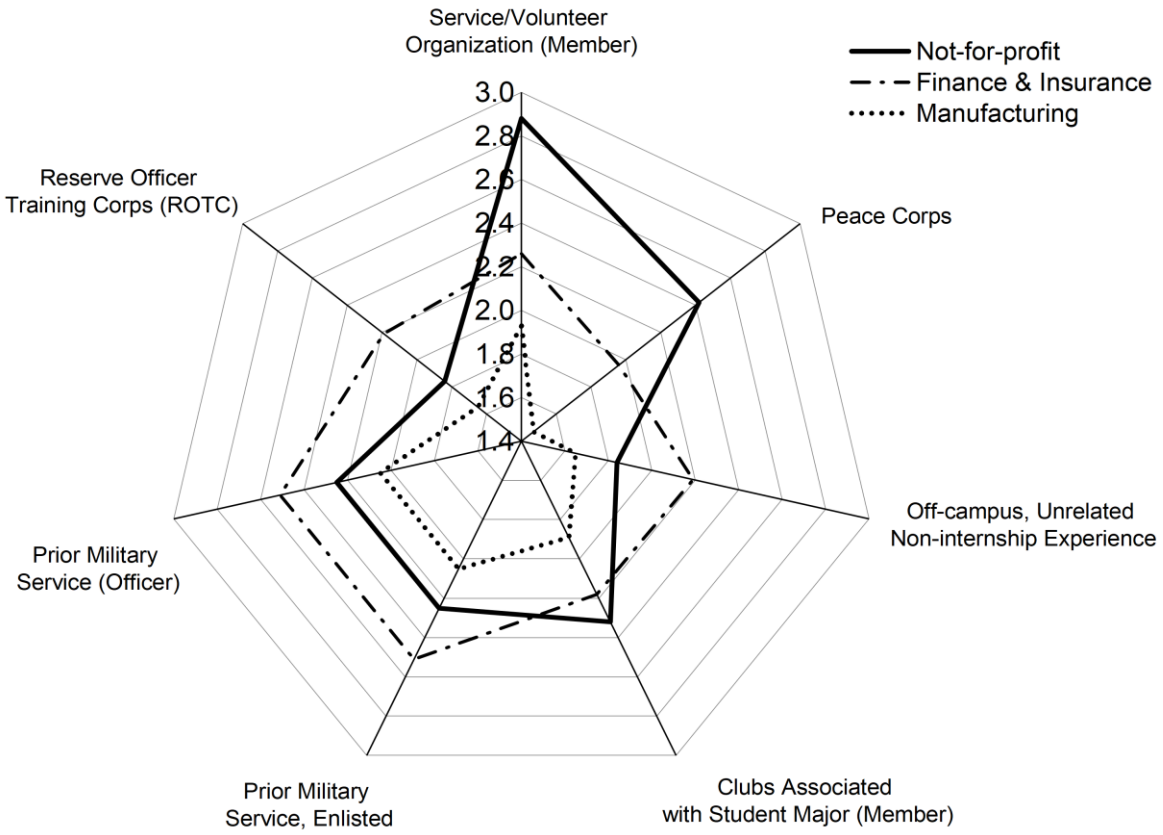

FIGURE 1. HIRING MANAGER PERCEIVED VALUE OF EMPLOYABILITY (PVE)

Together, these results highlight how industry context shapes the interpretation of student experiences. For students, tailoring experiences to sector expectations may enhance employability. Although overall results demonstrate meaningful sectoral variation, examining each industry individually provides deeper insight into the unique criteria guiding hiring managers' evaluations.

Industry-Specific Profiles

Nonprofit Sector. NPO organizations consistently emphasized civic and mission-driven experiences. Membership in service or volunteer organizations and participation in the Peace Corps were statistically significant and associated with medium to large effect sizes relative to for-profit sectors. In addition, involvement in academic major related clubs was valued more highly than in the manufacturing sector, highlighting the dual importance of community engagement and disciplinary alignment. Even for measures that did not reach significance, NPO employers tended to report higher mean scores across co-curricular leadership and organizational roles. Collectively, these patterns suggest that NPO employers prioritize students who demonstrate civic orientation and a commitment to broader social impact.

Finance & Insurance Sector. F&I organizations demonstrated a clear preference for militarized professionalism. Both ROTC participation and prior military service, particularly enlisted service, were valued more highly than in the NPO sector, with statistically significant or marginal differences supporting this emphasis. Unlike NPO, F&I placed limited weight on civic or co-curricular measures; instead, its consistent elevation of military-linked experiences reflects a distinctive evaluative logic compared to both NPO and MFG.

Manufacturing Sector. MFG organizations showed no strong positive differentiators across significant or marginal measures. Instead, they tended to rank lowest on civic and co-curricular indicators. Although MFG sometimes reported slightly higher means on academic or internship-related measures, such as GPA or internships, these differences were not statistically significant. This pattern suggests that MFG employers favor a pragmatic approach, prioritizing work-ready skills over service or organizational involvement, although the evidence remains inconclusive.

TABLE 4. SUMMARY OF INDUSTRY-SPECIFIC PATTERNS IN EVALUATION OF STUDENT EXPERIENCES

Industry Sector	Nonprofit Orgs. (NPO)	Finance & Insurance (F&I)	Manufacturing (MFG)
Overall Pattern	- Emphasizes civic orientation, mission alignment, and social impact	- Emphasizes militarized professionalism, discipline, and reliability	- Emphasizes pragmatic, directly job-relevant skills - Minimizes broader extracurricular signals
Most Valued Signals	- Service/volunteer organizations - Peace Corps - Clubs tied to academic major - Higher averages across leadership roles in experiential activities	- ROTC participation; Prior military service (especially enlisted) -Academic distinctions (Top Jr/Sr, Valedictorian)	- Technical and academic performance (GPA, internships) occasionally higher, but not significant
De-emphasized Signals	- Military credentials (ROTC, enlisted, officer) rated lower than in F&I	- Civic and service involvement - Volunteerism less emphasized than in NPO	- Service and volunteerism - Peace Corps - Clubs and co-curricular involvement - Unrelated work experiences

Limitations and Future Research

This study provides new insights into hiring manager perceptions of academic, work-integrated, and extracurricular learning, yet as with most scientific investigation into new paradigms, limitations do exist which warrant consideration. First, this study relied on cross-sectional survey data, which constrains causal inference regarding how specific student experiences influence hiring evaluations. Second, although the sample included multiple sectors, it may not fully capture the diversity of organizational practices within each industry, particularly smaller or regional employers. Third, measures of student experiences were self-reported or interpreted by hiring

managers in hypothetical contexts, which may not perfectly reflect real-world selection behaviors. Finally, some effect sizes were modest, and not all differences reached statistical significance, suggesting caution in generalizing findings beyond the sample.

