University of Alberta

Employee Attitudes on
Corporate Social Responsibility at the
Frontline Level of an Energy Transportation Company

by

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Dedication

For my father, Panayiotis.
You will forever remain my alpha and omega.
You inspired and challenged me, and together we reached the summit.
Thank you for everything, especially your last promise to me.
I love and miss you dearly, dad.
Ο Θεός να αναπαύσει την ψυχή σου (God rest your soul).

For my children Panayiotis, Angelina and Stefania.
Together, you gave me the strength and spirit I needed to complete this journey.
For this, I am eternally grateful to each of you.
"Wonder is the beginning of wisdom" – *Socrates.*
Always dream. Then pursue and achieve.
There are no shortcuts, only passion and hard work.
And remember, never give up.

With infinite love, your dad, Boulee.

Abstract

Corporate social responsibility (CSR) reflects the commitment businesses voluntarily undertake to integrate ethical behaviors and societal matters within their operating contexts, decision-making processes, strategies and corporate values while simultaneously maximizing economic objectives.

As large firms embrace and integrate the principles of CSR into their business practices, company personnel will likely be expected to show actions that are linked to conveyed corporate values and related policies. This words-to-action progression, an inevitability when mainstreaming a concept, will heighten credibility and perceived CSR commitment amongst the relevant stakeholders of the corporation. It also presents the firm with an opportunity to heighten the alignment between corporate values and personal attitudes of its employees, which can be beneficial from an attraction and retention point of view.

To enhance the likelihood that employees at the frontline level will accept these principles and become engaged with these values, it is important to quantify and understand their attitudes towards the social responsibility construct itself. It is also relevant to examine whether certain workplace factors and individual characteristics may impact their viewpoints.

This research study evaluated whether the variables of work climate perception, education level, and age directly influenced one's corporate social responsibility perspective. The research method selected to gather data was the survey approach, which used a structured questionnaire. The developed survey

was based to a large extent on existing instruments available in literature. One type of survey was used for workplace climate perceptions and a second type was used for CSR attitudes (orientation). Demographic information was also collected within the survey.

A case study is presented, which is based on a survey of frontline personnel employed by a North American energy transportation company (Enbridge Inc.). Survey development is described, analysis methods are explained, and results are presented with statistical measures to verify hypotheses related to the CSR attitudes of employees.

The implications of the findings are discussed from a business strategy perspective, along with the limitations of the study and suggestions for future research.

Acknowledgements

An odyssey like this does not happen in isolation. Many individuals and groups played a significant role in the creation of this dissertation and need to be properly recognized.

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Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Problem

Introduction

"Successful corporations need a healthy society… a healthy society creates expanding demand for business, as more human needs are met and aspirations grow. Any business that pursues its ends at the expense of the society in which it operates will find its success to be illusory and ultimately temporary. At the same time, a healthy society needs successful companies….if governments, NGOs, and other participants in civil society weaken the ability of business to operate productively, they may win battles but will lose the war, as corporate and regional competitiveness fade, wages stagnate, jobs disappear, and the wealth that pays taxes and supports nonprofit contributions evaporates." (Porter and Kramer, 2006)

Today's corporations need to move beyond the historically-motivated and near-sighted primary goal of satisfying shareholder expectations. Appraising, understanding, and strategically responding to the interests of relevant stakeholders are activities that are now equally crucial if a firm is to remain competitive, sustainable, and profitable. To the same extent, stakeholders need to deeply reflect upon the issues they are advocating, the tactics employed to bring attention to them, and the expectations they are seeking of corporations, in order to ensure they do not risk 'biting the hand that feeds.' Awareness of this mutual dependence between corporations and society suggests that business decisions and social policies should benefit both parties (Porter and Kramer, 2006).

Corporate social responsibility (CSR) can act as the ideological force behind the pursuit of finding win-win solutions when corporate and societal interests overlap in a contradictory manner. CSR is generally understood to be the ways firms integrate social, environmental, and economic concerns into their values, cultures, decision-making, strategies, and operations in a transparent and accountable manner, thereby establishing better practices within the firm, creating wealth, and improving society (Industry Canada, 2012). Such types of commitments undertaken by the company are often viewed as exceeding legal and/or regulatory requirements, and can address a variety of subjects, including but not limited to:

- corporate governance and ethics;

- health and safety;

- environmental stewardship;

- human rights (including core labor rights);

- human resource management;

- community involvement, development, and investment;

- involvement of and respect for Aboriginal people;

- corporate philanthropy and employee volunteerism;

- customer satisfaction and adherence to principles of fair competition;

- anti-bribery and anti-corruption measures;

- accountability, transparency, and performance reporting; and

- supplier relations (Industry Canada, 2012).

As is the case with most conceptualizations, arguments against the idea and practice of CSR also reside within the business landscape. More often than not, the opinions of Milton Friedman (1970) serve as the starting point of this opposition. Friedman proclaimed that the sole responsibility of a corporation is to maximize shareholder profits while complying with the basic rules of society (i.e. legal and ethical). Societal concerns, as per Friedman, are best left to government and legislation for addressal and resolution. Sacrificing profits to enhance social welfare is like imposing a tax on the shareholder, which goes completely counter to what executives were hired to do (i.e., to maximize profits) (Karnani, 2010). Carroll and Shabana (2010) summarize other positions that are often taken against the notion of CSR, which include: (a) businesses are not suited to address these types of issues as most of their know-how lies within operations and business-support activities, not socially-oriented practices and/or decision making (Davis, 1973), (b) CSR dilutes the firms' main purpose as it places the corporation into an area that is not directly related to its' core business objective (Hayek, 1969), (c) corporations already hold plenty of power, so giving them an opportunity to have even more by inviting them into the social sphere is a risky proposition (Davis, 1973), and (d), the pursuit of CSR will reduce the competitiveness of the firm when competing on the global stage. As Carroll and Shabana (2010) note, these explanations were formed many years ago and reflect the relative newness and narrowness of the CSR concept at that time. These viewpoints likely don't relate as much in today's business setting, as both business and the CSR ideology have mutually evolved and progressed since then.

Corporations should be cautious in relying solely upon boardroom-developed CSR policies and platforms, communicated pledges, and/or corporate philanthropic acts as means of displaying their commitment to any addressed CSR matter. Many of today's stakeholders are likely to interpret such positioning as rhetoric and/or public relations 'window dressing,' which is symptomatic of the general mistrust and lack of confidence abundantly present in today's business-society relationships. Today's stakeholders expect and demand more of corporations, and are holding them accountable to their publicly-committed and implied socio-economic responsibilities. Realizing this, any actions that can endorse stated CSR principles will undeniably elevate the integrity of the firm's citizenship platform, along with its reputation. Additionally, evidence of observable CSR, along with quantification of the positive societal impact it may have, also has the potential to enhance and nurture several of the firms' stakeholder relationships.

Instilling CSR aspects into a firm's everyday operations, business practices, and decision-making processes is akin to the embedment of quality and safety principles within workplace cultures from years past. It is not an overnight journey, and executive level commitment is imperative for its successful integration into the fabric of the organization at every level. Employees of the organization will need to understand from a corporate perspective why the commitment is being made, the expected net benefits to the firm as well as its employees, and the expectations of each employee in his/her respective role. Buy-

in is critical at all organizational levels if the desired values are to evolve into norms within the organization.

Committing to the CSR ideology and the vision of putting the 'notion into motion' within all layers of the workplace ultimately requires a degree of alignment. That is, the personal beliefs of each employee and the social responsibility platform of the company must match or at least overlap. Each member of an organization has a particular perspective of how a corporation should act and conduct its affairs within the environment(s) it operates in and impacts. Knowing this, any CSR mainstreaming effort should seek a better understanding of these individual outlooks and how they may vary—not only individually, but collectively across distinct employee clusters. These insights can help foster the development and implementation of unique, corporately-sponsored, value-aligned opportunities (programs) for employees to 'naturally' connect and engage with. A process such as this can help ensure that the CSR actions undertaken by the employee can achieve a higher synchronization to the CSR policies of the organization. As such, the likelihood of authentic CSR ambassadorship emerges, as employees will be undertaking actions that matter to them as well as the company. Further, the bond between employee and employer is strengthened from a workforce attraction and retention perspective.

As companies move to integrate the principles of CSR into their organizational DNA, the need to have frontline personnel formally champion and enact upon communicated corporate values will ultimately arise. At that time, evidence of actionable and/or observable CSR will become an expectation of

5

employment, and will be molded within the performance management system of the company. This is inevitable if the philosophy and practice of CSR is to be legitimized and realized across all layers of the corporation. To enhance the likelihood of genuine adoption of such an effort, it is in a firm's best interest to understand and quantify individual, frontline attitudes towards the CSR construct.

Study Objective

The principal purpose of this dissertation is to extend current knowledge related to CSR attitudes (i.e., orientations) by investigating a set of corporate and individual characteristics that have the potential to impact individual CSR mindsets at the frontline level of a corporation.

Specifically, this research investigates whether work climate perceptions, education level, and/or age (i.e., a generational perspective) can directly influence CSR attitudes. These notions will be explored across the frontline level of a North American energy transportation company, both amongst supervisors and employees, as well as in the field and office settings.

Study Approach

A thorough literature review of the pertinent academic domains is done first to establish the setting of the study. Following this, the methodology employed to conduct the study and collect a data set for evaluation is described. The study utilizes an updated survey tool and method for polling a sample population. Survey development is described, analysis methods are explained, and

results are presented with statistical measures to verify hypotheses related to frontline employee inclinations towards CSR. A discussion of the findings is then undertaken, which includes some potential implications for corporate strategies. Limitations of the study, along with proposed future research directions, are also offered for reflection and consideration.

Study Focus and Hypotheses

The attitude of an individual towards corporate social responsibility can be influenced by both workplace-related factors and individually-based characteristics (O'Neill et al., 1989; Marz et al., 2003). The following research study seeks to contribute to this body of knowledge by focusing on and investigating whether the variables of work climate perception (i.e., autonomy-supporting versus controlling), education level, and age directly influence one's social responsibility perspective at work. In doing so, it seeks to extend the Marz et al. (2003) corporate-individual model to further understand what may impact CSR orientations at the frontline level of a sample organization. Figure 1 depicts Marz's research design (model) that this study is built upon. It illustrates the corporate-individual structure that was proposed and studied by Marz, as well as the specific variables within his research setting (i.e., the managerial level within a large, international accounting and consulting firm located in Berlin, Germany).
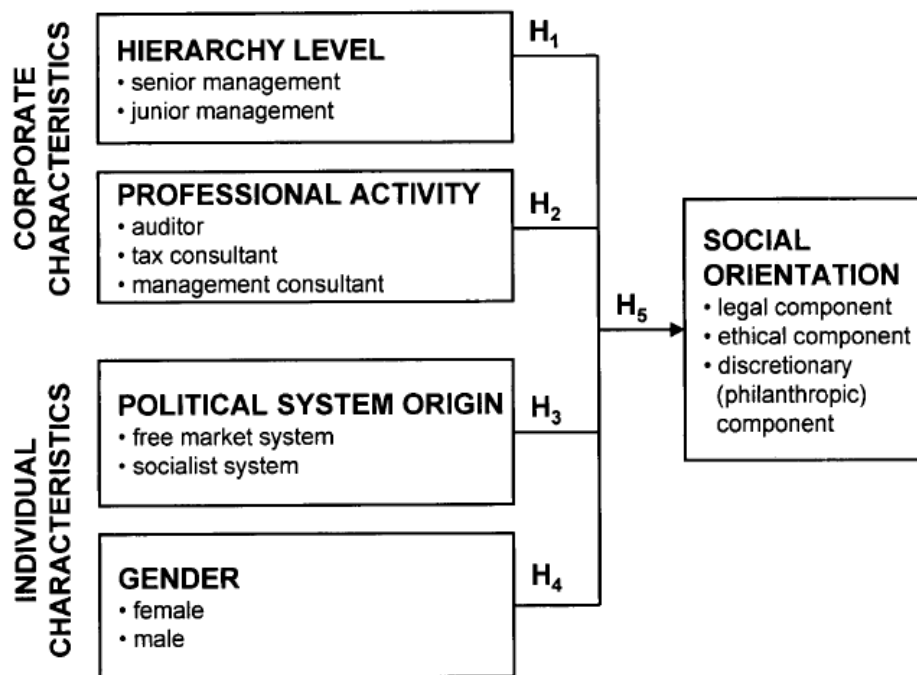
Figure 1. Marz Research Design/Model

Source: Marz, J. W., Powers, T. L., & Queisser, T. 2003. Corporate and Individual Influences on Managers' Social Orientation. *Journal of Business Ethics* 46 (1): 1–11.

Two key focus areas were identified for assessment using a statistical survey. The primary focus, *CSRO and the Workplace*, investigates whether a relationship exists between an individual's perceived level of autonomy support at work (i.e., as per Self-Determination Theory [SDT]) and his/her expressed preference towards each of Carroll's (1979; 1991) four elemental dimensions (obligations) of CSR: economic, legal, ethical, and philanthropic. In doing so, the study proposes to add workplace climate perception as a corporate characteristic to the model presented by Marz et al. (2003) (albeit in a different industry and organizational layer).

The secondary focus, *CSRO and the Individual*, explores whether frontline education levels and age (or rather, generation) have an impact on the personal

8

connection to the same four CSR dimensions upon which this study is founded. By doing so, it examines whether these two specific demographic variables have an effect on the CSR orientations of these same frontline personnel. The objectives behind this second element of the study are to establish whether these individual-based variables can be added to the Marz et al. (2003) model (again, in a different industry and from a frontline perspective), and collaterally, to extend the findings of O'Neill et al. (1989) by examining whether these individual-based, background characteristics are as influential to CSR perspectives at the frontline level of a company as they were observed to be at the boardroom level.

Both of the noted research focus areas will be investigated amongst frontline personnel of a North American energy transportation company, each of whom are physically situated in an office or field setting in Canada or the USA. In addition to this, the primary focus area will also be differentially explored from a people-management responsibility perspective (i.e., between those individuals operationalized as frontline supervisors and frontline employees). The general approach taken in this study is to use an updated version of a survey tool developed and used by others for CSR attitude evaluations, with a clear description of the survey method, and statistical analyses to quantify the relationships amongst variables of individual and corporate characteristics in a verifiable way.

Chapter 2: Literature Review[†]

[†] Note: Some parts of this chapter were transcribed from the following journal article: Michailides, T.P., and Lipsett, M.G. (2012). Surveying Employee Attitudes on Corporate Social Responsibility at the Frontline Level of an Energy Transportation Company. *Corporate Social Responsibility and Environmental Management*.

Introduction

This chapter offers a detailed and pragmatic review of the fundamental academic concepts that were explored in the development of this research study, along with the most relevant reflections within each domain (state of the art) that shaped the direction it took.

Firstly, the interaction between business and society is explored through the prisms of corporate social responsibility (CSR) and the stakeholder model. The embracement of CSR within the corporation, as well as the motivators driving the interest in taking up the ideology, are elaborated upon. The stakeholder dialogue narrows in on the group of interest in this study: frontline employees. The notion of using CSR for strategic purposes is then presented, with an emphasis on its use in the attraction and retention of employees.

Later in the chapter, the evolutionary business concept of CSR is explored, beginning with a discussion of a recent meta-analysis that studied modern-era definitions of CSR. The key dimensions associated with the construct are then offered, followed by a detailed discussion and analysis of the foundational CSR definition used in the research study. Operationalizing the chosen definition to effectively capture one's social responsibility preference (attitude) is then reviewed in the section entitled "Corporate Social Responsibility Orientation (CSRO)." This part of the literature review not only goes over the development of

an instrument (questionnaire) to achieve quantification of the selected definition, but also discusses its use in other past and relevant CSRO studies.

The human motivation and personality model of Self-Determination Theory (SDT) is then explored, with an emphasis on one of the three basic, psychological needs it is founded upon: autonomy. The theoretical background is explained first, followed by a review of the five sub-concepts that are leveraged upon to rationalize motivations and behaviors via the SDT lens. From there, the basic psychological needs of the model are discussed, with autonomy as the primary focus. The positive benefits of experiencing a sense of autonomy, especially in the workplace, completes the SDT literature review and segues into the examination of whether a relationship exists between an autonomy-supportive context at work and an individual's orientation to the CSR construct.

Through this review process, the researcher was able to formulate hypotheses that not only linked these niche academic domains, but extended the current literature on CSRO and the circumstances that could impact attitudes toward the construct. The literature review also ensured that the proposed research was novel and unique in terms of make-up and direction taken.

Background

Companies are incorporating and attempting to mainstream the concept of corporate social responsibility (CSR) within their policies, strategies, and business practices. CSR's general premise that businesses voluntarily consider and address societal issues within their decision-making processes, while simultaneously

11

maximizing economic objectives in an ethical and transparent manner, continues to gain momentum and grow in importance for many firms. Over 80% of a random sampling of Fortune 500 companies addressed CSR on their corporate website (Esrock and Leichty, 1998), an indicator of the extensiveness of the subject and importance given to it by business leaders. Further, 70% of TSX-listed companies generate reports describing their CSR commitments and performance, a twofold increase from five years prior (Kielburger and Kielburger, 2008).

The business case for CSR leverages upon an assortment of arguments for its embracement and advancement. Some of these general pro-CSR stances, as offered by Carroll and Shabana (2010), include ensuring a healthy climate (i.e., stakeholder-wise) in which to function currently and in the future, forestalling future government intervention and responding proactively to the strong support of the concept amongst the public.

However, and more often than not, positive impacts to the bottom-line of the company still remain at the heart of most decision making associated with the CSR agenda and investments in its ideological premise. This emphasis on the effects CSR has on corporate financial performance reflects the new thinking of business. That is, doing well financially by doing good socially. Overall, the link between corporate social performance and corporate financial performance seems to exhibit a somewhat positive relationship (Griffin and Mahon, 1997; Margolis and Walsh, 2003; Waddock and Graves, 1997; Mahon and Griffin, 1999; Orlitzky et al., 2003; BusinessGreen, 2008). Yet, some doubts of this relationship persist,

which may be attributed to methodological differences within conducted studies and research, biases due to inconsistent interpretations, as well as the possible existence of mediating variables and situational contingencies (Carroll and Shabana, 2010). Carroll and Shabana (2010) go on to describe detailed cases which support the rationale and model of Kurucz et al. (2008), who state that the business-case for the practice of CSR can be organized into four distinct 'benefit' arguments: cost and risk reduction, competitive advantage, elevated legitimacy and reputation and the creation of win-win situations through synergistic value creation.

The initial development and subsequent growth of CSR portfolios over the past two decades has typically been driven by demands and circumstances outside of companies, although altruistic desires and proactive behaviors originating inside organizations cannot be completely disregarded (Kanungo and Conger, 1993; Veiga and Dechant, 1993). Recent corporate wrongdoings, irregularities, and performance shortcomings across a multitude of industry sectors (Patsuris, 2002; Tedesco, 2008; Keith, 2009), has eroded the traditionally high confidence and trust levels granted to business by society as it pertains to conducting their daily affairs. Subsequently, today's corporate citizenship efforts are increasingly being called upon to play a leading role in corporate reputation and risk management for firms (Brown and Dacin, 1997; Sen and Bhattacharya, 2001; Kytle and Ruggie, 2005; Brammer and Pavelin, 2006; Vanhamme and Grobben, 2009), although the skeptical light of stakeholders shines bright on many efforts. Other notable dynamics influencing the interest in (and uptake of) CSR in the

boardroom include the heightened and targeted interests of non-governmental organizations (Winston, 2002; Guay et al., 2004; Doh and Guay, 2006; Aguilera et al., 2007), ever-increasing regulatory requirements and legislations (Porter and Kramer, 2006), and the rise of a more engaged and conscientious populace who are equipped with the latest technologies, digital media, intelligence, and social networking capabilities (i.e., connectivity) offered by the internet.