Future research should address these limitations by employing longitudinal designs to track actual hiring outcomes and by including a broader range of organizational contexts, including small businesses and international firms. Qualitative investigations could provide richer insight into the evaluative logic and decision-making heuristics of hiring managers. Additionally, exploring how student portfolios combining civic engagement, discipline-specific activities, and experiential learning influence employability across industries may clarify strategies for enhancing early-career outcomes.

CONCLUSION

The findings of this study hold significant practical implications for multiple stakeholders. For undergraduate applicants, the results emphasize the importance of cultivating a well-rounded portfolio that balances academic achievement, work-integrated learning (WIL), and extracurricular engagement. Candidates who demonstrate initiative, adaptability, and relevant experiential skills are more likely to stand out in competitive labor markets. For hiring managers (HMs), the evidence highlights the value of considering diverse indicators of employability beyond traditional grade-based assessments. Incorporating evaluations of work-integrated learning (WIL) and co- or extracurricular activities (EXPs) into recruitment processes can enhance the identification of candidates with transferable skills and workplace readiness. Higher education institutions are encouraged to reexamine curriculum design and student support structures. Embedding WIL opportunities, expanding co-curricular programming, and formally recognizing extracurricular achievements can bolster graduates' employability profiles. Additionally, fostering closer collaborations between higher education institutions (HEIs) and employers is crucial to ensuring that learning outcomes stay aligned with evolving labor market demands.

Collectively, these implications underscore the importance of an integrated approach to undergraduate education—one that bridges academic knowledge with applied skill development. The evidence indicates that employers across both profit and nonprofit sectors increasingly value integrative skill development, with work-integrated and co-/extracurricular experiences carrying weight alongside academic records. Although grades remain relevant, they are no longer sufficient on their own. Employers are seeking well-rounded candidates whose applied experiences demonstrate adaptability and readiness for professional roles. Furthermore, by delineating sector-specific evaluative patterns, this research informs both higher education and career preparation practices. Students can strategically design portfolios of experiences that signal relevant competencies to targeted industries, while institutions can guide students in developing combinations of academic, experiential, and co-curricular learning aligned with diverse career pathways. Ultimately, the findings underscore that employability is not a one-size-fits-all construct,
but is interpreted through the lens of organizational context and sectoral priorities.

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APPPENDIX 1. DESCRIPTIVE STATISTICS OF STUDENT ACADEMIC PERFORMANCE & EXPERIENTIAL ACTIVITIES BY INDUSTRY (N=180)

Category	Experiential Activities and Achievements*[1]	NPO *M**[2] (*SD*)	F&I *M* (*SD*)	MFG *M* (*SD*)
APA	Major GPA	2.82 (0.98)	2.90 (0.88)	2.75 (0.84)
APA	Valedictorian	2.70 (1.15)	2.99 (0.86)	2.71 (0.92)
APA	Top Junior/Senior	2.65 (0.97)	2.71 (0.83)	2.38 (0.83)
APA	Dean's List	2.63 (0.99)	2.63 (0.83)	2.45 (0.79)
APA	Junior/Senior GPA	2.60 (0.94)	2.53 (0.99)	2.47 (0.81)
APA	Academic Reputation of University	2.53 (0.97)	2.75 (0.87)	2.73 (0.85)
APA	Quantitative GPA	2.46 (0.97)	2.50 (1.04)	2.36 (0.75)
APA	Cumulative GPA	2.44 (0.91)	2.59 (0.85)	2.60 (0.78)
EXP	Service/Volunteer Organization Member	2.88 (0.71)	2.26 (0.82)	1.93 (0.63)
EXP	Professional Honor Society	2.58 (0.82)	2.60 (0.90)	2.35 (0.89)
EXP	Student Organization Officer	2.49 (0.76)	2.29 (0.77)	2.38 (0.73)
EXP	Student Government Officer	2.46 (1.05)	2.47 (0.92)	2.29 (0.88)
EXP	Peace Corps Participation	2.42 (1.07)	1.96 (0.95)	1.47 (0.90)
EXP	Academic Scholarship Recipient	2.40 (0.80)	2.49 (1.00)	2.25 (0.97)
EXP	Clubs Associated with Student Major	2.32 (0.78)	2.18 (0.91)	1.89 (0.88)
EXP	Prior Military Service, Officer	2.25 (1.21)	2.51 (1.03)	2.05 (1.08)
EXP	Student Council Officer	2.25 (1.09)	2.38 (0.86)	2.15 (0.78)
EXP	Student Government Member	1.96 (0.96)	1.88 (0.84)	1.76 (0.64)
EXP	Varsity Captain or Team Leader	1.88 (1.12)	2.09 (1.03)	1.87 (1.04)
EXP	Prior Military Service, Enlisted	1.84 (1.10)	2.19 (1.01)	1.65 (1.04)
EXP	Professional Fraternity or Sorority	1.68 (0.99)	1.56 (0.85)	1.56 (0.98)
EXP	Varsity Sports	1.56 (1.09)	1.82 (0.88)	1.49 (1.02)
EXP	Athletic Scholarship Recipient	1.56 (1.05)	1.53 (1.03)	1.38 (1.03)
EXP	Reserve Officer Training Corps (ROTC)	1.54 (1.10)	1.94 (0.99)	1.47 (1.02)
EXP	Intramural Sports	1.21 (0.96)	1.16 (0.92)	1.09 (0.87)
EXP	Social Fraternity or Sorority	0.84 (0.82)	0.97 (0.83)	0.95 (0.76)
WIL	Off-campus, Related Non-internship	3.39 (0.65)	3.43 (0.76)	3.40 (0.63)
WIL	Off-campus, Related Internship	3.05 (0.79)	3.10 (0.78)	3.13 (0.84)
WIL	On-campus, Related Non-internship	2.79 (0.82)	2.68 (0.97)	2.78 (0.76)
WIL	On-campus, Related Internship	2.49 (0.91)	2.57 (0.74)	2.67 (0.75)
WIL	Off-campus, Unrelated Non-internship	2.12 (0.73)	2.09 (0.77)	1.82 (0.80)
WIL	Off-campus, Unrelated Internship	1.93 (0.70)	1.78 (0.77)	1.78 (0.63)
WIL	On-campus, Unrelated Non-internship	1.68 (0.85)	1.56 (0.76)	1.45 (0.74)
WIL	On-campus, Unrelated Internship	1.54 (0.68)	1.49 (0.68)	1.40 (0.66)

*[1] APA = Academic Performance & Achievement; EXP = extra- and co-curricular activities; WIL = work-integrated learning experiences. *[2] PVE results are sorted alphabetically by category, then by NPO sector means in descending order.