Formal requests to disclose, discuss, and improve upon non-financial performance metrics (i.e., environmental, social, and governance) also continue to grow within the investment community (Guay et al., 2004; Sparkes and Cowton, 2004; Ioannou and Serafeim, 2010), further emphasizing the importance of corporate citizenship, ethics, and transparency platforms. Lastly, CSR portfolios of corporations are now also being scrutinized by the workforce (i.e., potential recruits and current staff members), as the desire to be associated with a virtuous firm seems to be on the rise in today's society (Aguilera et al., 2007; Bhattacharya et al., 2008; Coldwell et al., 2008). As companies aggressively compete to attract and retain employees, this specific realization is of prime importance to human resource departments from a sustained competitiveness point of view.

Figure 2 accurately represents today's business-society landscape by succinctly illustrating the previously-noted interactions between a corporation and some of its key stakeholders.

14
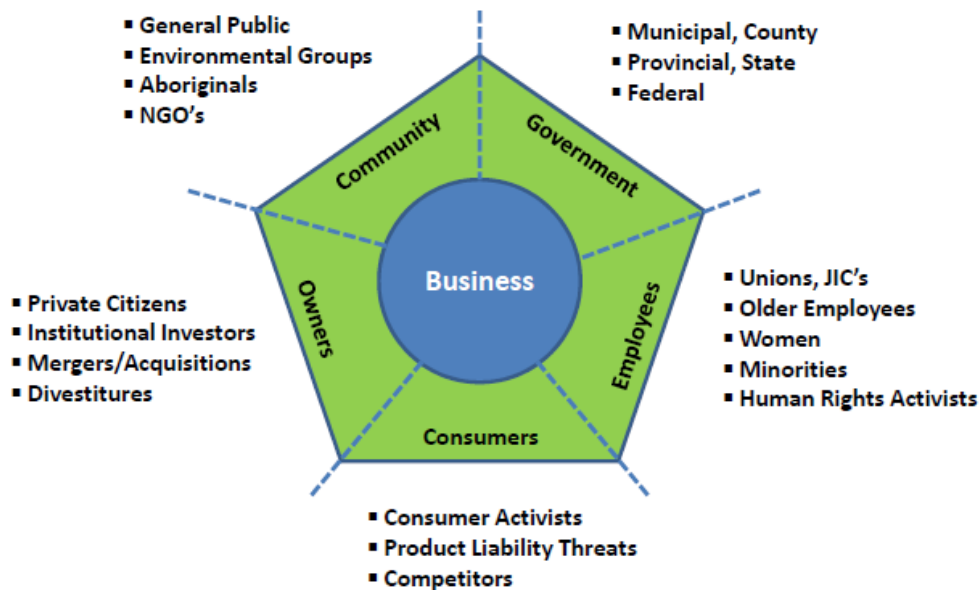
Figure 2. Business and Select Stakeholder Relationships

Adapted from Karakowsky L., Carroll, A. B., & Buchholtz, A. K. 2005. Business and Society: Ethics and Stakeholder Management. Scarborough, ON: Nelson Education.

Attending to societally-based concerns and interests, which can originate from a variety of relevant stakeholders, appears to now be comparable in importance as the traditional industry pursuits of short/long-term profit maximization, operational excellence, quality and safety management, product innovation, and market competitiveness (i.e., especially for larger, highly visible firms). If overlooked, consequences to the firm's effectiveness and bottom line can likely be anticipated. Furthermore, legal and social contracts (i.e., those agreements which are granted both formally and informally to businesses by stakeholders to conduct their operations) may become more onerous and costly to obtain and/or sustain if key matters are not tended to satisfactorily and in mutually-beneficial ways. As a result, both shareholders and stakeholders risk

being impacted (albeit differently) if management fails in its responsibility to equitably address their often-conflicting viewpoints. However, succeeding in locating the sweet spot between a business decision and a societally-based issue has the real potential for a corporation to realize gains (financial and non-financial) and bring credibility to its citizenship practices. CSR initiatives should strive to increase the probability of realizing this win-win outcome, even though precise impact measurements can still remain difficult to quantify. The focus clearly needs to be positioned at the intersection of conflicting interests.

As society's expectations of business change over time, corporations busily adjust their CSR mandates to ensure they can respond to the latest concerns. Despite the existence of this reactionary change management approach with risk mitigation at its core, there will likely be a point in time when boardroom-developed CSR policies and/or commitments will need to transform themselves into proactive, observable actions if CSR is to be mainstreamed within the fabric of a business. If a firm proclaims its CSR principles are inherent within its business model, decision-making processes, and culture (i.e., organizational values), this directly implies that those principles are embraced and enacted upon by its employees in day-to-day affairs in the workplace. Therefore, the need will arise to support proclaimed commitments with noticeable proof. The demands of affected stakeholders, along with their current skepticism, will necessitate this practice. 'Walking-the-talk' should be evident amongst all employees, and should be seen across all business functions and operating environments to truly claim CSR-embedment within the company. The legitimacy of any CSR platform, as it

progresses from compliance-based to fully-integrated, is otherwise at risk. As companies move towards the ambitious goal of top-to-bottom CSR mainstreaming (Carlisle and Faulkner, 2004)—an idea which is still very much in its infancy amongst larger, more established firms—the onus to connect to, embody, and enact upon core CSR principles will eventually land in the laps of frontline-level employees of the company.

The transformation of boardroom-developed CSR policies into actionable, quasi-measurable objectives at the coffee-room level will ultimately prompt a migration through each departmental layer of the organization. That being the case, individual roles and responsibilities within the organizational hierarchy may differ in relation to the CSR mandate and its execution. Expectations of personnel at the executive and senior management levels will likely include the creation of the fundamental vision and principles of CSR that the corporation will value, adhere to, and publicly proclaim. Connection to the established mandate should occur quite readily for individuals at this organizational level as a result of continued and increased exposure to macro industry-related issues, global CSR trends, company stakeholder expectations, business-impact discussions, and strategic policy development. As for middle management, a key function will include the responsibilities that come with being identified as the change management agent associated with such an initiative. Middle managers will be called upon to firstly comprehend and rationalize the all-encompassing CSR principles crafted by executive/senior management, and then, transform them into quantifiable, executable and (hopefully) measurable actions within their

17

respective business-units (i.e., as well as for each business-activity). These CSR-based actions can come in a variety of shapes, forms, sizes and amounts depending on the business unit, the activities undertaken within it and the types of professions of the individuals it employs. Adding the CSR mandate to the already-existing suite of middle-management responsibilities (i.e., budget management, legal and regulatory compliance, audits, human resource management, training, career development, etc.) highlights the potential prioritization and integration struggle the initiative may encounter. The realization and management of CSR-actions at the frontline of a company could very easily hinge upon the importance middle managers place on the initiative, positively or negatively. Further, CSR-embracement is also likely to be influenced by the weighting given to the program within an employee's annual performance plan which typically houses well-defined, actionable and measureable objectives for both managers and employees; a must-have consideration if CSR mainstreaming is to gain traction and acceptance within all departments of an organization. That being said, and in the context of this research, middle management's primary role is to act as the bridge between policy and action, ensuring the CSR mandate is understood and undertaken via specific actions which are seen to dovetail into the higher-order commitments/values crafted in the C-suite of the firm.

Observable 'in-motion' CSR will be most easily witnessed and sensed by affected stakeholders at the frontline levels of a corporation, even though the expectation will be placed across all layers of the organization. Such a scenario entails executing one's daily activities with the ideology of social responsibility

18

(both corporate and personal) naturally ingrained within the action itself. More illustrative and measurable than some of the corporate principles they sprang forth from, CSR at the frontline employee/supervisor level will carry with it more weight, impact and assessment-friendly end-results which are more immediately felt by impacted stakeholders (i.e., those external to the company as well as the employees undertaking the actions themselves).

The migration of CSR to the frontline will undoubtedly have more chance of success (i.e., embracement by the masses) if the undertaken actions are steadfastly endorsed, supported and recognized by executive, senior and middle management. Only then can sustainable benefits such as increased employee motivation and well-being, heightened engagement, elevated brand appeal and connection and lower staff turnover rates be potentially realized. Operational efficiencies and enhanced product innovation and development are also likely to follow suit via heightened organizational commitment and an elevated state of creativity driven by the positive frames-of-mind of employees. With this in mind, frontline staff occupying a multitude of roles in the office and field setting will be encouraged to perform their activities in a manner which is highly synchronized with the economic and social responsibilities the company has committed to within their CSR agenda. The potential net gains for employees, the corporation, and societal stakeholder's prompts this dissertation to further explore CSR at the frontline, departmental level of an organization, at a time when companies seek to evolve and transform their CSR portfolios from compliance-based to mainstream in CSR-leading organizations.

Endeavoring to achieve a degree of synchronization between an

individual's personal values and the firm's CSR values will ultimately require an

understanding of the personal preferences employees have towards the elements

comprising the CSR construct. It is in the best interest of the corporation to

recognize and quantify any substantial differences that may exist amongst

frontline employees in a variety of situations. These noted differences may be a

result of workplace-related factors and/or individually-based characteristics,

which merits a deeper understanding of both. This dissertation will investigate

this notion further and in a more explicit manner. In doing so, it will extend the

current literature on corporate social responsibility orientation and circumstances

that may impact attitudes toward CSR at the frontline level of an organization.

Business and Stakeholders

Large companies continue to embrace and incorporate the concept of

corporate social responsibility (CSR) within their communicated strategies,

policies, and practices. The general premise of CSR is that businesses voluntarily

consider societal and environmental issues within their operating frameworks and

decision making processes, while simultaneously maximizing shareholder

objectives. This notion has become more significant in business due to the

increasing influence and actions of relevant stakeholders (Frooman, 1999;

O'Rourke, 2003; Rowley and Moldoveanu, 2003; Doh and Guay, 2006; King,

2008).

Although it can be difficult to gauge the effectiveness, degree of commitment, and bottom-line impact of any CSR program, the increased presence of CSR-related commentaries on corporate websites provides some evidence of boardroom attention to the concept (Esrock and Leichty, 1998; Maignan and Ralston, 2002). Similar mounting trends are also observed within the domain of formalized, non-financial–based reporting related to CSR and/or sustainability (Hooghiemstra, 2000; Kolk, 2003; Lefebvre and Gans, 2005; Bebbington et al., 2008).

Ditlev-Simonsen and Midttun (2011) identified several motivators that influence managers to adopt corporate responsibility initiatives, such as branding, profit/value maximization, sustainable development, and advancing innovation. Additionally, the personal values, morals, and altruistic desires of decision-making personnel cannot be discounted as potential reasons for introducing CSR within an organization (Kanungo and Conger, 1993; Veiga and Dechant, 1993; Hemingway and Maclagan, 2004). However, the need to respond to pressures emanating from a wide assortment of societal actors reflects the more widespread justification behind embracing CSR principles within the firm (Wood, 1991; Clarkson, 1995; Aguilera et al., 2007).

A significant, underlying contributor to today's growing societal demands on corporations appears to be the increasing number of media reports related to corporate transgressions, financial irregularities, and ethical shortcomings (Patsuris, 2002; Taylor, 2003). These events have contributed to an erosion of the typically high levels of confidence and trust that society bestows upon industry to

conduct its affairs (Adler, 2002; Kochan, 2003; Taylor, 2003). Consequently, today's citizenship efforts (whether proactive, reactive, or defensive) regularly play a prominent role in corporate reputation and risk management efforts (Brown and Dacin, 1997; Sen and Bhattacharya, 2001; Kytle and Ruggie, 2005; Brammer and Pavelin, 2006; Bebbington et al., 2008; Vanhamme and Grobben, 2009). The findings of Melo and Garrido-Morgado (2012) illustrate this effect by showing how five distinct CSR dimensions— employee relations, diversity issues, product issues, community relations, and environmental issues—can impact corporate reputation across various industries.

The stakeholder model, rationale, and recommended practice is routinely called upon as a compass when CSR is introduced within an organization (Freeman, 1984; Waxenberger and Spence, 2003; Freeman, 2004; Garriga and Melé, 2004; Valor, 2005; Fassin, 2009). A stakeholder of an organization, as defined by Freeman (1984), is "any group or individual who can affect or is affected by the achievement of the organization's objectives." External stakeholder groups that influence corporations to act upon CSR principles include governments, non-governmental organizations, industry regulators, investors, capital markets, customers, and a highly-engaged and aware public (Winston, 2002; Guay et al., 2004; Sparkes and Cowton, 2004; Lefebvre and Gans, 2005; Doh and Guay, 2006; Porter and Kramer, 2006; Aguilera et al., 2007; Ioannou and Serafeim, 2010). Internal stakeholders—who are just as influential in their advocacy of CSR within the organization—include employees, managers, labor union representatives, and joint industrial committee members. An approach to

22

identify and prioritize a firm's stakeholders has been offered by Mitchell et al. (1997), and uses the variables of power, legitimacy, and urgency as factors for managerial attention. The findings of Agle et al. (1999) support the concept that stakeholders in positions of strength in each of the three factors will matter more to management, and will be given higher priority in the landscape of competing stakeholder interests. Banerjee and Bonnefous (2011) take this thinking further as they discuss an assortment of stakeholder strategies that a corporation can call upon as it engages (or manages) particular stakeholder groups.

Corporate social responsibility (CSR)—and more specifically, a firm's performance on its noted CSR commitments—can be leveraged for strategic/competitive purposes (McWilliams et al., 2006; Porter and Kramer, 2006; Smith, 2007). Guadamillas-Gómez and Donate-Manzanares (2011) use a case study to describe how the integration of ethical values and CSR principles within corporate strategies can positively impact the reputation of a firm, knowledge management efforts, technological innovation, and human development (i.e., employee motivation and behavior). As tactics for competitive advantage continue to become homogenized in today's business landscape, corporations are turning to non-traditional platforms and metrics—such as corporate social performance—to stoke differentiation, and ultimately, organizational success.

In today's knowledge-based economy, organizational success is directly influenced by the attraction and retention of a quality workforce (Turban and Greening, 1996; Greening and Turban, 2000). As such, effective and progressive

human resource (HR) management practices are critical if organizations are to meet their operational objectives, growth strategies, and sustainability goals. A particular theme of importance for today's HR departments is age-related attrition and the predicted increase in industry activity, particularly within the Canadian petroleum industry (PHRCC, 2011). This retire-and-hire setting, together with the ever-changing socio-demographic profile of the modern worker (Ciocirlan and Pettersson, 2012), will not only increase the competition for human capital (Chambers et al., 1998; Bartlett and Ghoshal, 2002), but it will also make the management and engagement of employees an even more complex task, due to heightened workplace diversity issues.

Given this context in which human capital will become increasingly valued for strategic and sustainability reasons, management attention needs to be cast towards further understanding the expectations, desires, and motivations of its diverse employee domain. Frontline employees, a unique subgroup that directly influences the long-term prosperity of the firm, are of particular interest and importance.

A frontline employee, in the context of this study, is an individual who has direct or indirect interactions with a company stakeholder as he/she performs his/her respective business-related tasks to generate revenues for the organization. As HR departments develop, implement, and adjust a wide array of strategies related to the attraction and retention of employees to meet changing business needs, it is important to recognize that a firm's portfolio of CSR commitments and initiatives are now being closely scrutinized by the workforce, that is, by

potential recruits as well as current staff (Turban and Greening, 1996;

Bhattacharya et al., 2008). The findings of Greening and Turban (2000) suggest

that job applicants are attracted to organizations with solid corporate social

performance reputations, and will pursue employment with these firms. The basis

of this comes from the belief that these organizations have values and norms of

importance to the individual, and in turn, positively influence one's concept of

self. The same idea can be extended to recently-hired personnel. Consequently,

CSR has become an important instrument in the competition for, and the

management of, human capital.

The desire to be associated with a virtuous firm seems to be on the rise in

today's society (Aguilera et al., 2007; Bhattacharya et al., 2008; Coldwell et al.,

2008). An individual's desire to be connected to something 'larger' than just a

job/career has become increasingly appealing in today's work landscape

(Bhattacharya et al., 2008). Individuals want to identify with—and align

themselves to—the firm's social values and commitments. As such, it is in the

best interest of management to assess and 'tap into' these yearnings, to foster

company competitiveness (and sustainability) going forward. Doing so will

positively impact an employee's organizational commitment, motivation, job

satisfaction, citizenship behaviors, and productivity (Bhattacharya et al., 2008;

Chong, 2009).

Along with these insights, and to ensure publicly-communicated CSR

mission statements/initiatives are not viewed as public relations rhetoric, evidence

of 'walking-the-CSR-talk' will be insisted upon by relevant stakeholders—

including employees—as they seek the opportunity to 'experience the walk' (Collier and Esteban, 2007; Bartkus and Glassman, 2008; Bhattacharya et al., 2008; Chong, 2009). The integration of these considerations presents the firm with a potential win-win scenario: the display of observable, in-motion CSR (for external stakeholders to experience, gauge, and ultimately benefit from) by tapping into the expressed higher-order psycho-social desires of frontline employees who want to experience a purpose-driven workday.

Achievement of this goal rests upon the degree of alignment between an individual's personal values and the firm's communicated CSR values, which in turn impacts employees' commitment to the cause (Collier and Esteban, 2007; Bhattacharya et al., 2008). Therefore, it is worthwhile to have an understanding of the personal attitudes that frontline employees have towards the CSR concept. In this study, the quantified values of these attitudes are labeled as one's CSR orientation (CSRO) (Aupperle, 1982; Aupperle et al., 1983), and that quantification is founded upon a highly-cited representation of the CSR construct (Carroll, 1979; Carroll, 1991). Once an individual's CSRO is established, differences between clusters of frontline employees can be assessed with respect to corporate and/or individual-based variables that potentially affect variability in CSR orientation amongst employees.

Corporate Social Responsibility (CSR)

Corporate social responsibility (CSR) can be viewed as an evolutionary business concept (Carroll, 1999; Moir, 2001; Dahlsrud, 2008). Despite the

26

attention that has been directed towards the development of an all-encompassing and unbiased definition, general agreement on a definition remains elusive.

Nonetheless, Dahlsrud (2008) showed that, for the most part, modern-era definitions of CSR (1980–2003) are congruent and tend to describe a 'phenomenon' more than an explicit definition of what the social responsibility of business should be.

The definitions studied by Dahlsrud (2008) consistently identified five important dimensions that are often associated with the CSR construct: stakeholder, social, economic, voluntariness, and environmental. Of particular interest is the observation that the examined definitions overwhelmingly referred to the stakeholder, social, economic, and voluntariness dimensions within their characterizations. This apparent connection supports the idea that any CSR undertaking must address the economic and social concerns of relevant stakeholders in a voluntary way; that is, engaging in CSR must be done in a way that can be construed as going above merely meeting regulatory requirements (Dahlsrud, 2008).

This proposed connection can be investigated using Carroll's four-dimensional construct (Carroll, 1979; Carroll, 1991) to form the foundational definition of CSR for the purpose of quantitative surveying. Carroll (1979; 1991) integrates several perspectives into a single, all-inclusive, easily-understood framework. He considers CSR to be comprised of four distinct accountabilities that the firm owes to society: economic, legal, ethical, and discretionary (also labeled as philanthropic). This interpretation goes on to state that each of these

27

responsibilities is not mutually exclusive, cumulative, or additive, and that they are not part of a continuum (Carroll, 1979). Figure 3 illustrates how Carroll conceptualized the categorization of business' social responsibilities, with the proportions in the diagram reflecting the envisioned, relative magnitude of each responsibility at that time.
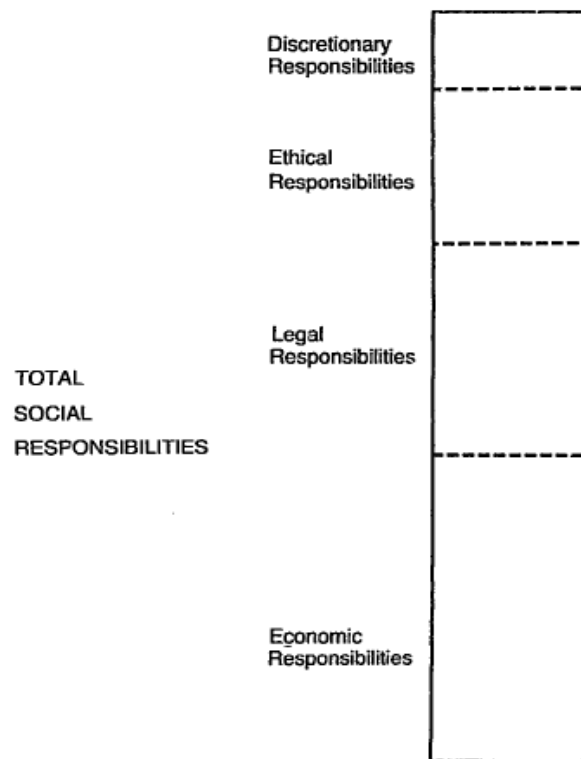
Figure 3. Carroll's Social Responsibility Categories

Source: Carroll, A. B. 1979. A Three-Dimensional Conceptual Model of Corporate Performance. *Academy of Management Review* 4 (4): 497–505.

Carroll ordered the dimensions hierarchically, with economic concerns at the base, followed by legal, ethical, and philanthropic concerns, respectively. This ordering merely reflects the evolution of business and its priorities, with emphasis and attention being placed on economic matters above all else, followed by legal compliance, and then by concerns related to ethical and discretionary

28

(philanthropic) affairs (Carroll, 1979). Economic responsibilities (i.e., being profitable) are the foundation upon which all other responsibilities rest, followed by obeying the law (i.e., legal responsibilities); doing what is right, just, and fair (i.e., ethical responsibilities); and being a good corporate citizen (i.e., philanthropic responsibilities) (Carroll, 1991).

Attention to all dimensions is necessary, but likely in different amounts at different times, because a firm may have changing (and potentially conflicting) stakeholder issues to address and deal with at any one time.

In the end, the working definition of CSR that the present work uses as a framework for analysis is as follows: "The social responsibility of business encompasses the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time." (Carroll, 1979)

Corporate Social Responsibility Orientation (CSRO)

The relative importance that one assigns to each of the four CSR dimensions proposed by Carroll is not fixed: the importance ranking is dynamic in nature and can vary based on whose perspective is depicted, in what setting, and when the opinion was polled. This, in effect, is a reflection of one's social responsibility preference (attitude), which is labeled as corporate social responsibility orientation (CSRO) in the study.

Quantifying an individual's expressed preference towards each of the four dimensions (i.e., economic, legal, ethical, and discretionary) is required for proper comparative analyses amongst groups. This means that some operationalization of

Carroll's CSR model is necessary. This was undertaken as a research effort that culminated in the development of a formal instrument (Aupperle, 1982; Aupperle et al., 1983): an empirically-tested and statistically-validated questionnaire that quantifies an individual's corporate social responsibility orientation (CSRO).

The tool that was developed was a 15-item, 60-statement, forced-choice questionnaire, which verified the existence of the four components and the hypothesized differences in assigned weightings proposed by Carroll at the executive level of a company, that is, as tested amongst active CEOs in the survey. The instrument has been used by other researchers and subsequently re-validated (Aupperle et al., 1985; O'Neill et al., 1989; Burton et al., 2000; Acar et al., 2001) through the exploration of CSROs in different settings and amongst different groups. It has proven to be a reliable tool in CSRO investigations, and has been called upon in this study to capture respondents' attitudes toward the CSR concept.

Research within the CSRO landscape has focused on assessing and comparing, through this questionnaire, the impact that specific variables may have towards one's perceived social orientation. Variables such as nationality, religion, career background, organizational hierarchy, gender, political system origin, and socio-economic background have previously been explored as potential determinants of CSRO (O'Neill et al., 1989; Ibrahim and Angelidis, 1994; Ibrahim et al., 2000; Marz et al., 2003; Angelidis and Ibrahim, 2004; Ibrahim and Parsa, 2005; Angelidis et al., 2008; Smith et al., 2008).

Several of the influencing variables appear to be separable into two distinct clusters when looking at CSRO in the work setting: corporate variables and individual variables. The conceptual framework that both corporate and individual characteristics can influence one's social orientation was proposed, tested, and empirically verified (Marz, 2000; Marz et al., 2003), and so both variable types should be part of any survey tool.

Self-Determination Theory (SDT) and Autonomy

Individual variables related to CSRO can be put in the context of Self-Determination Theory (SDT), which is a model of human motivation and personality. SDT considers the external and internal forces acting on an individual and how they impact motivation, functioning, and well-being. Optimality from a SDT perspective is succinctly depicted by the founders of the theory (E.L. Deci and R.M. Ryan), as follows: "To be self-determined is to endorse one's actions at the highest level of reflection. When self-determined, people experience a sense of freedom to do what is interesting, personally important, and vitalizing" (Deci and Ryan, 2011).

SDT has been researched across many settings, where externally-based influences (including rewards and penalties) continue to compete directly with intrinsic desires to impact motivation, and consequently-observed behaviors (Ryan and Deci, 2000; Deci et al., 2001a; Gagné et al., 2003; Vansteenkiste et al., 2004; Ryan et al., 2006; Ryan et al., 2008; Ryan et al., 2009; Ryan et al., 2011). For an employee, external influences include the workplace (Deci et al., 1989;

31

Ilardi et al., 1993; Deci et al., 2001b; Baard et al., 2004; Meyer and Gagné, 2008; Stone et al., 2009).

Five foundational sub-theories are used to rationalize motivation and personality through SDT: Cognitive Evaluation Theory, Organismic Integration Theory, Causality Orientations Theory, Basic Psychological Needs Theory, and Goal Contents Theory (Vansteenkiste et al., 2010). The Basic Psychological Needs Theory was explored in the present work, based on the recognition that ethical and privacy constraints would be placed on the study when it was time to poll participants in an organizational setting. As such, the focus was directed towards a sub-theory of SDT that was deemed to have a higher probability of acceptance in the workplace.

Competence, relatedness, and autonomy are the three basic psychological needs upon which Self-Determination Theory is founded. Stone et al. (2009) define competence as believing that you have the ability to influence important outcomes. They define relatedness as the experience of having satisfying and supportive social relationships. In a work context, mastery of an activity is competence; and feeling connected to and supported by people perceived to be important (such as a manager) is relatedness (Gagné, 2003). Autonomy is defined as the experience of acting with a sense of choice, volition, and self-determination (Stone et al., 2009), or freely choosing to pursue an activity (Gagné, 2003). deCharms (1968) and Deci (1975) define the need for autonomy as experiencing choice and feeling like the initiator of one's own actions.

Basic needs, as depicted in SDT, are viewed as innate for all people and are evident across all cultural settings (Chirkov et al., 2003). They are deemed a 'must-have' if one is to experience a state of well-being and peak effectiveness. As stated by Deci and Vansteenkiste (2004), basic psychological needs satisfaction is considered the means through which optimal development and authentic functioning can be understood, as people interact with their social environments. This in turn creates sustainable, enduring motivation within the individual, leading to a range of positive outcomes (Stone et al., 2009).

Anticipated behavioral outcomes, when these basic needs have been realized within the work setting, include effective performance, job satisfaction, positive work-related attitudes, organizational citizenship (pro-social) behaviors, and psychological well-being (Gagné and Deci, 2005). Although competence and relatedness are essential components for inciting the highest levels of functioning and motivation in an individual, only the concept of autonomy is explored further in this study.

Experiencing a sense of autonomy, and a feeling of ability to choose one's actions, is critical for a person's optimal functioning (Soenens et al., 2007). SDT further suggests that both individual differences (autonomy orientation) and contextual factors (autonomy support) can influence intrinsic-need satisfaction (Gagné, 2003). An individual may exhibit a controlled orientation at the personal level, with a preference for structure, process, definition, and direction, but such an individual can also realize positive benefits when their elemental need for

autonomy is respected and fulfilled (Deci and Ryan, 2000; Sheldon et al., 2003a; Sheldon et al., 2003b).

The autonomy-support construct, exclusively, provides an intuitive appreciation for how a work setting can influence whether or not a sense of autonomy is perceived and felt by the individual. Studies have shown that the general ambience of a situation such as a workgroup does indeed affect one's intrinsic motivation (Deci and Ryan, 2008). Baard et al. (2004) define and expand upon the concept of autonomy support at work in the following way:

"Autonomy support involves the supervisor understanding and acknowledging the subordinate's perspective, providing meaningful information in a non-manipulative manner, offering opportunities for choice, and encouraging self-initiation (Deci et al., 1994)…. [It] refers not so much to a characteristic of the job itself as to an interpersonal climate created by the manager in relating to subordinates and carrying out managerial functions, such as goal setting, decision making, and work planning."

SDT further claims that, because autonomy support is initiated by the managerial embrace of employee perspectives, one can expect autonomy-supportive managers to facilitate the satisfaction of all three intrinsic needs: competence, relatedness, and autonomy (Deci et al., 2001b; Baard et al., 2004).

An autonomy-supportive context can have positive impacts on psychological well-being and functioning, and this working atmosphere brings accompanying benefits to corporations from a workforce engagement perspective.

34

These relationships lead to the question of whether a connection exists between these noted outcomes in the context of CSR, and specifically, whether employee workplace climate perception (autonomy-supportive or controlling), on its own, directly impacts orientation to the CSR construct, as it is quantified by the operationalized model put forth by Aupperle (1982) and Aupperle et al. (1983). In exploring this possibility, this study seeks to add workplace climate perception as a corporate variable of interest in the conceptual framework of Marz (2000) and Marz et al. (2003).

Chapter 3: Methodology

Introduction

The following chapter outlines and describes the methodology employed to gather and evaluate a relevant data set to statistically validate or refute the research hypotheses. A discussion concerning the selected research approach is presented first, followed by an overview of the test population of the study. The focus then shifts to the survey instrument itself, as design and development considerations are discussed and elaborated upon. From there, academic and corporate approvals that were secured prior to survey launch are presented. The chapter concludes with an overview of survey administration, data collection, data reduction, and analysis techniques performed in preparation for hypotheses testing.

To ensure the study was performed in a valid and appropriate manner, elements of the research survey process were taken into consideration. As per Schonlau et al. (2006), a formal survey process should address all of the following tasks, each of which is touched upon in this chapter:

- defining the survey objectives;

- determining who will be sampled;

- creating and testing the instrument;

- contacting respondents; and

- collecting, reducing, and analyzing data.

A re-examination of the theme of the research reveals two prominent focus areas for assessment at the frontline level of a sample organization which is based on the following premise: the attitude of an individual towards corporate social responsibility can be influenced by both workplace-related factors and individually-based characteristics (O'Neill et al., 1989; Marz et al., 2003).

The first focus area ("CSRO and the Workplace") investigates whether a relationship exists between an individual's perceived level of autonomy support at work (as per SDT) and his/her expressed preference towards each of Carroll's four dimensions of CSR: economic, legal, ethical, and philanthropic. The second focus area ("CSRO and the Individual") explores whether the education levels and age (or rather, generation) of frontline employees have an impact on the connection to each of the same four CSR dimensions upon which the study is built. From this, a set of five hypotheses were established to evaluate whether an individual's attitude towards CSR can be influenced by these noted corporate and individually-based characteristics, as similarly conceptualized and explored within the research of Marz. However, the following dissertation seeks to add to the Marz model the variable of workplace climate perception (controlling versus autonomy-supporting) as a corporate characteristic, and education level and age variables as individual-based characteristics, to further understand what may influence CSR attitudes. The noted positive impacts on well-being and functioning for individuals, as well as the accompanying benefits a corporation realizes from an autonomy-supportive working environment (as per SDT), justifies the examination of whether this relationship is somehow connected

37

and/or extendable to the CSR construct and an employee's connection to it. The justification behind the examination of possible linkages between education level and age (generation) to the CSR construct goes beyond simply determining whether these specific individual-based variables can be added to the Marz et al. (2003) model. It also seeks to extend the findings of O'Neill et al. (1989) by examining whether these individual-based background characteristics are as influential to CSR perspectives at the frontline level of a company as they were observed to be at the boardroom level. O'Neill et al. (1989) clearly showed that there was a positive correlation between one's age and their respective CSR orientation at that position of the organization. The same result was noted when education level was assessed. Examining the possible intactness of these relationships at the frontline level of a company affords one the possibility of partially explaining the connection to the CSR construct based on these individual traits, which in turn helps rationalize motivations, expectations and behaviors with respect to the CSR ideology.

The research is conducted in a different industry setting, which employs distinct skill sets and professions across an alternative layer in the organizational hierarchy when compared to the research of Marz (i.e., energy transportation and frontline-level employees in Canada and the USA, as compared to a German-based international accounting/consulting firm and its junior and senior management staff of auditors and tax and management consultants). As such, the exploration of new variables clearly extends and adds to the Marz model. At the same time, this research also lays the groundwork for the development of a

38

similar framework in a different industry, at a different level in the organization, and across two different countries.

To assess the propositions put forth, they had to be restated as one or more falsifiable statements that could be tested empirically. As such, the following five hypotheses, which evolved out of two focus areas—"CSROs and the Workplace" and "CSROs and the Individual"—were developed for statistical evaluation and analysis within the research study:

CSRO and the Workplace

Hypothesis P1: The attitude of frontline personnel towards CSR is related to their perception of the workplace climate.

Hypothesis P2: A difference exists in the CSR attitude of frontline supervisors as compared to frontline employees, which is driven by their respective workplace climate perception.

Hypothesis P3: A difference exists in the CSR attitude of office-based personnel as compared to field-based personnel, which is driven by their respective work climate perception.

CSRO and the Individual

Hypothesis P4: The CSR attitude of frontline personnel is related to one's respective level of education.

Hypothesis P5: The CSR attitude of frontline personnel is related to one's respective age (i.e., generational demographic).

Research Approach

Research can follow one of two paths based on the reasoning approach taken: deductive or inductive. The deductive research approach calls upon proven principles or theories to develop a hypothesis, which is a speculative statement outlining a proposed relationship between two or more variables. A relevant data set, which is acquired to test the hypothesis put forth, can either support or reject the particular relationship being examined, and can lead to the formulation of generalized conclusions. Conversely, the inductive research approach starts off with the data already residing in a particular sphere of interest, and aspires to develop a theory via its analysis. The research approach followed in this dissertation was deductive in nature, and the following established representations helped formulate the hypotheses being examined: corporate social responsibility (CSR), as theorized by Carroll and operationalized by Aupperle; workplace climate characterization and autonomy, as depicted by Self-Determination Theory (SDT); and the corporate-individual CSR orientation framework of Marz.

Irrespective of the research approach taken, a data set is required to help validate or refute proposed hypotheses. Data sets can be captured in a qualitative or quantitative manner, or a hybrid of both. Qualitative data sets are mostly non-numeric in nature. Utilizing such techniques as observation, interviews, discussions, role-playing, and focus groups, the goal is to rationalize opinions, behaviors, observed actions, and their drivers by analyzing themes and patterns

40

within the collected data set, which primarily consists of words. This then leads to the development of broader generalizations and theories.

Quantitative data, on the other hand, are numerical in nature. Often associated with deductive-based research, quantitative data can rely upon the use of specific, unbiased questions administered to a test population of interest as a means of collecting a data set. Although not done in this research study, quantitative data can also be gathered from carefully-developed lab and/or field experiments. The collected numerical results are statistically analyzed to establish whether the hypotheses of note are valid or not across the test population of interest. Generalizations from the results can then be applied (or not) to a larger population when using this approach. This dissertation's five hypotheses were statistically confirmed and/or refuted via the analysis of a quantitative data set collected from a niche, test population of interest within the North American energy industry.

The research technique and accompanying instrument chosen to gather a relevant, quantitative data set for this research was the survey approach using a structured questionnaire. This approach was chosen over alternative, qualitative methods for data collection (e.g., interviews, observations, and discussions) because a survey was considered to be more administratively practical, effective, and efficient for gathering the requisite data, given the geographic dispersion and size of the test population of interest. Structured survey replies, especially those collected electronically and on-line, are also simpler to store, codify, and analyze compared to commentaries and observations from qualitative data-gathering

techniques. Further, the potential to introduce the biases of the researcher into the study, whether in a conscious or unconscious manner, are lessened using the structured survey approach (i.e., where all of the variables of interest are identified for the respondent to answer in a pre-defined and closed-ended manner). Care still needs to be taken to properly articulate the question set to ensure the appropriate information for hypothesis-testing is collected, while minimizing the possibility of leading and/or prompting the test participants. However, those subtle cues that may emerge during face-to-face interactions between the researcher and the test subject are eliminated by the use of a structured survey delivered electronically, as was the case with this research study.

In the end, the questionnaire developed for this research study endeavored to meet the following goals to enhance its chances of capturing a sizeable and suitable data set, which could, in turn, be analyzed statistically:

- Efficiently obtain a collection of pertinent data from a test population, at a specific moment in time, that could be considered representative of the domains and relationships being explored in the hypotheses;
- Ensure the created survey effectively captures opinions, perceptions, and facts related to the theoretical and demographical elements of the hypotheses, so as to allow for proper statistical testing to occur;
- Ensure the concepts of individual and group privacy, confidentiality, and ethicality have been adhered to and embedded in the make-up of the developed survey;

- Develop, launch, and administer an online, easy-to-use, and clearly-articulated survey instrument to bolster response rates from the test population of interest.

Test Population

The research hypotheses were statistically tested against a data set acquired from a niche test population within the North American energy industry. The pipeline sector, which is currently contending with intense public scrutiny and age-related employee attrition challenges (PHRCC, 2011), represents the domain of interest within this study.