DEFINING RESPONSIBLE GLOBAL LEADERSHIP: AN INTEGRATIVE LITERATURE REVIEW

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ABSTRACT

The field of responsible global leadership (RGL) has emerged in response to global challenges such as climate change, inequality, and competing cross-border stakeholder demands. These challenges require leaders to balance competing interests across multinational and multicultural contexts. However, RGL has limited scholarly research and no widely accepted definition among scholars, and therefore, creating risks of conceptual misunderstanding and slowing theoretical progress. To address this gap, an integrative literature review was conducted across three domains: corporate social responsibility (CSR), global leadership, and responsible leadership. The review produced a conceptual model that integrates these domains and supports a proposed definition of RGL as an orientation or mindset by leaders to meet the societal and organizational expectations of stakeholders in countries where their organizations operate or have human impact. This definition and model provide a foundation for future scholarship and offer researchers a reference point for advancing this emerging field.

Keywords: Corporate Social Responsibility, CSR, Global Leadership, Responsible Global Leadership, Responsible Leadership

INTRODUCTION

The global environment is rapidly changing, presenting challenges across national borders and require responsible responses from leaders across all sectors. Climate change, supply chain disruptions, social polarization, and geopolitical tensions are some examples of the complexity global leaders must manage today (Abraham, 2024; Voegtlin et al., 2022; World Economic Forum, 2024). It is essential to recognize that no single sector can address these challenges independently. Hence, leaders from all sectors must be prepared to work across multinational and multicultural boundaries with stakeholders that include governments, businesses, and local communities (George et al., 2024; Voegtlin & Patzer, 2020).

Responsible global leadership (RGL) has emerged as a subfield of global leadership in response to these contemporary challenges, particularly in the area of social responsibility (Mendenhall, Miska, & Stahl, 2020; Stahl et al., 2016). Global leaders face more complex challenges than domestic leaders because they operate across multiple cultural, institutional, and stakeholder systems (Cotter, 2022; Mendenhall et al., 2012; Osland, 2018). Scholars have grouped these

challenges into four areas: *diversity and inclusion, ethics, sustainability,* and *human rights*, as described in Table 1 (e.g., Mendenhall, Miska, & Stahl, 2020; Stahl et al., 2016; Stahl et al., 2018).

TABLE 1. THE FOUR CATEGORIES OF CHALLENGES FOR RGL

Challenges	Descriptions
Diversity and Inclusion	"Implies that global executives should find ways to effectively address the claims, rights, and needs of a diverse set of stakeholders who have conflicting–and oftentimes legitimate–needs and expectations" (Mendenhall, Miska, & Stahl, 2020, p.226).
Ethics	"The need to ensure principle-driven, legally sound, and ethically acceptable behavior" (Stahl et al., 2016, p.83).
Sustainability	"Underscores the need for executives to safeguard sustainable development for current and future generations by contributing to lasting economic, environmental, and social value" (Mendenhall, Miska, & Stahl, 2020, p.228).
Human Rights (also known as Citizenship)	"The need to recognize, understand, and effectively address economic and social issues with respect to equality, social justice, and human rights connection" (Stahl et al., 2016, p.84).

These four categories represent a combination of the social, environmental, and ethical challenges that global leaders and the organizations they represent will face (Mendenhall, Miska, & Stahl, 2020). These challenges are grounded in the business perspective of corporate social responsibility (CSR), which is a fundamental characteristic of RGL (e.g., Beechler, 2012; Caligiuri & Thoroughgood, 2015; Maak et al., 2014; Mendenhall, Miska, & Stahl, 2020; Stahl et al., 2016; Voegtlin et al., 2020). While the four categories of challenges offer insights into RGL, a widely agreed-upon definition of what responsible global leadership entails remains elusive.

Without a widely accepted definition of RGL, global leadership scholars risk fragmentation in the research, and practitioners will lack a reliable frame of reference. As Mendenhall et al. (2012) noted in their global leadership research, definitions matter because they set boundaries for theory and make empirical results comparable. Similarly, Wacker (1998) emphasized that definitions are foundational for building cumulative knowledge for a field of study. Hence, without definitional clarity, RGL will advance slowly as an emerging field of study.

This study addresses two goals. First, it introduces a conceptual model of RGL by drawing on three established domains: corporate social responsibility (CSR), global leadership, and responsible leadership. Second, it offers a working definition of RGL that can serve as a common reference point for both researchers and practitioners. The first part of this article starts with a review of the existing literature on RGL, then introduces the conceptual model. From this model, a definition is proposed, followed by a discussion of its implications and directions for future research.

METHODOLOGY

This study used an integrative literature review (ILR) to propose a definition of the RGL construct. Torraco (2005) described the ILR as "a form of research that reviews, critiques, and synthesizes representative literature on a topic in an integrated way such that a new framework and perspective on the topic are generated" (p. 356). This approach is often used to conceptualize emerging topics or theoretical models by drawing from diverse fields and research methods (Snyder, 2019). ILR was selected here because it provides the flexibility to integrate literature from related areas such as CSR, global leadership, and responsible leadership to develop a proposed definition of RGL. The review begins with the limited RGL literature and then incorporates insights from these related domains.