The energy company affiliated with the research is Enbridge Inc. (Enbridge), a large North American-based corporation that transports, generates, and distributes energy across the continent. Enbridge's suite of investments includes crude oil and liquids transportation systems, natural gas transmission and distribution, midstream businesses, power transmission, renewable and green energy technologies including wind and solar energy, geothermal investments, and hybrid fuel cells. Headquartered in Calgary, Alberta, Canada, Enbridge currently employs approximately 7,000 people across Canada and the United States, and has received numerous awards and recognitions related to its human resource (HR) practices and CSR commitments, such as:

- Canada's Greenest Employers (2010, 2011)

- Canada's Top 100 Employers (2010, 2011)

- Canada's Top Employers for Young People (2011)

- Corporate Knights Best 50 Corporate Citizens in Canada (2010, 2011)

- Corporate Knights Global 100 List of the Most Sustainable Large Corporations in the World (2010, 2011)

- Dow Jones Sustainability Index (North America) (2010).

Further, detailed information with respect to Enbridge Inc. and its suite of companies, corporate vision, value propositions, and CSR positioning and accolades can be found on the Enbridge Inc. corporate website, www.enbridge.com (Enbridge Inc., 2012).

Strictly from a liquids movement perspective, Enbridge is Canada's largest transporter of crude oil, and currently delivers (on average) more than 2.2 million barrels of liquid hydrocarbons on a daily basis (Enbridge Inc., 2011a). A complex and vast pipeline network of roughly 25,000 kilometers (Enbridge Inc., 2011a), strategically located across North America, is called upon to deliver these volumes (Enbridge Inc., 2011b) (see Figure 4). The test population associated with this research resides exclusively within Enbridge's Liquids Pipelines (LP) business unit. LP employees are responsible for the daily management, operation, and maintenance of the pipeline network shown in Figure 4, and are dispersed across field and office settings in Canada and the U.S.A.
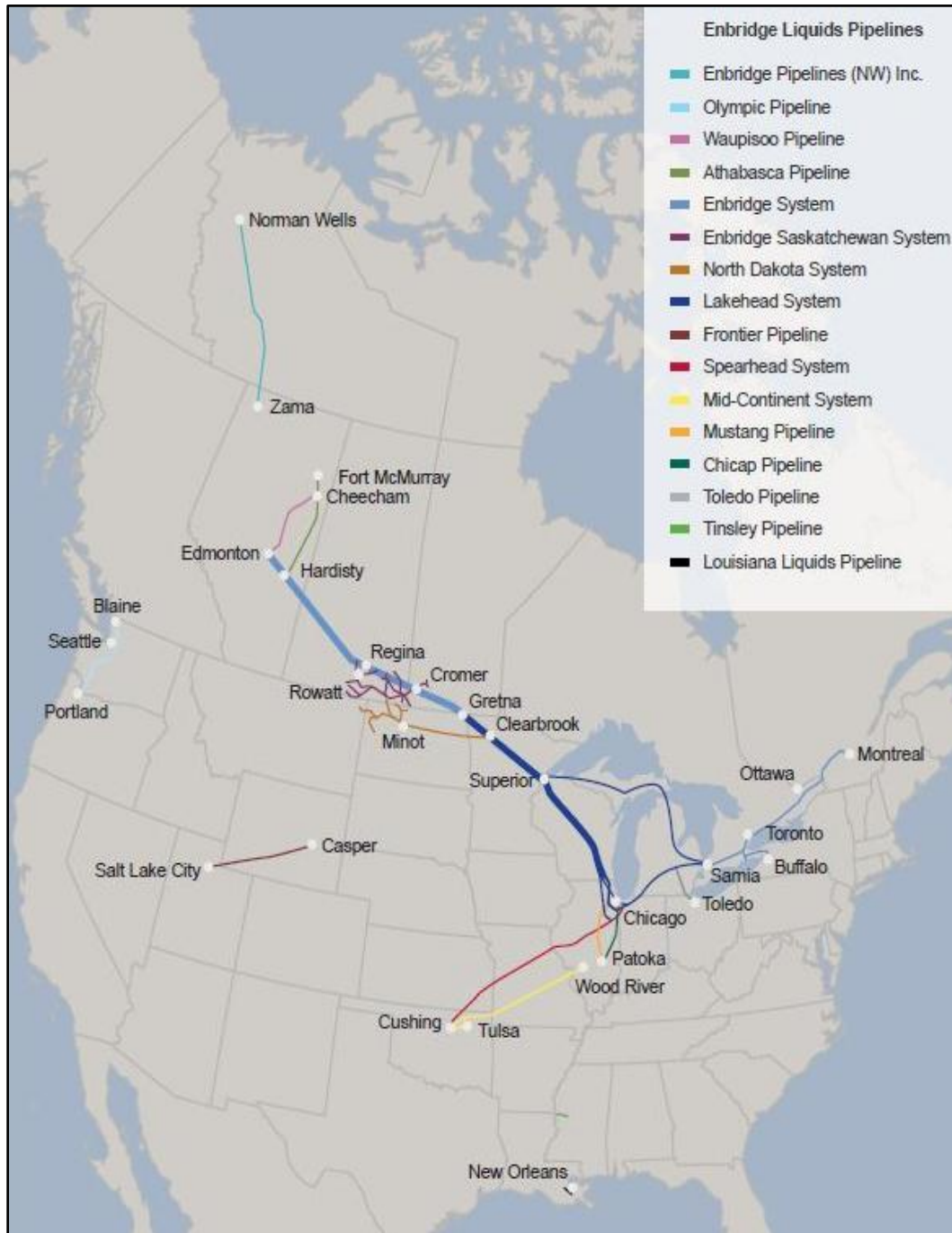
Figure 4. Enbridge Liquids Pipelines Network

Source: Enbridge Inc. Website. *Liquids pipeline network*. Retrieved online at
http://www.enbridge.com/AboutEnbridge/InteractiveMap.aspx

The LP business unit was selected as the test population from within

Enbridge Inc. for a few reasons. Firstly, it is the largest of all Enbridge business

units in terms of number of employees thus enhancing the opportunity to gather

more, as well as more diverse, CSR perspectives. It also has the largest

geographic footprint than any of the other business units, which fosters the receipt

of more varied, regionally-based perspectives than any other group could have

provided. The LP business unit is also the most mature, non-acquired, business

unit within Enbridge Inc. and thus is very well established with respect to its core

corporate values, culture and social responsibilities and expectations. Lastly, close

proximity to LP executive management made it convenient for the study when it

came time to seek corporate support around the collection of a data set linked to

the research.

Only full-time, frontline Enbridge LP personnel aged 18 years of age or

older, located in the field and/or office setting across North America, were invited

to participate. Executive, senior, and middle management of the parent company

(Enbridge Inc.) and the LP business unit were excluded from the study, along

with part-time staff, temporary employees, summer students, and contractors.

Additionally, all other Enbridge business units and their respective employees

were excluded from participation. This approach ensured that the gathered

perspectives were exclusively from full-time employees at the frontline level of

the LP business unit, which the study was exclusively centered upon.

All participants resided and worked in one of the following nine functional

departments within the LP business unit:

- Business Development,
- Customer Service,
- Engineering and System Integrity,
- Finance,
- Human Resources,
- Information Technology,
- Law and Regulatory Affairs,
- Operations, or
- Public and Governmental Affairs.

LP, field-based perspectives were those offered by personnel working in the Operations department, exclusively. The summation of perspectives put forth by the other eight functional departments reflected the LP office-based opinions of this study. Opinions of LP supervisors and LP employees at the frontline level are also differentiated and reflected upon within this research, as the daily and organizational responsibilities of each of these cohorts still vary. Once again, a frontline employee, in the context of this study, is an individual who has direct or indirect interactions with a company stakeholder as he/she performs his/her respective business-related tasks to generate revenues for the organization.

Table 1 summarizes the test population landscape of the study and highlights those employees included—and excluded—from the research effort undertaken here.

Table 1. Test Population Landscape

GENERAL SETTING	
INDUSTRY	Energy
SECTOR	Energy Transportation (Pipelines)
COMPANY	Enbridge Inc.
BUSINESS UNIT (BU)	Liquids Pipelines (LP)
COUNTRIES	Canada, U.S.A.

SPECIFIC SETTING & FUNCTIONAL DEPARTMENTS	
LP FIELD PERSONNEL =	LP Operations
LP OFFICE PERSONNEL =	LP Business Development + LP Customer Service + LP Engineering & System Integrity + LP Finance + LP Human Resources +

	LP Information Technology +
	LP Law & Regulatory Affairs +
	LP Public and Governmental Affairs

INCLUSIONS & EXCLUSIONS	
INCLUDED IN TEST POPULATION	- Full-time, LP, Frontline Employees (Field) - Full-time, LP, Frontline Supervisors (Field) - Full-time, LP, Frontline Employees (Office) - Full-time, LP, Frontline Supervisors (Office)
EXCLUDED FROM TEST POPULATION	- Enbridge Inc. Executive Leadership Team - Enbridge Inc. Corporate Leadership Team - Enbridge LP Senior Leadership Team - Enbridge LP Senior Management Team - Corporate Finance (BU) - Corporate Development (BU) - Gas Transportation & International (BU) - Major Projects (BU) - Corporate, Public, & Governmental Affairs (BU) - Corporate Information Technology (BU) - Corporate Law (BU) - Corporate Human Resources & Administration (BU) - LP Part-time Personnel - LP Temporary Personnel - LP Summer Students - LP Consultants

Study Design

A conscious decision was made when this research study was being designed to call upon existing, often-utilized survey instruments and their respective data capture and manipulation approaches. Adopting such an approach would not only enhance the credibility of the research study through association with these proven instruments, but it would further ensure that the developed questionnaire accurately portrayed and captured individual perspectives linked to the variables of interest within the hypotheses. In the end, one type of survey was used for workplace climate perception evaluations, and a second for assessing individual CSR orientations (CSROs). Both rely upon existing, statistically-valid and reliable instruments within their respective academic domains. The collection

of pertinent demographic information was also required to complete the design of the questionnaire.

To capitalize on the forthcoming data collection opportunity, a third survey was factored into the design of the study (i.e., from a research contingency perspective). Employee engagement, a comprehensively-studied human resource concept with potential connectivity to workplace climate perceptions and/or CSRO, was also deemed worthy of measurement in the event that these anecdotal linkages were to be explored further. As such, a statistically-valid and reliable instrument that measures one's current engagement level at work was also included within the framework of the developed questionnaire.

A background discussion of the three domain-specific instruments (focusing on workplace climate perceptions, CSRO, and engagement) that were selected for use in the research study is presented in the section entitled "Study Instrument" further on within this chapter. The set of demographic questions created and asked to the test population is also discussed in the same section of this dissertation.

Another design consideration was deciding how the test population in question would be contacted in order to inform them of the research project and the desire to have them participate in a voluntary manner. From a simplicity, cost, time management, and effectiveness perspective, mass email notifications were used as the primary communication tool for the research project. This approach was especially useful considering the breadth of contact required, as test participants within the functional departments of interest were located across

49

several provinces and states in Canada and the U.S.A. A set of four emails was developed and used for communication purposes at different stages of the survey process, and these are elaborated upon further in the section entitled "Data Collection" further on within this chapter. The developed email set includes the Survey Introduction (Appendix D), Survey Invitation (Appendix E), Survey Reminder (Appendix F), and Survey Closure (Appendix G).

To ensure the correct test population was contacted in the study (i.e., frontline personnel of the LP business unit dispersed across nine functional departments), a mass email distribution list connected to the entire Enbridge LP business unit was firstly called upon. This email list of all full-time LP personnel was manually modified by removing known executive, as well as senior and middle managers, from its make-up. An organizational chart of the LP business unit at that moment in time was also referenced as part of this exercise to ensure thoroughness. Although the scrubbed distribution list varied daily due to new hires and departures from the business unit (as tested and monitored several times prior to survey launch), the compilation of email addresses that was developed on the day the first email notification was sent represented the same list that was carried forth for the duration of the study. This ensured that the same group of individuals was contacted during the data collection phase of the project, and that the test population size remained static throughout the survey process. Access to and awareness of this study-specific email distribution list was strictly limited to the researcher of this dissertation.

The next consideration involved determining the most optimal way to administer the developed questionnaire and the results received from it. From a cost, time management, breadth of contact, and ease-of-use perspective, it was decided that the questionnaire would be administered online via a third party survey software provider. Specifically, SurveyMonkey™ was used to house and launch the questionnaire, as well as to collect the data submitted by respondents. Very basic, demographic-based analyses of the data were also performed using the functionalities offered by SurveyMonkey™ at the completion of the data gathering phase, mostly for quality assurance and verification purposes. Research participants had been given the opportunity to complete the online survey either at their work location (approved by Enbridge), or at home during non-working hours. Furthermore, they could finish it in stages, as the software had the functionality to re-enter the survey from the point of last departure.

The enhanced security option (i.e., SSL encryption) offered by SurveyMonkey™ was applied throughout the entire process of polling to ensure that privacy and confidentiality of every submitted response from each participant was upheld. Further to this, a respondent's name or any other personal information was never solicited at any time within the SurveyMonkey™ platform, as participation and provided data were founded upon the premises of anonymity and confidentiality, respectively. Participants were also continuously assured within the survey that their responses remained completely confidential, and that no one within Enbridge Inc. or the affiliated university would see individual replies and/or full survey sets associated with any one individual. To enhance and

51

ensure data security even further, the researcher of this dissertation was the only individual with access to the online survey and its associated replies, via a login identification and password that was only known by him. In the end, the information requested in the survey was structured and collected in such a manner that the identification of any individual participant and his/her respective replies could not be made.

The final consideration in designing the study was deciding where the survey itself would be physically administered from. The communication emails, online survey, and gathered responses were managed and analyzed in the researcher's Enbridge Inc. office, which was located in the Enbridge Inc. tower in Edmonton, Alberta, Canada. All data (i.e., whether in electronic format stored on a memory storage device, or hard-copy paper format) would remain locked in an assigned drawer in this office for the duration of the research effort. The researcher sought, and was granted, authorization from his immediate workplace supervisor to use the above-noted office (refer to Appendix B, Attachment A). The fact that the researcher was also an employee of Enbridge Inc. was publicly disclosed within the opening commentary of the survey itself, as well as within each email sent to the test population (as part of the closing signature) during the survey process.

Study Instrument

The following section provides general details and relevant insights on the structure of the final survey, as well as each of the three already-existing

instruments that were leveraged upon within its make-up. An overview of the assembled question set related to demographics is also presented. The final survey instrument that was prepared and launched to gather the opinions of the test population can be found in Appendix A.

The assembled questionnaire, complete with all questions, commentaries, and opening and closing remarks, ended up evolving into a sixteen-page, 47-question instrument. The first three pages were introductory in nature, and featured the discussion and elaboration of general information related to the research, the research team, the purpose of the study and its background foundation, the test population of interest, the questionnaire format, estimated completion time, confidentiality, and voluntary participation. The fourth page, reflective of a decision point within the survey process, formally asked the participant whether he/she would like to proceed or depart from the research study in question. Departure at this point took the participant directly to the last page of the survey (i.e., the closing remarks and gratitude page). It should be noted that if a participant decided to proceed with the survey at this juncture, and then later changed his mind, he could easily exit the process by simply closing the Survey-Monkey^{TM} web-browser page he was currently on. Partial data sets, indicative of an early exit from the survey process, were not included in the final data set that was used for hypothesis testing. The next three sections of the survey captured current, personal opinions and perspectives regarding workplace climate (3 pages, 15 questions), CSR orientation (4 pages, 15 questions), and engagement level at work (2 pages, 8 questions). The fourth and final data-collection section

comprised demographic questions (2 pages, 8 questions). The final page of the survey was a close-out page that acknowledged a respondent's participation and/or interest in the study, whether he/she completed the questionnaire in its entirety or not.

As mentioned earlier, three essential sections of the survey capitalized on existing questionnaires for their data collection approaches. Each referenced instrument is statistically valid, reliable, and used frequently in its respective research domain. Very minor adjustments to the text within the original instruments (if any at all) had to be undertaken to ensure that the language was modern, understandable and relevant for the proposed test population, from both a social evolution and an industry context perspective. Each instrument and its make-up are briefly discussed next.

Workplace climate perceptions were quantified through the use of a questionnaire (i.e., Perceived Autonomy Support: The Work Climate Questionnaire) made available for research purposes by the founders of Self-Determination Theory (Self-Determination Theory, 2012). This questionnaire uses fifteen construct-specific statements to gauge the climate of the workplace along a seven-point Likert scale. A Likert scale is a bi-polar, psychometric scaling method that offers a range of positive and negative values to measure a respondent's reaction to the statement presented, usually with a neutral reaction at the midpoint on the scale. The questions (or statements) were set up so that a higher score on any given question would reflect an autonomy-supportive work environment; a lower score would indicate a response associated with a more

54

controlling workplace. A mean (average) score is calculated from the individual

responses to the fifteen questions that were posed. A higher mean score is

reflective of a perception of a workplace climate that is more autonomy-

supporting than controlling. The advantage of this method is that mean scores

from Likert-type scales can be compared between different individuals and/or

groups of individuals. An example of two workplace climate questions found

within the final survey can be seen in Figure 5.

Figure 5. Example Survey Questions (Workplace Climate Perception)

An individual's corporate social responsibility orientation (CSRO), or

CSR attitude, was measured by using Aupperle's forced-choice questionnaire

(Aupperle, 1982; Aupperle et al., 1983). A forced-choice instrument requires the

selection of a particular option amongst a set of choices. This specific fifteen-item

questionnaire required respondents to allocate a full ten points (in whole amounts)

to four distinct statements associated with each question posed. The four

statements associated with each question represented the corporate responsibilities

(i.e., economic, legal, ethical, and philanthropic) identified within Carroll's (1979;

1991) four-part CSR construct. An average score is calculated for each of the four

CSR dimensions from the individual responses to these questions. The use of a forced-choice instrument in this setting was driven by the desire to minimize social desirability bias, a concern that arises when such concepts are being researched. An example of two CSRO questions found within the final survey, complete with the opening text used to explain the forced-allocation procedure to participants, can be seen in Figure 6.

• INSTRUCTIONS

Based on its importance to YOU, allocate up to, but NOT MORE THAN, TEN (10) TOTAL POINTS to each set of four statements. Ensure you ONLY USE WHOLE NUMBERS between 0 and 10 (i.e. no fraction/decimal amounts, as rounding errors will be introduced). Also note that each statement requires a weighting be assigned to it (i.e. from 0 to 10).

For example, you might allocate points as such:

A = 4
B = 3
C = 2
D = 1
----
10 pts (Total) - or -

A = 1
B = 2
C = 0
D = 7
----
10 pts (Total) - or -

A = 10
B = 0
C = 0
D = 0
----
10 pts (Total) ... etc

17. It is important to perform in a manner consistent with:

A. the expectations of maximizing financial performance
B. the expectations of government and the law
C. the charitable and philanthropic expectations of society
D. the values and ethical standards of society

18. It is important to be committed to:

A. being as profitable as possible
B. charitable and voluntary activities
C. abiding by laws and regulations
D. moral and ethical behavior

Figure 6. Example Survey Questions (CSR Orientation)

56

The set of questions concerning one's level of engagement at work came courtesy of a recently-released research report commissioned by The Conference Board (Gibbons and Schutt, 2009). Their findings concluded that employee engagement could be robustly measured, in any cultural setting or industry, with eight simply-phrased questions. The posed questions sought out employees' current emotional, rational, and behavioral states in the workplace. The aggregated measurement of the responses from a participant showcased his/her respective engagement level at work. Like the Work Climate Questionnaire, which measured perceived autonomy support, the engagement questionnaire used a seven-point Likert-scale to measure a respondent's degree of positive or negative reaction to each of the eight questions. A mean (average) score is calculated from the individual responses to the eight questions. An example of two questions related to engagement, as found within the final survey, can be seen in Figure 7.

Figure 7. Example Survey Questions (Engagement)

The core data set collected from a participant of the survey concluded with an array of demographically-based questions. The question set, which asked respondents to provide information about themselves and their corporate involvement, was developed in such a way that the researcher could easily

segment and aggregate responses into requisite clusters when statistical analysis

of the hypotheses was to occur. For each of the eight questions posed, the

respondent simply had to select the answer that best fit his/her circumstance at the

time the survey was being completed. In some cases, more than two answers were

available for selection by the participant. Additionally, explanations or

elaborations of concepts/variables were offered to minimize potential

misunderstandings of what was being asked. The five key demographic variables,

from a hypothesis-testing perspective, included: work location (i.e., office versus

field), people responsibility (to demarcate frontline supervisors and frontline

employees), job function (to demarcate frontline supervisors and frontline

employees in a different manner), education level (i.e., basic, technical, or

academic), and age (i.e., birth year, which allows for clustering of responses by

generation). Capitalizing on the forthcoming survey opportunity, three additional

demographic-based variables were also gathered: each participant's country of

employment, tenure with Enbridge Inc., and gender. Although not required for

hypothesis testing, these variables were collected from a contingency point of

view if the research necessitated that different variables be examined and/or

incorporated into the frameworks being explored.

Once the envisioned structure and layout of the survey had been

established, including the specific questions to be asked, the researcher transposed

the raw components over to the SurveyMonkey^{TM} platform to create the end

product for eventual rollout to the test population. Once all of the information had

been entered into the software platform, and the survey's layout and design had

been completed, security permissions and functionality settings related to data administration were appropriately toggled within SurveyMonkey^{TM}. The researcher then function-tested the end product and corrected any noted operational deficiencies.

One final assessment of the SurveyMonkey^{TM} end product was then conducted. The survey was function-tested by an independent, third-party group to gauge its operability, applicability, and ease of understanding before being launched to the test population. This was a valuable exercise with respect to fine-tuning the end product. Feedback from the group led to slight alterations to the structure and overall functionality of the instrument. Generally, response was positive with respect to ease of use, understanding, allocated time to complete, and intent. The members of the test group were employees of different business units within Enbridge, as well as individuals who had no affiliation with Enbridge. None of the test group members participated in the research study itself.

Ethical Review

Any research involving human beings must be performed with the utmost regard for ethical standards and conduct. To ensure that the basis of this research study, along with the developed survey instrument and its execution, complied with and adhered to the ethical requirements of the University of Alberta, a formal review and approval process was initiated within the Faculty of Engineering's Research Ethics Board (REB).

Executed before the research itself could begin, the ethics approval process required that a standard proposal be completed and submitted to the REB for review and assessment. The thirty questions associated with the proposal sought not only to understand the scope, intent, and execution methodology associated with the research, but more importantly, how the study intended to manage and address all aspects linked to participant privacy, confidentiality, anonymity, and participant engagement during the survey process. Proposed data collection and handling, data management and control processes, as well as anticipated benefits, costs, and risks to participants all formed part of the REB question set. Appendix B shows the completed proposal for this research study, with its detailed responses and supporting attachments, that was submitted to the REB for review and approval.

The REB determined that the proposed research and its accompanying survey could be conducted, provided that two minor modifications were made to the submitted proposal. Firstly, the principal investigator of the project was required to reveal that he is also an employee of Enbridge Inc. in the prepared Participant Information Letter (refer to Appendix B, Attachment B), and secondly, the survey was required to formally mention that all data associated with the study would remain locked in an assigned drawer *only* at the principal investigator's identified office location (refer to Appendix B, Question #8).

After the principle researcher agreed to and incorporated the proposed recommendations, the proposal was re-submitted, and the REB granted ethics approval for the research study.

Corporate Approval

Equally as important and significant as the university's ethical review/approval process was the procurement of formal, corporate support prior to executing the research within Enbridge's LP business unit. The process of obtaining this sought-after approval evolved into two distinct endeavors.

Firstly, a presentation that outlined the background and objectives of the proposed research was developed. The established framework to be examined, generalities around the developed research instrument to be deployed, the test population of interest, and an envisioned execution plan were also included in the presentation, which can be found in Appendix C. A meeting with the vice presidents of LP Operations and LP Human Resources was then scheduled, in order to review the prepared material in an effort to secure their support for the envisioned research project. Support for the research was offered by the two executives, with the condition that the scope be expanded to include the entire LP business unit. (The originally-proposed test population was only intended to be the Operations group of the LP business unit, as reflected in the material seen in Appendix C.) A second condition was that another, brief oral presentation be made to the remaining members of the LP executive management team to secure their support for the initiative, as they were now all impacted by the change in scope proposed. The researcher agreed to both conditions.

As such, the second undertaking en route to securing formal, corporate approval was a question-and-answer session with the executive leadership team of

the LP business unit. The discussion session provided general, high-level insights into the proposed research and the logistics associated with launch of the survey and its accompanying data collection and management processes. Also discussed were the concepts of individual and group privacy assurances, confidentiality measures, anonymity, and ethics. The intent of the dialogue was to ensure that the research met and respected all internal ethical and legal requirements (i.e., policies) that Enbridge Inc. adheres to when it polls its employees in a similar manner. To ensure compliance with these and other related matters (i.e., intellectual property, data retention, data destruction), a legally-binding confidentiality agreement was prepared between Enbridge Inc. and the researcher. The confidentiality agreement included and referenced, where need be, certain sections of the ethics review proposal that was previously accepted by the Faculty of Engineering's Research Ethics Board (REB) (i.e., it formed a part of the confidentiality agreement as a supporting schedule).

After execution of the confidentiality agreement between both parties, approval to proceed with the research study within Enbridge's LP business unit was granted by the LP executive team.

Data Collection

After formal approvals were secured to launch the survey, attention shifted to the data collection phase of the research study. Specifically, the survey instrument was launched and administered to the test population of interest.

To assist with the logistics of this undertaking, a list of activities that required attention, along with the associated timelines set and/or observed, was developed for guidance purposes. Table 2 summarizes the critical tasks associated with the launch and administration of the survey. General pre- and post-launch activities are also shown to clearly depict the sequence of events that impacted, or were impacted by, the data collection phase of the research study.

Table 2. Survey Launch Activities and Timelines

PRE-LAUNCH SURVEY ACTIVITIES	TIMELINES
Finalize Survey Structure & Question Sets	By May 9, 2010
Transfer Information to SurveyMonkey^{TM} Website	By May 16, 2010
Executive Management Review and Final Approval (Enbridge LP)	May 13, 2010
Test and Tweak Developed SurveyMonkey^{TM} Instrument (Researcher)	By May 21, 2010
Functionality and Time-Trial Test of SurveyMonkey^{TM} Instrument (Test Group)	
Ethics Review and Final Approval (University of Alberta)	May 25, 2010
Send Email Notification of Upcoming Survey to Enbridge LP Executive Management	May 27, 2010
Sign Off on Confidentiality Agreement (Between Enbridge LP and Researcher)	May 31, 2010

SURVEY LAUNCH & ADMINISTRATION	TIMELINES
Send Survey Introduction Email to Test Population	June 1, 2010
Launch Online Survey (Email Survey Invitation to Test Population) (Estimated Time to Complete Survey: 15–20 minutes)	June 7, 2010
Send Survey Reminder Email to Test Population	June 14, 2010
Send Survey Closure Email to Test Population	June 21, 2010

POST-LAUNCH SURVEY ACTIVITIES	TIMELINES
Conduct Preliminary Analysis of Survey Data	July–Sept, 2010
Conduct Detailed Analysis and Hypothesis Testing of Survey Data	Q4, 2010
Present General Findings to Enbridge LP Exec. Management	Q1, 2011

It should be noted that every effort was taken to launch the survey and gather data before July 1, 2010 for two particular reasons: firstly, to ensure that the majority of LP employees were still at work prior to the kick-off of summer vacations, and secondly, to avoid having to directly compete with an annual engagement survey administered to all Enbridge Inc. employees every autumn. These realities were taken into consideration to help ensure the test population and, by default, the survey participation rate, were given every chance to be maximized.

Survey launch, subsequent survey administration, and data gathering within SurveyMonkey[TM] occurred between June 1 and June 21, 2010. As discussed earlier in this chapter, email was used as the sole communication tool to connect with the frontline employees of the LP business unit. The manually-scrubbed email distribution list that was assembled and called upon the morning of June 01, 2010 was the same list of frontline employees that was used at each communication milestone (i.e., June 7, 14 and June 21, 2010). Four separate and distinct emails were prepared for the research study, with each having a unique purpose. The communication emails crafted were entitled "Survey Introduction," "Survey Invitation," "Survey Reminder," and "Survey Closure." They are included in this dissertation as Appendix D, Appendix E, Appendix F, and Appendix G, respectively.

The Survey Introduction email provided general background information on the academic research, and introduced the researcher to the LP test population

(i.e., as both an academic and an employee of Enbridge). It announced the commitments taken by the researcher towards the confidentiality of responses and the anonymity of participants, as well as affirming that participation was completely voluntary and that participants could depart from the survey at any time along the way. The email also stated that this was a stand-alone academic research study that was not connected to any other Enbridge initiative and/or survey. An explanation of how the forthcoming survey would be made available to participants was also provided. It should be noted that any potential participant could simply delete this, and all other subsequent emails, if he/she was not interested in engaging with the research study.

The Survey Invitation email was sent on June 7, 2010, marking the actual launch of the survey. This email to the test population included a web link that would directly re-route the participant to the online survey hosted by SurveyMonkey^{TM}. Two different approaches to launch the online survey were provided, as well as a brief introduction as to what one could expect to see when he/she first arrived at the online survey site. The closing date and time of the survey, as well as a request to only complete one survey from one computer, were also communicated in the Survey Invitation email. The initial Survey Introduction email that had previously been sent was also attached to the end of this email for those participants who had perhaps not seen or read it, and were unsure of the premise behind the request to participate in an online survey.

The Survey Reminder email, sent one week after the launch of the survey, began by providing some positive commentary on the participation rates seen up

65

until that date. This was intentionally communicated to the test population at the beginning of this email, as it was hoped it would stimulate others to also participate, thus increasing survey response rates even further. The closing date and time were then reiterated in the email, followed by instructions on how to access the online survey (i.e., via the Survey Invitation email, which was attached at the end for referral and access purposes). The email closed with a statement that re-emphasized the importance of employees' participation in the research study, and extended the researcher's appreciation for their time.

One final opportunity to participate in the research study was communicated to the test population: the Survey Closure email was sent on the morning of June 21, 2010, the last full day the survey would be made available. If still interested, individuals had until 5:00 p.m. M.D.T. to access and complete the online survey. The Survey Invitation email, which outlined how to connect directly to SurveyMonkey™, was attached to the end of the email for quick and easy referral to the online website. The Survey Closure email, the researcher's final communication with the test population, closed with an acknowledgement of thanks to those who participated in the study.

At precisely 5:00 p.m. M.D.T. on June 21, 2010, SurveyMonkey™ automatically stopped receiving replies to the online research survey that was launched at 8:00 a.m. on June 7, 2010 to frontline personnel within Enbridge's LP business unit.

Data Analysis

The first data analysis activity undertaken involved determining the size of the test population that was reached via the email communication process previously described. Figure 8 visually depicts the methodology employed and the dynamics that influenced the final tally.

Firstly, the researcher called upon an all-inclusive email distribution list whose members were all full-time Enbridge LP employees, regardless of organizational rank. The total size of the LP business unit was 2,264 employees, as of the morning of June 01, 2010. With the aid of organization charts, the researcher removed 65 executive and/or senior manager email addresses from the compilation. This scrubbed email distribution list, which then included only frontline LP personnel, had 2,199 email addresses—the estimated, total number of frontline personnel within the business unit at that time. The Survey Introduction email was sent to the members of this distribution list at noon on June 1, 2010 to kick off the research survey process.

The email distribution list was continually re-assessed and reduced accordingly four more times after the Survey Introduction email was sent. The email distribution list was reduced in total by 54 individuals between the release of the Survey Introduction email and the conclusion of the data collection process. Figure 8 shows the breakdowns of these reductions. This accounted for the removal of 3 general managers, as requested by the VP of Operations; 1 self-withdrawal; and 50 employees whose automatic out-of-office email replies were individually reviewed to determine whether the duration of their absence would

67

June 01, 2010 (a.m.)
Gross Size of LP Business Unit as per an All-Inclusive Email Distribution List **(n = 2,264)**

CANADA	USA
1,686	578

June 01, 2010 (a.m.)
(60) CDN Exec/Sr Mgmt Manually Removed from Email Distribution List

June 01, 2010 (a.m.)
(5) USA Exec/Sr Mgmt Manually Removed from Email Distribution List

June 01, 2010 (noon)
Survey Introduction Email Sent to Frontline Enbridge LP Employees **(n = 2,199)**

CANADA	USA
1,626	573

June 01, 2010 (p.m.)
(1) CDN Frontline Employee Requested Exclusion from the Study

June 01, 2010 (p.m.)
(3) USA Gen Mgrs were Removed from the Email Distrib List (VP Directive)

June 01, 2010 (p.m.)
(22)* of 125 Out-of-Office Notifications Received Impact Test Population Size Due to Length** of Absence

June 07, 2010 (a.m.)
Survey Invitation Email Sent to Frontline Enbridge LP Employees **(n = 2,172)**

CANADA	USA
1,603	569

June 01, 2010 (p.m.)
(1)* of 30 Out-of-Office Notifications Received Impact Test Population Size Due to Length** of Absence

June 07, 2010 (a.m.)
(9)* of 111 Out-of-Office Notifications Received Impact Test Population Size Due to Length** of Absence

June 07, 2010 (a.m.)
(2)* of 16 Out-of-Office Notifications Received Impact Test Population Size Due to Length** of Absence

June 14, 2010 (a.m.)
Survey Reminder Email Sent to Frontline Enbridge LP Employees **(n = 2,161)**

CANADA	USA
1,594	567

June 14, 2010 (a.m.)
(10)* of 149 Out-of-Office Notifications Received Impact Test Population Size Due to Length** of Absence

June 14, 2010 (a.m.)
(6)* of 31 Out-of-Office Notifications Received Impact Test Population Size Due to Length** of Absence

June 21, 2010 (a.m.)
Survey Closure Email Sent to Frontline Enbridge LP Employees **(n = 2,145)**

CANADA	USA
1,584	561

June 21, 2010 (a.m.)
(0)* of 129 Out-of-Office Notifications Received Impact Test Population Size Due to Length** of Absence

June 21, 2010 (a.m.)
(0)* of 26 Out-of-Office Notifications Received Impact Test Population Size Due to Length** of Absence

June 21, 2010 (end of workday)
Final Size of Test Population (Frontline Enbridge LP Employees) n = 2,145

CANADA	USA
1,584	**561**

* - Types of absences noted: maternity leave, illness, vacation, leave of absence, project absence, retired, etc.
** - Each communicated length of absence was reviewed and assessed to determine likelihood of survey particpation

Figure 8. Total Participant Flow Diagram

68

prevent them from participating. (A total of 617 automatic out-of-office replies were received by the researcher during the two week period allotted for data collection.) Long-term absence notifications included maternity leaves, extended medical leaves, vacations, recent retirements, project absences, and other general leaves of absence. Short-term absences, which were assumed to not impact participation, included offsite meetings, field visits, business meetings, training, short-term vacations, and days off. Each out-of-office notification, specifically the duration of the absence communicated, was carefully scrutinized by the researcher to determine the likelihood of the individual to participate in the survey. Interestingly—and as expected—none of the 155 absence notifications received after the Survey Closure email was sent impacted the test population size, because they were already accounted for in earlier out-of-office notification reviews.

After the survey closed, detailed participant analysis revealed an overall test population size of 2,145 individuals (i.e., 1,584 Canadian employees and 561 American employees). This figure represents the total number of frontline LP personnel who were contacted by email, and were present at work over the two-week data collection period, which qualified them to participate in the study if they desired.

From there, the focus shifted towards determining how many survey replies were received (i.e., net response rate). This was done in two stages. Firstly, the researcher wanted to determine how many total data sets (i.e., fully- or partially-completed) were received on a daily basis, and how this coincided with

the release of each of the four emails that were sent to the test population. This total reflected the total viewership of the online survey (i.e., how many individuals of the test population actually went to the online survey). After this, a net response rate to the survey was calculated via forensic tracking and analysis of response counts, on a question-by-question basis.

Appendix H quantifies and graphically depicts the number of replies (full or partial data sets) received on a daily basis while the survey was available for participant use. Of the 2,145 individuals in the test population, 548 visited the online research survey. This represents a total viewership rate of 25.6%. Most of the visits to the survey (i.e., 387 hits [70.6%]) occurred at the start of the work week (i.e., on Monday), which coincided exactly with the dates the researcher sent emails to the test population. Viewership rates steadily declined during the week and were the lowest on weekends. The Survey Closure email, sent on the last day the survey was made available to the test population, prompted 80 more visits to the online instrument. The effectiveness of the developed email communication strategy is clearly evident based on the daily and cumulative viewership profiles shown in Appendix H. The results of a multivariate analysis of variance (i.e., MANOVA) with "group" as the fixed factor (i.e., those who responded by submitting complete data sets on the day an email reminder was sent by the researcher, versus all other complete data set replies that were submitted) and all four CSR components (i.e., calculated average scores, per respondent, related to the economical, legal, ethical, and philanthropic dimensions) as dependent variables indicated no significant effect of "group" (i.e.

Wilks' Lambda = 0.986; $F_{(4,415)} = 1.52$, ns). Thus, it can be concluded that there was no evidence of temporal response bias within the research study.

Net response rate was then determined. SurveyMonkey[TM] was able to produce a summary report that highlighted how many people answered each question of the survey, starting off with the 548 individuals who arrived on the first page of the survey. This was a decision-point page where an individual could choose to start the survey, or exit and not participate. Of the 548 personnel who arrived at this page, 528 continued with the survey (i.e., 20 exited). From this point forward, a participant had the option to exit the survey at any time by simply closing his/her web browser. An incomplete data set, on a per individual basis, was indicative of such an exit from the survey.

The set of questions connected to workplace climate perceptions was fully completed by 514 individuals, reflecting a departure of 14 more people from the study. The next set of questions related to CSR orientation—solely by their nature and the requested forced-choice format of the replies—required more thought, effort, and time to complete. As such, the researcher felt that participation rates would be most at risk of decline at this point because of the effort, time, and thought required of the respondents. This assumption was confirmed by the number of individuals who exited the survey at the CSRO question set, indicating their decision to not complete the section. 91 individuals departed the survey at this phase, leaving 423 who had provided responses to all questions thus far. The engagement question set that followed was answered by 422 respondents (i.e., 1

71

departure from the survey). The last eight demographically-based questions were wholly answered by 420 respondents (i.e., 2 incomplete data sets were noted).