REVIEW OF RESPONSIBLE GLOBAL LEADERSHIP LITERATURE

The idea of applying responsibility to leadership in a global context emerged in the business literature in the early 2000s, with works such as Doh and Stumpf's (2005) *Handbook on Responsible Leadership and Governance in Global Business* and Maak and Pless's (2008) chapter titled *Responsible Leadership in a Globalized World: A Cosmopolitan Perspective*. These early contributions largely extended responsible leadership into a global context but did not yet define a distinct construct. The term *responsible global leadership* first appeared in the literature around 2011, used explicitly by global leadership scholars to address the social and ethical demands of leadership across borders.

Much of the literature in global and responsible leadership address themes relevant to RGL, few explicitly use the term. Therefore, this integrative review focused solely on publications with the terms "responsible global leadership" or "responsible global leader" in the title, excluding related terms such as "globally responsible leadership" or "responsible global citizenship." Searches were conducted in Google Scholar, EBSCO, and ProQuest Central, with a focus on scholarly literature, including journal articles, book chapters, and dissertations, as seen in Table 2.

TABLE 2. RESPONSIBLE GLOBAL LEADERSHIP LITERATURE

Types of Publication	Author	Title
Academic Journal	Beechler, S. (2012)	Responsible Global Leadership
Chapter in a Scholarly Book	Bird, A. (2020)	In Search of Responsible Global Leadership That Makes a Difference
Academic Journal	Caligiuri, P., & Thoroughgood, C. (2015)	Developing Responsible Global Leaders Through Corporate-Sponsored International Volunteerism Programs
Chapter in a Scholarly Book	Daellenbach, K., Seymour, R. G., & Webster, C. M. (2020)	Exploring Responsible Global Leadership in Corporate-Community Transactions
Chapter in a Scholarly Book	Gosovic, A. K., & Søderberg, A.-M. (2020)	Developing Responsible Global Leaders in A Multinational High-Reliability Organization
Chapter in a Scholarly Book	Griffith, J., Clapp-Smith, R., Combs, G. M., & Ellis, D. (2020)	Responsible Global Leadership in An Era of Environmentalism
Chapter in a Scholarly Book	Gruber, M., & Žilinskaite, M. (2020)	The Long and Winding Road to Responsible Global Leadership in The Banking Industry
Chapter in a Scholarly Book	Jonsen, K., Levy, O., Toegel, I., & van Zanten, J. (2020)	The Role of Inclusion in Responsible Global Leadership
Chapter in a Scholarly Book	Maak, T., Pless, N. M., & Borecká, M. (2014)	Developing Responsible Global Leaders
Chapter in a Scholarly Book	Mendenhall, M. E., Miska, C., & Stahl, G. K. (2020)	Responsible Global Leadership: The Anatomy and Promise of An Emerging Field
Chapter in a Scholarly Book	Mendenhall, M. E., Žilinskaite, M., Stahl, G. K., & Clapp-Smith, R. (2020b)	Why Do We Study Responsible Global Leadership?
Academic Journal	Miska, C., Stahl, G. K., & Mendenhall, M. E. (2013)	Intercultural Competencies as Antecedents of Responsible Global Leadership
Chapter in a Scholarly Book	Oliveira, S. C., Giustiniano, L., & Cunha, M. P. e. (2020)	"Positive Change" in Responsible Global Leadership
Chapter in a Scholarly Book	Osland, J. S., & Lester, G. V. (2020)	Developing Socially Responsible Global Leaders and Making a Difference: Global Leadership Lab Social Innovation Projects
Chapter in a Scholarly Book	Puffer, S. M., Wesley, D., Dau, L. A., & Moore, E. M. (2020)	Responsible Global Leadership in Downstream and Upstream Supply Chains

Dissertation	Raza, A. A. (2024)	Conceptualization Of Responsible Global Leadership: A Comparative Quantitative Study of Students Orientations
Chapter in a Scholarly Book	Shetty, K. P. (2017)	Responsible Global Leadership: Ethical Challenges in Management Education
Chapter in a Scholarly Book	Stahl, G. K., Miska, C., Noval, L. J., & Patock, V. J. (2020)	Responsible Global Leadership: A Multi-Level Framework
Chapter in a Scholarly Book	Stahl, G. K., Miska, C., Noval, L. J., Sully de Luque, M., & Mendenhall, M. E. (2023)	The Challenge of Responsible Global Leadership
Chapter in a Scholarly Book	Stahl, G. K., Miska, C., Puffer, S. M., & McCarthy, D. J. (2016)	Responsible Global Leadership in Emerging Markets
Chapter in a Scholarly Book	Stahl, G. K., Pless, N. M., Maak, T., Miska, C., & Stahl, G. K. (2018)	Responsible Global Leadership
Chapter in a Scholarly Book	Voegtlin, C., & Patzer, M. (2020)	Responsible Global Leaders as Drivers of Responsible Innovation

Note. Book titles were excluded from the list because the corresponding chapters were included.

The literature search conducted between 2005 and 2024 identified three journal articles, 18 book chapters, and one dissertation with either "responsible global leadership" or "responsible global leader" in the title, as seen in Table 2. Nine chapters appeared in Mendenhall et al.'s (2020a) *Responsible Global Leadership: Dilemmas, Paradoxes, and Opportunities*, and four in Zander's (2020) *Research Handbook of Global Leadership*, with the rest drawn from other management and leadership volumes. Out of the three journal articles, the most recent one was published in 2015 (Beechler, 2012; Caligiuri & Thoroughgood, 2015; Miska et al., 2013). Despite these publications, the construct remains conceptually underexplored.

RGL draws its foundations from the intersection of global leadership and responsible leadership. Mendenhall, Miska, and Stahl (2020) described it as combining the task and relationship complexity of global leadership with the normative roots of responsible leadership. Although there is no consensus definition, most scholars adopt a stakeholder perspective that emphasizes relational and ethical factors in both local and global contexts (Mendenhall, Miska, & Stahl, 2020; Stahl et al., 2018). This view portrays RGL as managing the competing demands of diverse stakeholders, including shareholders, employees, communities, and non-profits (Doh & Quigley, 2014; Miska et al., 2014).

RGL draws primarily from responsible leadership, with early research extending its application into global contexts (Doh & Stumpf, 2005; Maak & Pless, 2008; Miska & Mendenhall, 2015; Voegtlin et al., 2012). Voegtlin et al. (2012) linked responsible leadership to both firm-level influence and individual action in addressing global business challenges. Similarly, Miska and Mendenhall (2015) emphasized the need for a global mindset to manage cross-border complexities

at the macro level. Collectively, these studies underscore the importance of applying responsible leadership in a global context and contribute to the development of RGL as a field of study.