Overall, of the 2,145 members within the LP test population, 548 were curious and willing enough to proceed to the online survey (giving a 25.6% survey viewership rate). From there, 420 (19.6%) provided responses to all of the questions (i.e., fully-completed data sets), which is reflective of the net response rate of the research survey. This response rate, which is consistent with other research undertaken in this domain, was thus deemed acceptable for statistical analysis purposes. Further confidence around the adequacy of the study sample size was bolstered by the analysis of a provided table for determining minimum returned sample size for continuous and/or categorical data (Bartlett et al., 2001). Referencing the continuous data column and population size of 2,000 within the noted table of Bartlett et al. (2001), a sample size between 83 and 189 would have been deemed acceptable for a study of this magnitude (i.e., assuming a margin of error = 0.03 and alpha's between 0.10 and 0.01, respectively). General guidance from Comrey and Lee (1992) also strengthen the adequacy of the collected sample size, as 300 to 500 cases are deemed as "good" and "very good", respectively, for factor analysis. The replies from these 420 individuals were carried forward as the primary data set for detailed analysis, and eventual hypothesis testing, as replies to each question of the survey were provided.

At this point, the 420 data sets from SurveyMonkey™ were transferred over to a master Microsoft Excel spreadsheet (complete with password protection), for back-up reasons and ease of transferability to other software

programs. The spreadsheet data was then transferred and accordingly formatted within the statistical analysis software program chosen for this study: SPSS. A formal quality assurance review was also done to ensure the data set was wholly transferred and properly formatted within SPSS.

Prior to the formal assessment (i.e., descriptive statistics and inferential analyses) of the data set, two general evaluations were undertaken. The first involved determining which statistical technique (i.e., approach) should be used for hypothesis testing. A meta-analysis of other similar CSRO research studies, along with the understanding that differences between two or more groups were to be assessed, led the study to the one-way and two-way (i.e., between-subjects) analysis of variance (ANOVA) technique. This technique, along with a description of where each of the two noted methodologies was applied on a hypothesis by hypothesis basis, is discussed further in chapter 4 ("Results").

The second evaluation involved the raw survey data, and encompassed the use of three specific tests. The first test of the survey data was its reliability, also referred to as internal consistency. Reliability determines the extent to which a developed set of questions can collectively measure the variable being studied, on a repeated basis. The second test had to do with construct validity. Construct validity is the degree to which a devised measurement scale correlates to the variable that it is intending to measure. An inter-item correlation review of the CSRO elements (i.e., economic, legal, ethical, and philanthropic) was also undertaken, and represents the third examination done. Each of these assessments of the developed survey instrument is discussed further in chapter 4 ("Results").

Chapter 4: Results[†]

Survey Instrument Assessments

Prior to conducting detailed statistical analyses, sections within the survey instrument itself were judged on three fronts. The first test was reliability, also referred to as internal consistency. The second test evaluated construct validity. The third evaluation looked at the inter-item correlations of the CSRO elements and compared the findings to those of the original CSRO instrument developed by Aupperle. Although the engagement instrument is also mentioned and partially assessed within this section of the study (i.e., strictly for awareness and general interest), it is not a central (core) construct of interest with respect to the hypotheses being examined.

Reliability

The items within the survey that measured perceived degree of autonomy support (i.e., via work climate perceptions), CSR orientation (i.e., preference assigned to the economic, legal, ethical, and philanthropic dimensions), and engagement level were assessed from a reliability perspective. Reliability determines the extent to which a developed set of questions can collectively measure the variable being studied, on a repeated basis. In other words, a reliable set of questions gives consistent answers to questions that are about a single underlying thing. This is an important consideration when the results from the

question set(s) are used for hypothesis testing, as one is reassured (to a degree) that the same general response themes would be produced if the same questions were repeatedly answered by the same respondents.

Cronbach's alpha (α) was used to determine the internal consistency, or average correlation, of the assembled items to gauge reliability (Santos, 1999). A Cronbach's α of 0.70 or greater is generally considered acceptable from an instrument reliability perspective (Nunnally, 1978; Bland and Altman, 1997; Santos, 1999). The calculated Cronbach's alphas for each of the key constructs examined in the utilized research questionnaire are summarized in Table 3.

Table 3. Reliabilities (Cronbach's Alphas)

VARIABLE EXAMINED (CONSTRUCT)	# OF ITEMS (QUESTIONS)	CRONBACH'S ALPHA (α)
Work Climate	15	0.972
CSR Orientation (Economic)	15	0.893
CSR Orientation (Legal)	15	0.834
CSR Orientation (Ethical)	15	0.815
CSR Orientation (Philanthropic)	15	0.892
Engagement	8	0.898

Each variable of interest in this research study exceeded the lower threshold of 0.70, and thus confirmed the reliability of the three instruments that were assembled.

Further, the noted Cronbach's alphas were compared against those calculated for the original instruments they were based on. All noted variables in the study compared very favorably, from a reliability perspective, to their ancestral instruments' calculated reliability (refer to Table 4).

Table 4. Reliabilities (Original vs. Current Instruments)

VARIABLE (CONSTRUCT)	ORIGINAL INSTRUMENT ALPHA (α)	CURRENT INSTRUMENT ALPHA (α)
Work Climate	> 0.90 [a]	0.972
CSR Orientation (Economic)	0.90 [b]	0.893
CSR Orientation (Legal)	0.86 [b]	0.834
CSR Orientation (Ethical)	0.87 [b]	0.815
CSR Orientation (Philanthropic)	0.84 [b]	0.892
Engagement	0.85 [c]	0.898

[a] Deci, E. L., & Ryan, R. M. 2012. *Self-determination theory: An approach to human motivation and personality,* http://selfdeterminationtheory.org/questionnaires/10-questionnaires/47
[b] Aupperle, K. E., Hatfield, J. D., & Carroll, A. B. 1983. Instrument development and application in corporate social responsibility. *Academy of Management Proceedings*, 369–373.
[c] Gibbons, J., & Schutt, R. K. 2009. *A global barometer for measuring employee engagement*. Research Working Group Report 1460-09-RR, The Conference Board, Inc.

Construct Validity

The instruments used to measure perceptions of an autonomy supportive work climate, and individual CSR orientations, were also evaluated from a construct validity perspective. Construct validity is the degree to which a devised measurement scale correlates to the variable that it is intending to measure (Cook and Campbell, 1979; Bagozzi et al., 1991).

Principal component analysis (PCA) and the scree test were chosen to gauge the construct validity of the fifteen questions connected to work climate perception. PCA is a regression technique that constructs a set of vectors from the data space, with the largest principal components representing the most heavily weighted vector, to represent the important attributes of the data with a small number of components. The data themselves have features, and each vector assigns weighting factors to each feature. PCA thus reduces the number of variables to only what is important, using correlation to combine data that are related, and also reveals structure in the data.

The scree test then ranks the principal components, and rejects any that do not contribute much to the structure of the data. This is equivalent to saying that the set of basis vectors for the data set are the principal components, and any basis vector that has a small eigenvalue should not be used. The scree procedure involves plotting the eigenvalues (y-axis) against their respective factors (x-axis), and looking for the natural bend or break point (i.e., where the data points begin to flatten out) (Costello and Osborne, 2005). The number of data points above the break point identifies the number of factors to retain. Further, factors with eigenvalues ≥ 1.00 are considered significant for retention and relevant for analysis, as they account for a large amount of the variability in the data.

For the work climate question set, PCA revealed the presence of one significant component (factor) (see Appendix I). Of the 15 components found using PCA, this single component was the only one with an eigenvalue ≥ 1.00 (i.e., 10.845), and accounted for over 72% of the variance in the data. Examination of the scree plot visually re-confirmed the presence of only one component. Factor loadings were then examined. Factor loadings reflect the individual correlation coefficient between the variable being assessed in each question and the component itself. Factor loadings ≥ 0.40 were considered to be highly correlated with the component in question (Raubenheimer, 2004). The fifteen factor loadings observed for this component ranged from 0.739 to 0.921, and were thus deemed highly correlated to the component. In the end, the results from this analysis confirmed the existence of one component (i.e., perceived autonomy support in the workplace) as gauged by the SDT question set used in

77

the study. That is, the devised measurement scale correlates to the variable that it is intending to measure.

Four factors were noted via a similar, yet modified, PCA and scree evaluation of the sixty questions used to assess CSRO. This time, CSRO instrument validity was tested using factor analysis, based on principal component analysis with Varimax rotation and Kaiser normalization.

Varimax rotation changes the coordinate system for the principal components. This adjustment is done so that each individual variable can be described by a linear combination of only a few of the possible vectors in the set of basis functions. This is akin to deciding to use latitude and longitude to describe location on a map of a country, instead of using a set of astronomical coordinates. Both sets of coordinate frames will correctly describe position, but in the region that we are interested in on the map, latitude and longitude make more sense. In a survey, the Varimax rotation allows us to examine how well groupings of questions (items) measure the same concept. Using the map analogy again, it makes more sense to line up a map to the magnetic north line when we are using a compass.

Kaiser normalization relies on eigenvalues that are greater than one, meaning that the factor has to contribute as much as the equivalent of one of the original variables; otherwise, it is not worth keeping. "High loading" means that the factors have high correlations, and so only a few factors are responsible for most of what the data represent.

In this study, an N-factor principal component analysis, complete with Varimax rotation and Kaiser normalization, was conducted on the sixty-item CSRO question set to get an initial sense of how many significant components would be extracted. This PCA effort extracted 16 significant components (i.e., components with an eigenvalue ≥ 1.00) that accounted for over 71% of the variance in the data. Yet, most of the calculated factor loadings (i.e., 920 of the 960 loadings) for these 16 components were well below the set 0.40 threshold to be considered highly correlated. This prompted further refinement and analysis of the results via the scree test.

Examination of the N-factor scree plot (see Appendix J) reveals that there should likely only be 3, 4, or potentially even 5 components of relevance. As such, 3-factor, 4-factor, and 5-factor PCAs complete with Varimax Rotations and Kaiser Normalizations were performed to determine the most explanatory and logical factor structure. This was accomplished through an exhaustive review and comparison of the rotated factor-loading tables that were generated, respectively. In the end, the 5-factor PCA produced the least convincing findings of the three scenarios. The 4-factor and the 3-factor loadings were then compared against each other, with the 3-factor model proving to be slightly 'tidier' and more representative of the number of components reflected within the posed CSRO question set. An overview of the 3-factor component representation is discussed next.

Appendix K contains the SPSS-generated rotated component matrix for the 3-factor PCA that was performed. Once again, from the ranking of factors,

three dominant components were identified. Loadings of ≥ 0.40 were found for forty of the forty-five questions connected to these three components (refer to Appendix K). The highly positive loadings (i.e., correlations) associated with factors 1, 2, and 3 synchronized very well with the economic, philanthropic, and legal questions of the CSRO instrument, respectively.

Eleven questions related to the ethical dimension predominately aligned with factor 1 (economic), and four questions aligned marginally with factor 3 (legal), although both cases represented inverse relationships (i.e., an increase in ethical considerations resulted in a decrease in economic success). These inverse relationships are known as "negative cross-loading," and they indicate a negative correlation, which means that the factors relate to each other, but an increase in one factor corresponds to a decrease in the other. In the case of economic and legal factors, it means that people will trade off profit in order to respect the law, and vice versa. Significant negative-based cross-loading was also evident in three of the fifteen ethics-based questions (i.e., across factor 1 [economic] and factor three [legal]).

The existence of Carroll's four CSR responsibilities was confirmed through these evaluations, even though one factor housed two CSR components (economic and ethical). Ultimately, the devised measurement scale correlated to the four variables it was intended to quantify. Additionally, Aupperle's (1982) original finding of a dual, yet inverse, loading between the economic and ethical components was once again re-confirmed to a large degree in this study. That is,

most people—at least, in this study—will trade off profit for ethics, or the other way around.

Inter-Item Correlations (CSR Dimensions)

Table 5 summarizes the correlations among the four CSR components in this study. The average score (mean) of each CSR dimension, based on the replies provided by the respondents, was used in this assessment. The purpose of this task is to illustrate and discuss the noted relationships between the four CSR responsibilities.

Table 5. Inter-Item Correlations (CSR Dimensions)

		ECO_avg	LEG_avg	ETH_avg	PHI_avg
ECO_avg	Pearson Correlation	1	-.168**	-.609**	-.389**
	Sig. (2-tailed)		.001	.000	.000
	N	420	420	420	420
LEG_avg	Pearson Correlation	-.168**	1	-.279**	-.488**
	Sig. (2-tailed)	.001		.000	.000
	N	420	420	420	420
ETH_avg	Pearson Correlation	-.609**	-.279**	1	-.053
	Sig. (2-tailed)	.000	.000		.280
	N	420	420	420	420
PHI_avg	Pearson Correlation	-.389**	-.488**	-.053	1
	Sig. (2-tailed)	.000	.000	.280	
	N	420	420	420	420

**. Correlation is significant at the 0.01 level (2-tailed).

There was a statistically significant negative (inverse) correlation noted between the economic dimension and each of the legal ($r = -0.168$, $p = 0.001$), ethical ($r = -0.609$, $p = 0.000$), and philanthropic ($r = -0.389$, $p = 0.000$)

81

dimensions. This supports the notion that a 'shareholder-driven' perspective (economic) does indeed place a very different emphasis and importance on corporate responsibility, as compared to perspectives aligned with 'stakeholder-driven,' non-economic–based ideologies (i.e., legal, ethical, and philanthropic). Simply, it seems apparent from the correlations that concerns for profit are in tension (or conflict) with concerns for society.

The most significant inverse correlation was seen between the economic and ethical dimensions ($r = -0.609$, $p = 0.000$). This inverse relationship finding mirrors the results of the factor analysis performed earlier, as well as the inter-correlation results reported by Aupperle et al. (1985) (i.e., their economic component correlated negatively with all three of its counterparts, with the strongest correlation [$r = -0.710$, $p = 0.001$] seen between the economic and ethical components). Once again, this suggests that individuals (in this study) would trade off profit for ethics, and vice versa.

Together, the conducted assessments (i.e., factor analysis and correlations) re-confirmed the existence of four different, yet interconnected concepts within the survey instrument measuring CSRO. This, in turn, validated Carroll's (1979; 1991) original, four-dimensional representation of CSR. Additionally, it followed the same operationalization 'footsteps' laid out by Aupperle during his development of a Carroll-based instrument. Finally, an overall degree of comfort was also realized in that the two key questionnaires adopted for this study (work climate perceptions and CSR orientations) were in fact valid and reliable instruments that would accurately characterize their respective construct.

82

Descriptive Statistics

This section summarizes the descriptive statistics associated with the study. Firstly, frequency tables are showcased for each categorical (i.e., demographic) variable collected from the test population. Although five of the eight demographic variables were called upon for hypothesis testing, all variables were summarized to provide a clear image of the make-up of the test population that was polled.

Following this, overall perspectives of the LP business unit are presented. Collective reply summaries of the participants, with regards to their current perceptions around perceived work climate, CSR preferences (i.e., orientation) and engagement levels at work, are highlighted. Histograms with normal distribution curves are also utilized to further illustrate the observed landscape.

In preparation for hypothesis testing, the demographic groups of interest to be compared were extracted from the collective data set, and were accordingly summarized by their respective CSROs. These summaries conclude the "Descriptive Statistics" section.

LP Demographics

Eight different demographic variables were collected in the survey. Of these, five were directly associated with the hypotheses of the study: people responsibility, job function, worksite location, education level, and age. Country, tenure, and gender comprised the other variables collected, although they were not used in any evaluations.

The variables of people responsibility and job function were used to separate the respondents, via two distinct ways, into frontline supervisors and frontline employees. The rationale behind this 'two-pronged' approach was to determine whether the relationships between work climate perceptions and CSRO significantly differ when the personnel being assessed are examined in two different, yet relevant ways.

People responsibility identified respondents who performed at least one annual performance review of a full-time company employee—a very recognizable responsibility of frontline supervisors within Enbridge. The question was set up in a true/false manner, where true responses were indicative of frontline supervisory personnel. False replies classified respondents as frontline employees. It was clearly articulated within the survey that all part-time, temporary, contractor, or co-op student employees were not considered full-time in this study. It was also explained that if the respondent was in an organizational role (which was likely newly-created) where all direct-report positions were currently vacant, but were expected to be filled by full-time employees, then they were to identify themselves as supervisors. All other participants in the study were characterized as frontline employees.

Job function, on the other hand, differentiated respondents by generalized roles in the company. The four available job function clusters to select from included: administrative/clerical, frontline employee, professional/specialist, and supervisory. Example titles were shown for the frontline and supervisory options, as many differing titles existed within the company, although job functions and

associated responsibilities under various titles were often quite similar. Administrative, frontline, and professional (specialist) personnel were then grouped together and identified as frontline employees in this study. Frontline supervisors were easily identified, because this job function was explicitly provided as one of the selections within the survey.

Worksite location established whether the frontline employee worked at a field or office location, depending on where they spent most of their daily work hours. Relevant, Enbridge-related examples of each type of worksite were provided alongside the posed question to minimize confusion.

Education levels were partitioned into three groups: basic (i.e., high school level, or lower), technical (i.e., tradesperson), and academic (i.e., post-secondary graduate, from either a college or university). This tiered structure synchronized with the labeling used in other studies within Enbridge, and as such, was assumed to be familiar to participants. The study did not require participants to clarify whether they completed their studies at the education level they associated themselves with, nor did it inquire about the discipline of the education that was pursued (e.g., engineering, business, law, etc.).

The age variable was set up in a pull-down, selection-type manner in the survey. Individual years from 1935 to 1993 were offered in the pull-down list for selection. As such, the range of ages offered at the time the study was launched was from 17 to 75 years old. The replies were then clustered into 3 distinct generational groups: Baby Boomer (1946–1965), Gen-X (1966–1980), and Millennial (1981–1993).

The 'extremity' years (i.e., 1993, and any year prior to and including 1945) were intentionally offered from a data quality viewpoint. The study was set up to only evaluate those 18 years of age or older. On the other end of the spectrum, it was generally assumed that anyone over the age of 65 was likely retired. Replies received outside of these bounds were to be assessed on a case-by-case basis. No replies were noted with the 1993 (17-year-old) birth year. That is, every participant was 18 years of age or older. However, two data sets fell outside the 'senior' bounds of the study (i.e., they each identified themselves as having a birth year of 1935). A review of their submitted survey data set showed nothing out of the ordinary. In consideration of this, these two data sets were rolled into the Baby Boomer sub-group, which was then re-labeled "Baby Boomer or Earlier ($\leq$ 1965)."

Respondents also characterized themselves as working in Canada or the U.S.A. (country), as male or female (gender), and by the number of years of service at Enbridge (tenure). Tenure was eventually clustered into 5 distinct groups: < 2 years, 2–5 years, 6–10 years, 11–20 years and $\geq$ 20 years. It should also be noted that 'country' acted as a proxy for nationality, even though a very small likelihood existed where Canadian citizens could have been working in the U.S.A. locations of Enbridge LP, and vice versa.

Descriptive statistics for all of the demographic variables are summarized in Appendix L. The results show that most of the participants of the study were frontline employees (62.4%–76.2%) as opposed to frontline supervisors (23.8%–37.6%). These noted ranges reflect the dual classification approach that was used

86

to demarcate the test population (i.e., by people responsibility and by job function). Just under half of these frontline employees (42.1%) considered themselves to be professionals and/or specialists using the job-function methodology. Nearly two-thirds of the participants (65.2%) worked in an office setting, which aligns with the professional/specialist identification just noted. The education level of most individuals in the study was either academic or technical (63.1% and 29.3%, respectively). Additionally, the test population was predominately of the birth years associated with the Baby Boomer and Gen-X generations (42.4% and 41.9%, respectively). In addition to this, 72.6% of the respondents worked for Enbridge LP in Canada, and most were relatively new employees of the company (i.e., 60.3% had tenure of 5 years or less). Finally, an overwhelming majority of the participants were male (68.8%).

The breakdown and rationale associated with each variable of interest carried forth into hypothesis testing, as well as their respective response frequencies, are summarized in Table 6.

Table 6. Variables of Interest and Response Frequencies

	DEMOGRAPHIC VARIABLES OF INTEREST			Frequency	
Hypothesis	Assessed Demographic	Sub-Group(s)	Background/Rationale	n	%
CSRO and the Workplace					
P1	Liquids Pipelines Group	All Frontline Personnel	- All business unit personnel working at the 'frontline' for the organization - Below the middle-management layer of the organization	420	100.0
P2(a)	Organizational Role *(Performance Review Approach)*	Frontline Supervisors Frontline Employees	- Conduct at least 1 annual performance review on a fulltime employee - Do not conduct any annual performance reviews	158 262 420	37.6 62.4 100.0
P2(b)	Organizational Role *(Job Function Approach)*	Frontline Supervisors Frontline Employees	- Personnel formally identified as 'frontline supervisors' in the organization $= \Sigma$ (administrative + production/service + professional/specialist) personnel $= (37 + 106 + 177) = 320$	100 320 420	23.8 76.2 100.0
P3	Worksite Location	Field Sites Office Sites	e.g. regional offices, stations, terminals, right-of-way, equipment sites, etc. e.g. CDN (Edmonton, Calgary) or USA (Superior) head offices	146 274 420	34.8 65.2 100.0
CSRO and the Individual					
P4	Education Level	Basic Technical Academic	e.g. high school or less e.g. apprenticeship program, trade school, technical institute e.g. college, university	32 123 265 420	7.6 29.3 63.1 100.0
P5	Generation (Age)	Baby Boomer or Earlier Gen-X Millennial	1946 (or earlier) to 1965 1966 to 1980 1981 or later	178 176 66 420	42.4 41.9 15.7 100.0

LP Work Climate (WC) Perception

Perception of the work climate was operationalized through the use of the

Workplace Climate Questionnaire, which was made available for use by

researchers connected to Self-Determination Theory (SDT).

Each respondent was asked to select a rating that best reflected his current

opinion as it related to his interactions with his immediate supervisor at work.

Each question had seven ratings available for selection, from Strongly Disagree to

Strongly Agree. Each available rating was assigned a score (i.e., from 1 to 7,

respectively, with a score of 4 assigned to the centrally-located rating identified as

'Neutral'). Fifteen questions in total were asked.

The 'work climate perception' score of a respondent was calculated by

averaging all of the ratings received from the fifteen questions. Before this was

done, one of the recorded responses had to be reversed, as its associated question

had been phrased in a negative manner. In the end, the higher the calculated mean

score, the higher the perceived level of autonomy support at work. Conversely,

lower scores indicated a controlling environment at work. The cutoff point to

differentiate between a controlling versus an autonomy-supporting environment

was set to an average score of 4.00 in this study. That is, calculated means < 4.00

were reflective of a controlling environment at work. A calculated mean ≥ 4.00

was classified as autonomy-supportive. This calculation methodology was carried

forth and applied to the entire data set received from the 420 respondents. This

established the overall perception of the work climate within the LP business unit,

as viewed by its frontline employees, and offered a glimpse into the generally-

89

perceived style of management that is exercised at the next level within the

organization (i.e., middle management).

Figure 9 summarizes the results of the aggregate analysis. It indicates that

the frontline LP test population mostly views their working environment as

autonomy-supportive (M = 5.48, SD = 1.24). An evaluation of the detailed

frequency table revealed that 12.9% of the respondents (i.e., 54 of 420) had a

mean work climate score < 4.00 (indicating a controlling environment), whereas

87.1% (i.e., 366 of 420) felt it was more autonomy-supportive. As visually

confirmed by the histogram in Figure 9, along with the SPSS-calculated skewness

of the data (-1.33), the distribution of responses was negatively skewed (i.e., left-

tailed). The lowest calculated mean score for work climate perception was 1.20,

and the highest was 7.00.

Statistics	WC_avg
N	420
Mean	5.4835
Std. Error of Mean	.06051
Median	5.8700
Mode	6.00
Std. Deviation	1.24001
Variance	1.538
Skewness	-1.326
Std. Error of Skewness	.119
Kurtosis	1.357
Std. Error of Kurtosis	.238
Range	5.80
Minimum	1.20
Maximum	7.00
Sum	2303.09
Percentiles 25	5.0700
Percentiles 50	5.8700
Percentiles 75	6.3300
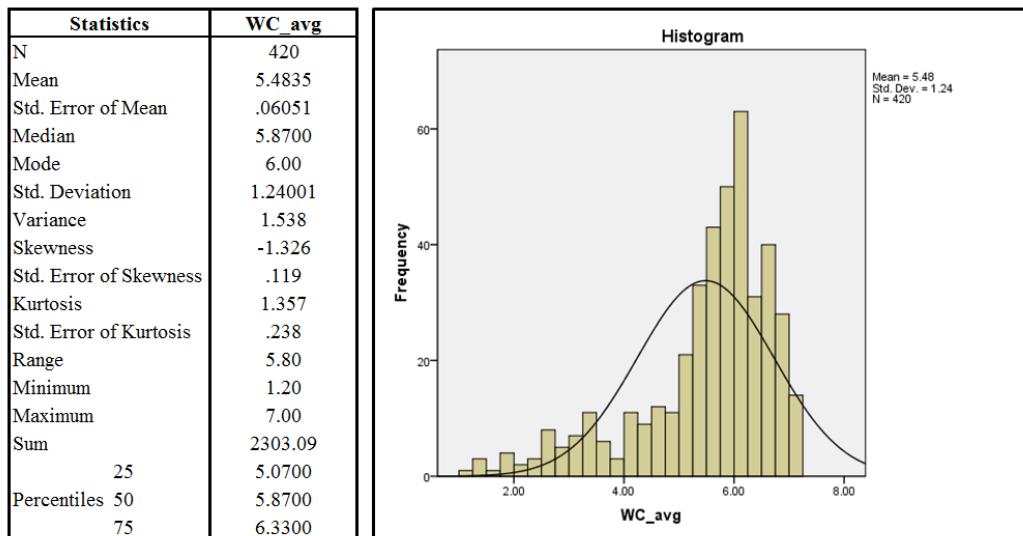
Figure 9. Work Climate Perceptions – LP Business Unit

LP CSR Orientation (CSRO)

The CSR orientation (CSRO) of each participant was measured using the forced-choice format questionnaire developed by Aupperle et al. (1983). This instrument quantified one's attitude towards each of the four components depicted in Carroll's (1979; 1991) CSR representation (i.e., the economic, legal, ethical, and philanthropic dimensions). In essence, it operationalized the beliefs of the individual with regards to how a corporation should prioritize its responsibilities within society.

Each respondent could assign up to 10 points within a set of four statements. A higher number of points allotted to a statement indicated a higher level of agreement. Each statement represented 1 of the 4 dimensions proposed by Carroll in his portrayal of CSR. The respondents repeated this process 15 times on different sets of statements that were laid out in a similar fashion. Allocation of points was strictly restricted to whole amounts within the survey. The respondent also had the option to allocate all 10 points to one statement, if he/she felt that was the most accurate reflection of his/her opinion.

The mean score was calculated, for each CSR dimension, on a per-respondent basis. This quantified the respondent's CSR attitude, as average weightings were established for each of the 4 dimensions proposed by Carroll. Valuable insights into participants' attitudes towards CSR were thus garnered. The same calculation methodology was carried forth and applied to the entire data set received from the 420 respondents. This offered a unique perspective on the CSR orientation of the entire LP business unit at its frontline level.

Figure 10, Figure 11, Figure 12, and Figure 13 summarize the CSRO results of the LP business unit (per each dimension), complete with respective histograms that illustrate noted distributions of the findings.

On an overall basis, frontline employees in the LP business unit had the following mean CSR orientation scores, whose total adds up to 10 points:

CSRO Economic	M = 2.64 (SD = 0.71)
CSRO Legal	M = 2.96 (SD = 0.58)
CSRO Ethical	M = 2.82 (SD = 0.63)
CSRO Philanthropic	M = 1.58 (SD = 0.59)

Statistics	ECO_avg
N	420
Mean	2.6377
Std. Error of Mean	.03470
Median	2.6000
Mode	2.67
Std. Deviation	.71113
Variance	.506
Skewness	.516
Std. Error of Skewness	.119
Kurtosis	1.990
Std. Error of Kurtosis	.238
Range	5.34
Minimum	.13
Maximum	5.47
Sum	1107.82
Percentiles 25	2.2000
50	2.6000
75	3.0000
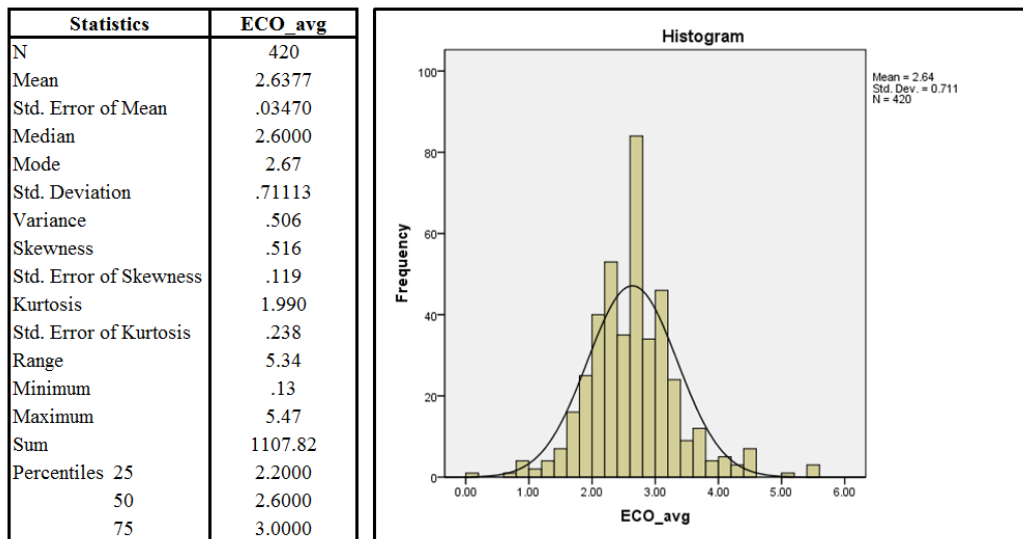
Figure 10. CSRO (Economic) – LP Business Unit

Statistics	LEG_avg
N	420
Mean	2.9586
Std. Error of Mean	.02852
Median	2.9300
Mode	2.93
Std. Deviation	.58453
Variance	.342
Skewness	.455
Std. Error of Skewness	.119
Kurtosis	1.672
Std. Error of Kurtosis	.238
Range	3.94
Minimum	1.13
Maximum	5.07
Sum	1242.63
Percentiles 25	2.6700
50	2.9300
75	3.2525
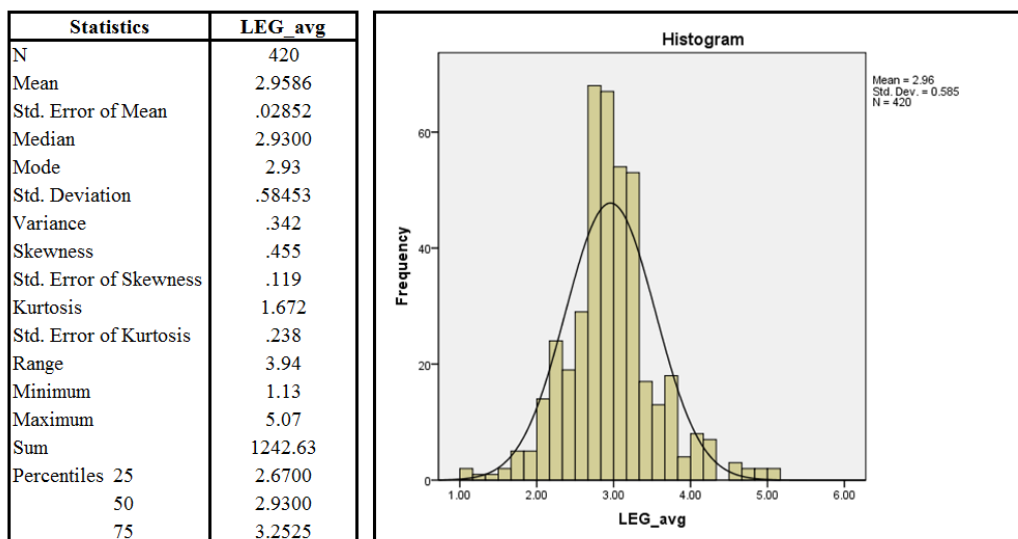
Figure 11. CSRO (Legal) – LP Business Unit

Statistics	ETH_avg
N	420
Mean	2.8231
Std. Error of Mean	.03062
Median	2.8000
Mode	2.93
Std. Deviation	.62753
Variance	.394
Skewness	.523
Std. Error of Skewness	.119
Kurtosis	2.012
Std. Error of Kurtosis	.238
Range	5.20
Minimum	.27
Maximum	5.47
Sum	1185.72
Percentiles 25	2.4700
50	2.8000
75	3.1300
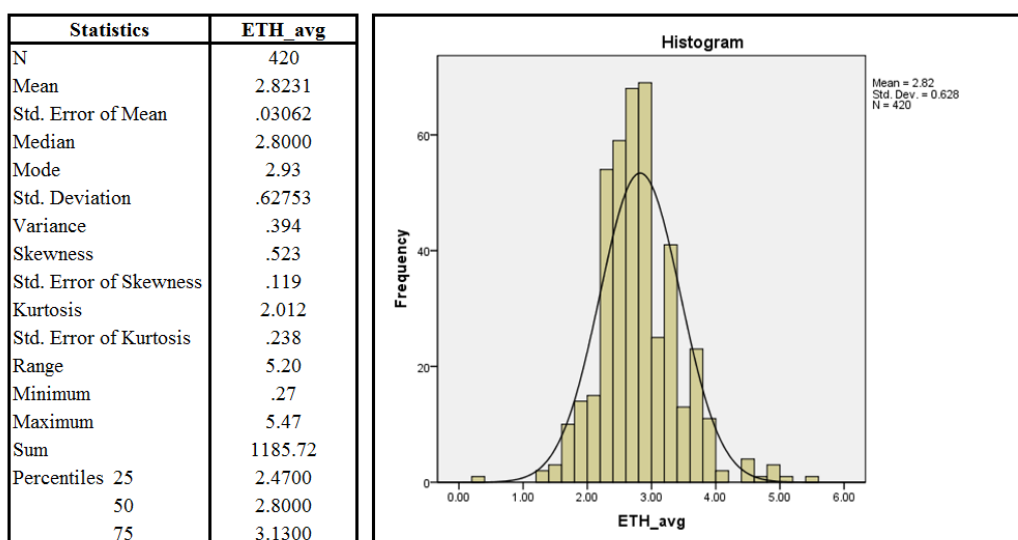
Figure 12. CSRO (Ethical) – LP Business Unit

Statistics	PHI_avg
N	420
Mean	1.5804
Std. Error of Mean	.02902
Median	1.6000
Mode	1.53
Std. Deviation	.59470
Variance	.354
Skewness	.313
Std. Error of Skewness	.119
Kurtosis	1.109
Std. Error of Kurtosis	.238
Range	3.87
Minimum	.00
Maximum	3.87
Sum	663.76
Percentiles 25	1.2000
50	1.6000
75	1.9300
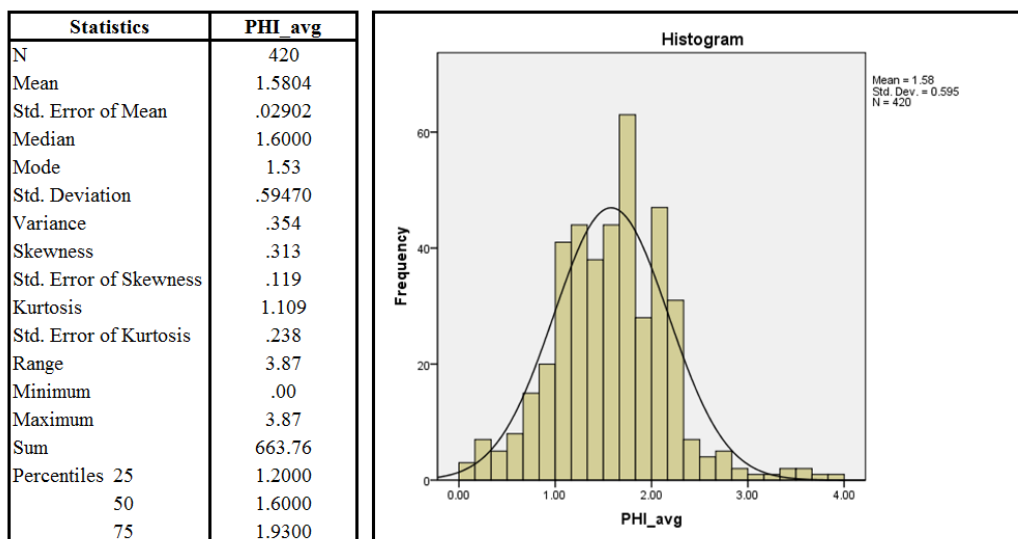
Figure 13. CSRO (Philanthropic) – LP Business Unit

Looking at the dimensions individually, it is apparent that Enbridge's frontline LP employees consider the legal responsibilities of the corporation to be the most important dimension to manage (M = 2.96, SD = 0.58). Nearly as important were the perceived ethical responsibilities the firm had to society (M = 2.82, SD = 0.63). Interestingly, the economic responsibilities of the firm, as viewed by this cluster of frontline personnel, were ranked third (M = 2.64, SD = 0.71). The final dimension, philanthropic-based responsibilities, were given the least amount of emphasis by the LP test population (M = 1.58, SD = 0.59). Although not a part of the scope of this research, it would be interesting to compare these findings (rankings) with other frontline personnel scattered across different Enbridge Inc. business units, as well as to other frontline employees active within the same industry, or even across different extraction-based industries.