There is a consensus among scholars that RGL must include stakeholder expectations into decision-making through a social responsibility lens (e.g., Mendenhall, Miska, & Stahl, 2020; Stahl et al., 2018). Stahl et al. (2018), drawing on Maak et al. (2016), described it as "a relational influence process between leaders and stakeholders" (p. 464). Similarly, Mendenhall, Miska, and Stahl (2020) cited Patzer and Voegtlin (2013), who argued that RGL must balance economic needs with moral integrity in the context of ethical pluralism. Together, these perspectives frame RGL as a stakeholder- and ethics-based approach to leadership at the intersection of organizations and society in a global context.

CSR in the global context is complex due to differing stakeholder expectations shaped by national requirements and cultural norms (Crane et al., 2013). In RGL literature, scholars often draw on the responsible leadership concept of "doing good" and "avoiding harm" to manage these differences within the CSR realm (Stahl et al., 2018; Voegtlin & Patzer, 2020; Stahl & Sully de Luque, 2014). The concept of "doing good" refers to voluntary efforts that go beyond legal requirements, like philanthropy or community development initiatives. At the same time, "avoiding harm" emphasizes the prevention of negative operational impacts on stakeholders such as employees and local communities. In RGL literature, this dual perspective has been applied to the four categories of challenges global leaders face in addressing social responsibility (Mendenhall, Miska, & Stahl, 2020). The following sections will provide a brief description of the four challenges of RGL.

Diversity and Inclusion Challenge

Global leaders must balance the claims and expectations of stakeholders across multiple cultures, that usually face conflicting values and perspectives. Mendenhall, Miska, and Stahl (2020) described this as the diversity and inclusion challenge, where leaders must respond to legitimate but competing needs across diverse groups. For example, Stahl et al. (2018) highlighted a German bank's expatriate managers in Japan who promoted gender equality but encountered strong cultural resistance from their Japanese male counterparts. Similarly, PepsiCo CEO Indra Nooyi's initiatives to increase representation of women and minority groups across countries demonstrated the complexity of advancing inclusion in a multinational corporation (Miska et al., 2020). These two examples demonstrate that diversity and inclusion in global contexts can become ethical dilemmas that require global leaders to navigate cultural tensions responsibly.

Ethics Challenge

Operating across jurisdictions exposes global leaders to ethical dilemmas that include cultural misunderstandings and different labor practices (Mendenhall, Miska, & Stahl, 2020; Stahl et al., 2016). The classic Levi Strauss case in Bangladesh, in which child labor was accepted among families locally but contradicted the company's Western values, demonstrates the difficulty of

aligning global standards with local realities (Stahl et al., 2018). Gosovic and Søderberg (2020) also described a Scandinavian company's leadership challenge of applying its individualistic code of ethics to its subsidiary in the collectivist country of China. These two examples illustrate the ethical dilemma of balancing local norms and stakeholder expectations with the global principles upheld by multinational corporations. RGL literature frames this as the need for principle-driven, ethically acceptable behavior that protects the long-term legitimacy of the organization while respecting diverse contexts at the local levels.

Sustainability Challenge

The term sustainability reflects the responsibility of business leaders to balance and safeguard long-term economic, environmental, and social value for future generations (Mendenhall, Miska, & Stahl, 2020). Moreover, businesses operating in multiple countries are under increasing scrutiny from various stakeholders to address issues such as climate change and inequality by integrating environmental and social initiatives into their business strategies (Voegtlin et al., 2022). For example, PepsiCo's "Performance with Purpose" agenda, which integrated product, people, and planet initiatives, demonstrates how leaders of a multinational corporation can successfully align business objectives with broader societal goals (Miska et al., 2020). In the RGL literature, sustainability is a central expectation of global leadership that requires balancing the short-term demands of stakeholders with long-term sustainability in the areas where they conduct business (Mendenhall, Miska, & Stahl, 2020; Stahl et al., 2018).

Human Rights Challenge

Unfortunately, multinational corporations often operate in developing regions with weak governance, where human rights violations are more likely to occur (Mendenhall, Miska, & Stahl, 2020; Stahl et al., 2018). Shell's failure to respond to human rights abuses and environmental degradation in Nigeria in the 1990s remains a well-cited example of corporate inaction (Stahl et al., 2018). More recently, Puffer et al. (2020) noted that abuses are often hidden in the lower tiers of global supply chains by third parties, where corporate oversight to catch violations is limited. These cases illustrate the human rights challenge, where leaders must recognize and address issues of equality, justice, and rights even when local enforcement is weak. For RGL, this means acknowledging that leadership responsibilities extend beyond profit to protecting vulnerable stakeholders in global operations.

These four challenges of RGL demonstrate the multifaceted responsibilities that leaders face when operating across cultures, markets, and institutions (Mendenhall, Miska, & Stahl, 2020). However, while the literature does a good job describing these RGL challenges, it does not converge on a shared framework or definition of responsible global leadership. To address this gap, the following section introduces a conceptual model that integrates Carroll's (1979, 1991) CSR model, global leadership, and responsible leadership to propose a definitional foundation for the field.

CONCEPTUAL MODEL OF RESPONSIBLE GLOBAL LEADERSHIP

The previous section reviewed the literature on RGL and underscored the absence of a widely accepted definition. This lack of a definition creates ambiguity, risks conceptual misunderstandings, and limits practical application (Mendenhall, Miska, & Stahl, 2020; Wacker, 1998). To address this gap, the following section integrates insights from CSR, global leadership, and responsible leadership to propose a conceptual model of RGL, illustrated in Figure 1.

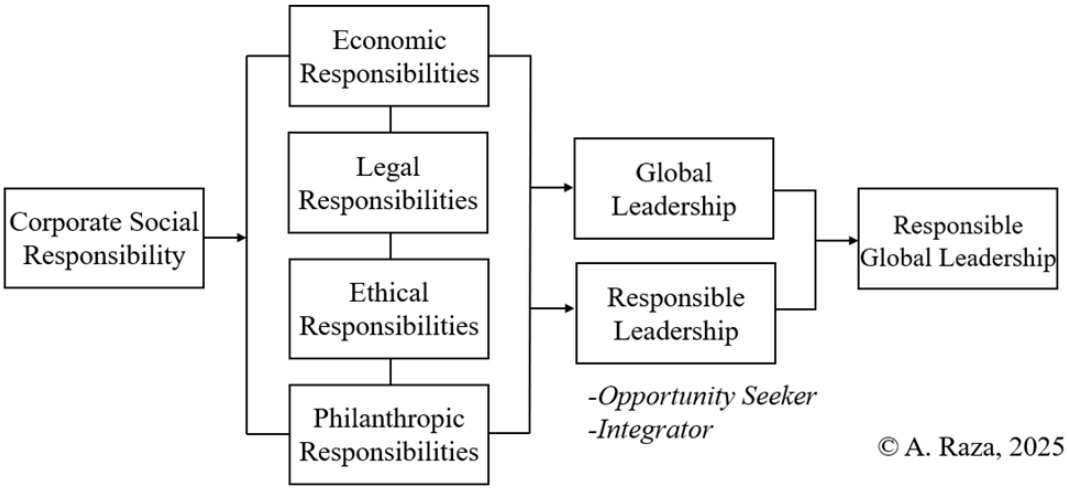

FIGURE 1. CONCEPTUAL MODEL OF RESPONSIBLE GLOBAL LEADERS

Note: This conceptual model integrates the elements of CSR with global leadership and responsible leadership constructs to convey the building blocks of responsible global leadership (RGL). Although there are four responsible leadership orientations, the *opportunity seeker* and *integrator* are the most applicable to this model (Pless et al., 2012; Waldman et al., 2020).

Corporate Social Responsibility

The proposed RGL model is grounded in corporate social responsibility (CSR). To establish this foundation, this section briefly reviews the history of CSR before introducing Carroll's (1979, 1991) four-part model, which provides key elements for the RGL model.

The essence of CSR emerged after World War II, as business leaders were increasingly seen as responsible for more than themselves and their shareholders. Abrams (1951) argued that managers, as professionals embedded in their communities, had an obligation to consider public interests beyond the immediate business needs. His work provided an early articulation of broader business responsibilities, even though he did not use the term CSR directly.

Similarly, in *Social Responsibilities of the Businessman*, Bowen (1953) argued that business decisions must account for their impact on communities and incorporate public interests to minimize harm. Carroll (1999) later recognized Bowen as the "Father of Corporate Social Responsibility" (p. 270) for the foundational significance of this work in the business field.

Davis (1960) expanded the idea by defining social responsibility as "businessmen's decisions and actions taken for reasons at least partially beyond the firms direct economic and technical interests" (p. 70). Sethi (1975) later emphasized aligning corporate behavior with prevailing social norms and expectations of performance. Together, these works reinforced the view that business responsibilities extend beyond profit and compliance, setting the stage for Carroll's (1979, 1991) influential CSR model.

Carroll's CSR Model

Carroll's (1979, 1991) four-part CSR model [economic, legal, ethical, and discretionary responsibilities (later termed philanthropic)] remains one of the most influential CSR constructs in academia, cited over 22,000 times (Google Scholar, 2025). In 1991, he reorganized it as a pyramid, putting economic responsibility at the base, followed by legal, ethical, and philanthropic responsibilities. Initially developed from a U.S. perspective, follow-on studies have confirmed its global application, with varying prioritization of responsibilities across different cultures and religions (e.g., Ehie, 2016; Masoud, 2017; Nurunnabi et al., 2019; Schmidt & Cracau, 2018; Visser, 2006). For example, philanthropy is emphasized in Muslim contexts due to the importance of charity in this religion (Nurunnabi et al., 2019). In some parts of Africa, economic and philanthropic responsibilities are prioritized because of community expectations and weak governance (Ehie, 2016; Visser, 2006). That said, Carroll's model remains a widely accepted framework for analyzing CSR responsibilities across various countries and cultures (Carroll, 1999, 2016, 2021). The following paragraphs describe the four responsibilities in this model.

Economic Responsibility. The economic dimension of Carroll's (1979, 1991) CSR model is foundational, as society expects businesses to provide goods, services, and jobs while maintaining their sustainability. Moreover, profitability enables them to fulfill their other obligations to society. As Carroll (2021) noted, businesses must generate sufficient returns to sustain operations and attract investment, making economic viability a prerequisite for the other CSR dimensions.

Legal Responsibility. Along with profitability, businesses are also expected to comply with laws and regulations that reflect society's "codified ethics" and fair business practices (Carroll, 2016). These obligations can vary across jurisdictions, requiring global firms to comply with the legal requirements in multiple countries and communities. Legal compliance represents the minimum societal standard for responsible behavior, reinforcing the principle that profit must not come at the expense of legal accountability (Carroll, 2016).

Ethical Responsibility. Ethical responsibility encompasses activities that stakeholders within society consider fair, just, and protective of rights, even when not codified into law (Carroll, 1991). However, ethical expectations vary across cultures, requiring global leaders to recognize and

respect different norms (e.g., Ehie, 2016; Masoud, 2017; Nurunnabi et al., 2019; Schmidt & Cracau, 2018; Visser, 2006). This dimension is especially critical in countries with weak governance or questionable practices, such as child labor or bribery, where legal compliance alone is insufficient for responsible action.

Philanthropic Responsibility. Philanthropic responsibility encompasses voluntary initiatives that extend beyond a business's economic, legal, and ethical responsibilities. Carroll (1991) initially labeled this category "discretionary," but later termed it "philanthropic," as a visible way for firms to "give back" to society. Although voluntary, these activities are often desired and publicly expected by society's stakeholders (Carroll, 2021). Philanthropy can take many forms, from financial donations to community programs to mobilizing corporate resources during crises (Carroll, 1991, 2021).

The first domain of the RGL model draws on Carroll's (1979, 1991) four CSR responsibilities (economic, legal, ethical, and philanthropic), which outline the interrelated obligations businesses hold toward stakeholders. Profitability is foundational, as without it, firms cannot sustain operations or meet philanthropic commitments that benefit communities and non-profits. This CSR model is globally applicable, however cultural contexts may influence the order of priorities of the four responsibilities (e.g., Ehie, 2016; Masoud, 2017; Nurunnabi et al., 2019; Schmidt & Cracau, 2018). For this reason, Carroll's (1979, 1991) model provides an essential foundation for conceptualizing CSR within the proposed RGL framework.

Global Leadership

The second domain of the RGL model builds on the field of global leadership, which has a multidisciplinary foundation in international business, cross-cultural management, comparative leadership, and global management (Bird & Mendenhall, 2016; Osland, 2018). These fields provide the principles for understanding the complexity of leadership in global contexts (Bird & Mendenhall, 2016). Because RGL is a subfield of global leadership, it serves as a key domain for framing leadership roles and expectations across cultures and institutions.

Early global leadership research emphasized the competencies, traits, and skills needed to lead across cultures (Bird & Mendenhall, 2016; Osland, 2018). Bird and Mendenhall (2016) later organized this literature into four categories: *global leadership competencies*, *global leadership as an expert cognition*, *global leadership development*, and *types of global leadership*. These categories provide the basis for understanding the global leadership domain within the proposed RGL model.

Global Leadership Competencies. Global leadership competencies are the proficiencies required for effective leadership across cultures (Bird, 2018; Bird & Mendenhall, 2016). Bird (2018) grouped them into three categories: business and organizational savvy (69 competencies), managing people and relationships (63), and managing self (60) (p. 131). Together, these encompass a wide range of behavioral and cognitive skills, such as cross-cultural communication and strategic thinking, essential for global leadership.

Global Leadership as an Expert Cognition. Global leadership as expert cognition emphasizes how experience shapes leaders' ability to perform in complex global contexts (Bird & Mendenhall, 2016). In this category, individual experiences help develop the cognitive expertise needed to work through ambiguity and complexity. Osland et al. (2013) argued that such expertise develops through exposure to challenging environments, enabling some leaders to handle situations that novice leaders may struggle to manage.

Global Leadership Development. Global leadership development encompasses the processes used to build the skills required for global roles (Bird & Mendenhall, 2016). Programs range from classroom-based cultural training to experiential methods, with the latter proving most effective because they immerse leaders in real-world cultural contexts (Oddou & Mendenhall, 2018). For example, PricewaterhouseCoopers' Ulysses Program offered transformational experiences by engaging participants intellectually, emotionally, and behaviorally (Maak et al., 2014). These types of experiential initiatives abroad can help develop leaders' awareness of cultural differences and better prepare them for the ambiguity of cross-cultural work; however, outcomes can vary depending on individual backgrounds and career fields.

Types of Global Leadership. The types of global leadership literature emphasize the need for typologies to avoid overgeneralizing the field (Bird & Mendenhall, 2016). Bird and Mendenhall (2016) argued that distinguishing leader types (e.g., business, military, religious, and educational) will assist with more precise empirical research and a better understanding of the different types of global leaders and competency development. Hence, grouping leaders by shared traits can enable focused study and prevent broad generalizations. Within this framing, responsible global leadership (RGL) can be viewed as a type of global leadership centered on stakeholder engagement and social responsibility (Mendenhall, Miska, & Stahl, 2020).

The global leadership domain of this proposed RGL model provides the principles for understanding the complexity of leadership in cross-cultural contexts (Bird & Mendenhall, 2016). It encompasses competencies, experiential learning that develops expert cognition, and leadership development practices that build global perspective (Bird, 2018; Bird & Mendenhall, 2016; Osland et al., 2013). It is also important to note that categorizing types of global leadership can further prevent overgeneralization and allow for more precise study in the field (Bird & Mendenhall, 2016). Overall, this domain highlights the cognitive demands of leading globally, which are central to RGL (Osland et al., 2013).

Responsible Leadership

The third domain of the proposed RGL model is responsible leadership, which differs from traditional leader–follower approaches by grounding leadership in stakeholder theory (Pless, 2023). In this construct, employees, communities, and other groups are viewed as stakeholders with whom leaders must build relationships to achieve business and societal objectives (Maak & Pless, 2006; Pless et al., 2012). Decision-making in this field centers on managing competing stakeholder interests that extend beyond economic priorities (Pless et al., 2012). This complexity

overlaps with the relational demands of global leadership and the obligations of CSR, making responsible leadership an essential domain in the RGL model (Mendenhall, Miska, & Stahl, 2020).

The responsible leadership domain emphasizes leaders' ability to mobilize internal and external stakeholders to advance business goals and address societal challenges (Pless et al., 2021; Pless et al., 2022). Leadership behavior in this field reflects overlapping roles: *normative* (e.g., servant, visionary), *relational* (e.g., boundary spanner), and *operational* (e.g., change agent, architect, coach), that shift depending on context and stakeholders (Maak & Pless, 2006; Pless et al., 2021). These roles are further shaped by individual leaders' orientations or mindsets toward responsible leadership and stakeholders (Pless et al., 2012; Pless, 2023).

Pless et al. (2012) identified four responsible leadership orientations that reflect how leaders approach social responsibilities and stakeholders: *traditional economist*, *opportunity seeker*, *integrator*, and *idealist*. Each orientation represents a distinct approach to responsible leadership, shaping how leaders balance business and societal demands.

Traditional Economist. The traditional economist orientation reflects Milton Friedman's view that a business's primary duty is to maximize shareholder profits (Pless et al., 2012). Leaders with this orientation focus narrowly on owners and shareholders, showing little accountability to other stakeholders. As Pless et al. (2012) note, these leaders may comply with minimal CSR norms but are often vulnerable to irresponsible behavior driven by profit motives (Pless, 2023).

Opportunity Seeker. Opportunity seekers also prioritize profits but recognizes CSR initiatives when it supports businesses profitability (Pless et al., 2012). These types of leaders adopt a strategic "shared value" approach, engaging a broader set of stakeholders if doing so benefits the firm financially (Pless et al., 2012; Pless, 2023). While this orientation is common in practice, it risks short-termism and superficial CSR activities that fail to address long-term societal challenges (Pless, 2023).

Integrator. The integrator balances business performance with genuine societal commitment (Pless et al., 2012). Leaders in this orientation view profits as an outcome of operating a responsible business. These leaders emphasize creating value for both the business and the broader society, demonstrating high accountability to both internal and external stakeholders (Pless et al., 2012; Pless, 2023). Due to this balance, integrators are particularly relevant to RGL and its emphasis on sustainable stakeholder engagement (Waldman et al., 2020).

Idealist. Idealists are perceived as social entrepreneurs who view business primarily as a tool to address societal challenges (Pless et al., 2012). These leaders act from strong ethical or even spiritual motivations, at times prioritizing social causes over financial returns (Pless et al., 2012; Pless, 2023). While proactive and altruistic, this orientation is rare in corporate contexts, as idealists may struggle to reconcile their mission-driven focus with shareholder expectations (Waldman et al., 2020).

Among the four orientations, the opportunity seeker and integrator are most common in business practice (Pless et al., 2012; Pless, 2023; Waldman et al., 2020). The key difference is scope: opportunity seekers align CSR with shareholder interests, while integrators extend accountability

to all stakeholders through a balanced commitment to business and society. By contrast, the traditional economist orientation is increasingly untenable in the face of current social and environmental pressures, and the idealist orientation is more typical of social entrepreneurs outside publicly traded firms (Pless et al., 2012; Waldman et al., 2020). For these reasons, the opportunity seeker and integrator provide the most relevant orientations for conceptualizing responsible global leadership.

Summary of Literature

This section presented the literature on CSR, global leadership, and responsible leadership as the three foundational domains for the proposed RGL model. CSR is represented by Carroll's (1979, 1991) four-part model of economic, legal, ethical, and philanthropic responsibilities. The global leadership domain highlights competencies, development, and the cognitive expertise required to lead across cultures (Bird & Mendenhall, 2016). The responsible leadership domain contributes to the four orientations (traditional economist, opportunity seeker, integrator, and idealist) that shape leaders' approaches toward stakeholders (Pless et al., 2012). Collectively, these domains provide the conceptual foundation for defining responsible global leadership. However, despite these contributions, the field still lacks a widely accepted definition, emphasizing the need for one in the field.

PROPOSED DEFINITION OF RESPONSIBLE GLOBAL LEADERSHIP

RGL is an emerging subfield of global leadership with limited scholarship. Since 2011, only three journal articles have directly addressed it, the most recent being in 2015 (Beechler, 2012; Caligiuri & Thoroughgood, 2015; Miska et al., 2013). Most contributions appear as book chapters (e.g., Mendenhall et al., 2020a; Stahl et al., 2023) or a single dissertation (Raza, 2024). This paucity of research has left the construct undefined, creating risks of conceptual misunderstanding and slowing theoretical development. At the same time, the gap presents an opportunity to advance the field by proposing a definition that could serve as a foundation for future scholarship.

Drawing on the proposed RGL model that combines CSR, global leadership, and responsible leadership, I propose the following definition:

> Responsible global leadership is an orientation or mindset taken by organizational leaders to meet the societal and organizational expectations and interests of their multinational/multicultural stakeholders in those countries where the organization has an operating presence or other areas where the organization has a human impact.

This definition takes an interdisciplinary approach grounded in the established fields of responsible and global leadership (Pless et al., 2012; Reiche et al., 2017; Waldman et al., 2020). From responsible leadership, it adopts the idea of orientation or mindset toward stakeholders, shaped by leaders' beliefs and inclinations that influence organizational actions (Pless et al., 2012; Waldman

et al., 2020). Unlike many responsible leadership definitions, however, it avoids titles such as "executive," allowing broader application across organizational types. From the global leadership field, it incorporates the terms *multinational* and *multicultural* to capture the diverse stakeholders operating across borders (Reiche et al., 2017). Finally, it connects to CSR by emphasizing leaders' responsibility to integrate societal expectations into decision-making (Carroll, 1979, 1991).

The final element of the definition, "operating presence or other areas where the organization has a human impact," acknowledges the broader consequences of an organization's activities. Human impact can extend beyond direct operations, such as environmental damage (e.g., pollution in waterways and atmosphere) or the misuse of technologies like social media and artificial intelligence, which have no geographical boundaries. In this way, the proposed definition extends beyond describing RGL as a construct, emphasizing accountability for unintended consequences that affect unseen stakeholders.

IMPLICATIONS

The proposed definition of RGL offers scholars a reference point for future research in this emerging field. This definition can guide all types of studies by providing a clear construct for identifying and describing sample populations. The supporting literature also introduces variables that can be measured or extended to compare leaders' orientations toward stakeholders and social responsibilities in global contexts (Carroll, 1979, 1991; Pless et al., 2012). Hence, this definition can help reduce fragmentation, support theory-building, and contribute to the cumulative development of RGL scholarship.

The proposed RGL definition centers on individual leaders' orientations toward stakeholders' needs in a global context, grounded in the responsible leadership literature (Pless et al., 2012; Waldman et al., 2020). While primarily individual-focused, this definition has a subtle connection to CSR at the firm level, because leaders' orientations often shape organizational policies and activities (Carroll, 1979, 1991; Waldman et al., 2020). This linkage suggests some practical applications: the construct can inform leadership development programs, guide CSR decision-making, and support the design of assessment tools to anticipate how leaders may respond to stakeholder demands in multinational contexts.

CONCLUSION

This study proposed a definition of responsible global leadership (RGL) for the purpose of contributing to the advancement of this emerging field. The definition was developed through an integrative literature review guided by a conceptual model grounded in three domains: CSR, global leadership, and responsible leadership. From CSR, the model drew on Carroll's (1979, 1991) four-part model (economic, legal, ethical, and philanthropic responsibilities) which has been applied across cultures (e.g., Ehie, 2016; Masoud, 2017; Nurunnabi et al., 2019; Schmidt & Cracau, 2018). From global leadership, it incorporated insights into the complexity of leading across cultures and

institutions (Bird & Mendenhall, 2016; Mendenhall et al., 2020a). From responsible leadership, it emphasized the four orientations (traditional economist, opportunity seeker, integrator, and idealist) that reflect how leaders approach stakeholders (Pless et al., 2012; Waldman et al., 2020). These orientations highlight the varied ways leaders engage with CSR policies and activities on behalf of their organizations.

The absence of a widely accepted definition has created risks of conceptual misunderstanding and slowed theoretical progress in the field of RGL (Mendenhall et al., 2012; Mendenhall, Miska, and Stahl (2020); Wacker, 1998). I hope that the proposed definition will provide scholars with a reference point to establish consistency in RGL research. By offering definitional clarity, the model and definition presented in this article can help global leadership scholars strengthen conceptual foundations, refine sample criteria, and advance cumulative knowledge in this nascent field.

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