94

The results can also be examined in a slightly different manner, as described by Aupperle et al. (1985). Firstly, the economic component can be looked at on its own, and can generally be connected to a concern with increasing profits and returns (i.e., the shareholder perspective or "concern for economic performance"). Alternatively, emphasizing the "concerns of society" (i.e., the stakeholder perspective) can be quantified by the summation of Carroll's non-economic dimensions (i.e., legal, ethical, and philanthropic). Assessment of the results in this manner depicts an emphasis towards the societally-based dimension (i.e., 7.36 of the available 10 points). In Carroll's (1979) original representation, this same socially-based proportion was 6.00 points (i.e., 4 points [economic] vs. 3 points [legal] + 2 points [ethical] + 1 point [philanthropic]). The findings from the Aupperle et al. (1985) study, reflective of a sampling of CEO opinions towards CSR in 1981, approximated each of Carroll's relative weightings, with a "concern for society" score of 6.06 out of 10 points (i.e., 3.50 points [economic] vs. 2.54 points [legal] + 2.22 points [ethical] + 1.30 points [philanthropic]). Although the current study confirmed the existence of the same four interconnected, inversely-correlated CSR dimensions proposed by Carroll and quantified by Aupperle, it appears that the expressed opinions of this test population are considerably more interested in the "concern for society" grouping, with a more elevated ethical and philanthropic emphasis, as compared to the two founding representations.

This calculation approach was carried forth and utilized to determine the CSRO profiles of identified employee sub-groups to be examined within each of

the five hypotheses of the study. Table 7 summarizes these descriptive statistics

and organizes them based on applicable hypothesis. Hypotheses P1–P3 needed to

be 'broken down' further based on work climate perceptions offered by the

employee sub-groups shown. This was done in the upcoming section of this

chapter. CSRO profiles were then compared against each other statistically, as

defined within the context of each hypothesis, to establish whether or not

significant differences existed amongst the noted employee sub-groups. It should

be noted that mean CSRO scores alone (i.e., from the forced-choice

questionnaire) were not directly compared across groups of subjects.

Table 7. CSRO Profiles for P1–P5

CSRO and the Workplace						
Study Hypothesis	**Demographic Group of Interest**	**n**	**CSRO (Means & Standard Deviations)**			
			Economic	**Legal**	**Ethical**	**Philanthropic**
P1	All Frontline Personnel	420	2.64 (0.71)	2.96 (0.58)	2.82 (0.63)	1.58 (0.59)
P2(a) *Performance Review Approach*	Frontline Supervisors Frontline Employees	158 262 420	2.65 (0.65) 2.63 (0.75)	3.02 (0.56) 2.92 (0.60)	2.78 (0.58) 2.85 (0.65)	1.55 (0.56) 1.60 (0.61)
P2(b) *Job Function Approach*	Frontline Supervisors Frontline Employees [1]	100 320 420	2.73 (0.60) 2.61 (0.74)	3.09 (0.56) 2.92 (0.59)	2.73 (0.57) 2.85 (0.64)	1.45 (0.52) 1.62 (0.61)
P3	Office Personnel Field Personnel	274 146 420	2.59 (0.74) 2.72 (0.65)	2.92 (0.58) 3.04 (0.59)	2.89 (0.64) 2.70 (0.58)	1.60 (0.60) 1.54 (0.59)
CSRO and the Individual						
P4	Basic Education Technical Education Academic Education	32 123 265 420	2.60 (0.58) 2.65 (0.70) 2.64 (0.73)	3.16 (0.58) 2.91 (0.57) 2.96 (0.59)	2.76 (0.56) 2.82 (0.69) 2.83 (0.61)	1.49 (0.51) 1.63 (0.57) 1.57 (0.62)
P5	Baby Boomer or Earlier Gen-X Millennial	178 176 66 420	2.65 (0.69) 2.70 (0.71) 2.45 (0.73)	3.01 (0.57) 2.97 (0.61) 2.78 (0.51)	2.78 (0.55) 2.80 (0.72) 3.00 (0.51)	1.56 (0.60) 1.53 (0.57) 1.77 (0.63)

[1] *Collective survey replies of all administrative/clerical, professional/specialist and production/service team (frontline) personnel*

Table 8 summarizes the CSRO profiles (i.e., key descriptive statistics)

connected to the remaining demographic variables that were collected, but not

referenced in the hypothesis tests of the study. Together, Table 7 and Table 8 paint a vivid picture of the diverse, and often contrasting, perspectives Enbridge's LP frontline personnel have regarding the CSR construct (i.e., as it was operationalized in this research study). The relevant SPSS-generated output, used to assemble both Table 7 and Table 8, has been included in Appendix M for referral purposes.

Table 8. CSRO Profiles for Non-Hypothesis Variables

Additional CSRO Profiles						
Study Hypothesis	Demographic Group of Interest	n	CSRO (Means & Standard Deviations)			
			Economic	Legal	Ethical	Philanthropic
	Country					
n/a	Canada	305	2.59 (0.72)	2.95 (0.58)	2.87 (0.64)	1.60 (0.58)
	U.S.A.	115	2.76 (0.67)	2.99 (0.60)	2.71 (0.57)	1.54 (0.63)
		420				
	Job Function					
	Administrative/Clerical	37	2.22 (0.55)	2.86 (0.64)	3.03 (0.63)	1.88 (0.65)
n/a	Frontline Employee	106	2.67 (0.69)	2.86 (0.56)	2.84 (0.71)	1.63 (0.60)
	Professional/Specialist	177	2.65 (0.79)	2.96 (0.59)	2.82 (0.60)	1.56 (0.60)
	Supervisory	100	2.73 (0.60)	3.09 (0.56)	2.73 (0.57)	1.45 (0.52)
		420				
	Tenure					
	< 2 years	62	2.48 (0.62)	2.81 (0.52)	2.89 (0.48)	1.82 (0.61)
	2 - 5 years	191	2.59 (0.72)	2.94 (0.56)	2.91 (0.67)	1.56 (0.58)
n/a	6 - 10 years	55	2.78 (0.69)	2.99 (0.59)	2.76 (0.58)	1.47 (0.62)
	11 - 20 years	59	2.77 (0.77)	2.97 (0.63)	2.61 (0.59)	1.65 (0.61)
	≥ 21 years	53	2.70 (0.71)	3.16 (0.66)	2.74 (0.65)	1.40 (0.52)
		420				
	Gender					
n/a	Female	131	2.39 (0.58)	2.94 (0.56)	2.94 (0.55)	1.73 (0.55)
	Male	289	2.75 (0.74)	2.97 (0.59)	2.77 (0.65)	1.51 (0.60)
		420				

CSRO Profiles Based on WC Perception (P1 – P3)

For hypotheses P1, P2, and P3 to be properly assessed, the employee sub-groups (i.e., the demographic group of interest) connected to each hypothesis had to be further differentiated based on noted perceptions of the work climate (WC). That is, the number of individuals who viewed the workplace as either controlling or autonomy-supporting had to be established. Associated CSRO descriptive

statistics were then calculated for each newly-established cluster (i.e., based on WC perception). CSRO profiles of these clusters were then compared against each other, as defined within the context of each hypothesis, to establish whether or not significant statistical differences existed amongst them.

As discussed earlier, a mean score for WC that was < 4.00 in this study was reflective of a controlling environment at work. A calculated WC average of ≥ 4.00 was classified as an autonomy-supportive workplace. This demarcation was once again used, for consistency purposes, to differentiate the employees into 'WC-based' sub-groups within each hypothesis.

The CSRO replies of the entire LP business unit (i.e., all frontline personnel), demarcated by work climate perception, are called upon in assessing the first hypothesis (P1). The CSRO replies of supervisors and employees, as they are uniquely differentiated in P2(a) and P2(b), and as demarcated by work climate perception, are referred to in assessing the second set of hypotheses. Similarly, the CSRO replies of office- and field-based personnel, delineated by work climate perception, are used for P3. Table 9 depicts these noted breakdowns and their accompanying CSRO descriptive statistics.

Table 9. CSRO Profiles Based on WC Perception (P1–P3)

CSRO and the Workplace					CSRO (Means & Standard Deviations)			
Study Hypothesis	Workplace Climate Perception	Demographic Group of Interest	n	Economic	Legal	Ethical	Philanthropic
P1	Controlling[1]	All Frontline Personnel	54	2.52 (0.75)	2.99 (0.74)	2.94 (0.73)	1.55 (0.61)
	Autonomy-Supportive[2]	All Frontline Personnel	366	2.66 (0.71)	2.95 (0.56)	2.81 (0.61)	1.59 (0.59)
			420				
P2(a) Performance Review Approach	Controlling[1]	Frontline Supervisors	17	2.51 (0.90)	2.94 (0.73)	2.89 (0.52)	1.65 (0.47)
	Controlling[1]	Frontline Employees	37	2.52 (0.67)	3.01 (0.76)	2.97 (0.82)	1.50 (0.67)
			54				
	Autonomy-Supportive[2]	Frontline Supervisors	141	2.66 (0.62)	3.03 (0.54)	2.77 (0.59)	1.54 (0.57)
	Autonomy-Supportive[2]	Frontline Employees	225	2.65 (0.76)	2.91 (0.56)	2.83 (0.62)	1.62 (0.60)
			366				
P2(b) Job Function Approach	Controlling[1]	Frontline Supervisors	8	2.77 (1.27)	3.05 (0.87)	2.72 (0.59)	1.45 (0.48)
	Controlling[1]	Frontline Employees[3]	46	2.47 (0.63)	2.98 (0.73)	2.98 (0.76)	1.57 (0.64)
			54				
	Autonomy-Supportive[2]	Frontline Supervisors	92	2.72 (0.52)	3.09 (0.53)	2.73 (0.57)	1.45 (0.52)
	Autonomy-Supportive[2]	Frontline Employees[3]	274	2.63 (0.76)	2.91 (0.56)	2.83 (0.62)	1.63 (0.61)
			366				
P3	Controlling[1]	Office Personnel	32	2.52 (0.82)	2.86 (0.79)	3.08 (0.76)	1.54 (0.57)
	Controlling[1]	Field Personnel	22	2.52 (0.65)	3.17 (0.65)	2.75 (0.66)	1.56 (0.69)
			54				
	Autonomy-Supportive[2]	Office Personnel	242	2.60 (0.73)	2.92 (0.55)	2.86 (0.62)	1.61 (0.60)
	Autonomy-Supportive[2]	Field Personnel	124	2.76 (0.65)	3.01 (0.58)	2.69 (0.57)	1.54 (0.58)
			366				

[1] Based on an average score < 4.00 on the Work Climate Questionnaire
[2] Based on an average score ≥ 4.00 on the Work Climate Questionnaire
[3] Collective survey replies of all administrative/clerical, professional/specialist and production/service team (frontline) personnel

Hypothesis Testing (P1–P3)

Hypotheses P1, P2(a), P2(b), and P3 (i.e., those related to "CSRO and the Workplace") are founded upon the idea that a direct relationship exists between an individual's perception of his/her work climate (an independent variable) and his/her respective CSRO (a dependent variable).

The entire frontline test population of the LP business unit was assessed in the first hypothesis (P1). A one-way analysis of variance (ANOVA) was carried out to determine whether CSROs were significantly different between frontline personnel viewing the workplace as controlling, versus those viewing it as autonomy-supporting.

An analysis of variance tests whether the means of different groups are the same (e.g., whether the means of the CSROs in the autonomy-supporting group are the same as those in the controlling group), and determines how observed variance in a variable can be attributed to other variables. There are three assumptions with the analysis of variance approach: the samples (i.e., groups) are normally distributed (i.e., "normality"), the individual observations are independent of one another (i.e., "independence") and the variance of each sample (i.e., group) is the same (i.e., "homogeneity of variance"). Normality and independence tests were not performed on any of the test data in any of the hypotheses. Homogeneity of variance of the test data, per hypothesis, was confirmed using Levene's Test, the Brown-Forsythe Test, or both. SPSS results from these tests confirmed that, for the most part, the homogeneity of variance assumption was not violated in all of the hypotheses being assessed (i.e., at the α

100

= 0.05 significance level). In those limited instances where the assumption was violated, no subsequent statistical testing (e.g. weighted least squares, variance stabilizing transformations, or the application of other tests) was performed.

Hypotheses P2(a), P2(b), and P3 further demarcated the frontline test population from hypothesis P1 into distinct, hypothesis-relevant sub-groups to test the same proposed relationship (i.e., that a direct relationship exists between work climate perception and CSRO). The following splits of the test population were necessary for proper comparative analyses to be conducted:

- P2(a): *Comparing Supervisors vs. Employees - Performance Review Approach*
    - Controlling (Frontline Supervisors)
    - Controlling (Frontline Employees)
    - Autonomy-Supportive (Frontline Supervisors)
    - Autonomy-Supportive (Frontline Employees)

- P2(b): *Comparing Supervisors vs. Employees - Job Function Approach*
    - Controlling (Frontline Supervisors)
    - Controlling (Frontline Employees)
    - Autonomy-Supportive (Frontline Supervisors)
    - Autonomy-Supportive (Frontline Employees)

- P3: *Comparing Personnel Based on Worksite Location*
    - Controlling (Office Personnel)
    - Controlling (Field Personnel)
    - Autonomy-Supportive (Office Personnel)
    - Autonomy-Supportive (Field Personnel)

As a result of these test population 'drilldowns,' each of these hypotheses was appropriately assessed using a two-way (2x2), between-subjects analysis of variance (ANOVA) approach.

A summary analysis of the comparisons of means (i.e., ANOVA findings) for hypotheses P1, P2(a), P2(b), and P3 can be found in Table 10, along with

respective statistical interpretations. That is, the analysis shows whether the

ANOVA findings were seen to be statistically significant to support the proposed

hypothesis (or not). Statistical significance simply means that there is a big

enough difference between the compared distributions to indicate that the result

was probably due to a real effect and not just chance. The notation $\alpha = 0.05$ (i.e.,

the significance level that was established for this research) denotes that the

likelihood is the result was due to chance is less than 5%. If a significance test

yields a p-value that is lower than the significance level α, then the null

hypothesis that there is no relationship between two measured factors is rejected.

Conversely, if $p > \alpha$, then it is within the accepted likelihood that there is no

relationship between the factors. For each hypothesis, the calculated p-value is

followed by the notation "ns" if there is no statistical significance. Relevant

SPSS-generated statistics for P1 to P3, complete with ANOVA results, are

included in Appendix N for reference.

Analysis and interpretation of the summarized results in Table 10 prompts

the conclusion that there is no statistical significance to support any of the

hypotheses (i.e., P1, P2[a], P2[b], and P3) at $\alpha = 0.05$. This finding was consistent

and applicable to each CSRO dimension that was assessed (i.e., economic, legal,

ethical, or philanthropic) within each of the hypotheses.

To complete the observed results in this section, each hypothesis is re-

stated, along with its noted statistical (ANOVA) findings and associated

interpretation.

Table 10. ANOVA Results (P1–P3)

Study Hypothesis	Workplace Climate Perception	Demographic Group of Interest	n	CSRO (Means & Standard Deviations)			
				Economic	Legal	Ethical	Philanthropic
CSRO and the Workplace							
P1	Controlling[1]	All Frontline Personnel	54	2.52 (0.75)	2.99 (0.74)	2.94 (0.73)	1.55 (0.61)
	Autonomy-Supportive[2]	All Frontline Personnel	366	2.66 (0.71)	2.95 (0.56)	2.81 (0.61)	1.59 (0.59)
			420				
ONE-WAY ANOVA RESULTS				$F_{(1,418)} = 1.73$ $p = 0.19$ ns	$F_{(1,418)} = 0.15$ $p = 0.70$ ns	$F_{(1,418)} = 2.30$ $p = 0.13$ ns	$F_{(1,418)} = 0.18$ $p = 0.67$ ns
P2(a) *Performance Review Approach*	Controlling[1]	Frontline Supervisors	17	2.51 (0.90)	2.94 (0.73)	2.89 (0.52)	1.65 (0.47)
	Controlling[1]	Frontline Employees	37	2.52 (0.67)	3.01 (0.76)	2.97 (0.82)	1.50 (0.67)
			54				
	Autonomy-Supportive[2]	Frontline Supervisors	141	2.66 (0.62)	3.03 (0.54)	2.77 (0.59)	1.54 (0.57)
	Autonomy-Supportive[2]	Frontline Employees	225	2.65 (0.76)	2.91 (0.56)	2.83 (0.62)	1.62 (0.60)
			366				
TWO-WAY (2x2) BETWEEN-SUBJECTS ANOVA RESULTS				$F_{(1,416)} = 0.01$ $p = 0.91$ ns	$F_{(1,416)} = 1.06$ $p = 0.30$ ns	$F_{(1,416)} = 0.02$ $p = 0.89$ ns	$F_{(1,416)} = 1.61$ $p = 0.21$ ns
P2(b) *Job Function Approach*	Controlling[1]	Frontline Supervisors	8	2.77 (1.27)	3.05 (0.87)	2.72 (0.59)	1.45 (0.48)
	Controlling[1]	Frontline Employees[3]	46	2.47 (0.63)	2.98 (0.73)	2.98 (0.76)	1.57 (0.64)
			54				
	Autonomy-Supportive[2]	Frontline Supervisors	92	2.72 (0.52)	3.09 (0.53)	2.73 (0.57)	1.45 (0.52)
	Autonomy-Supportive[2]	Frontline Employees[3]	274	2.63 (0.76)	2.91 (0.56)	2.83 (0.62)	1.63 (0.61)
			366				
TWO-WAY (2x2) BETWEEN-SUBJECTS ANOVA RESULTS				$F_{(1,416)} = 0.54$ $p = 0.46$ ns	$F_{(1,416)} = 0.25$ $p = 0.62$ ns	$F_{(1,416)} = 0.40$ $p = 0.53$ ns	$F_{(1,416)} = 0.07$ $p = 0.80$ ns
P3	Controlling[1]	Office Personnel	32	2.52 (0.82)	2.86 (0.79)	3.08 (0.76)	1.54 (0.57)
	Controlling[1]	Field Personnel	22	2.52 (0.65)	3.17 (0.65)	2.75 (0.66)	1.56 (0.69)
			54				
	Autonomy-Supportive[2]	Office Personnel	242	2.60 (0.73)	2.92 (0.55)	2.86 (0.62)	1.61 (0.60)
	Autonomy-Supportive[2]	Field Personnel	124	2.76 (0.65)	3.01 (0.58)	2.69 (0.57)	1.54 (0.58)
			366				
TWO-WAY (2x2) BETWEEN-SUBJECTS ANOVA RESULTS				$F_{(1,416)} = 0.56$ $p = 0.45$ ns	$F_{(1,416)} = 1.65$ $p = 0.20$ ns	$F_{(1,416)} = 0.67$ $p = 0.42$ ns	$F_{(1,416)} = 0.24$ $p = 0.63$ ns

[1] *Based on an average score < 4.00 on the Work Climate Questionnaire*
[2] *Based on an average score ≥ 4.00 on the Work Climate Questionnaire*
[3] *Collective survey replies of all administrative/clerical, professional/specialist and production/service team (frontline) personnel*

CSRO and the Workplace: Statistical Results

Hypothesis P1: The attitude of frontline personnel towards CSR is related to their

perception of the workplace climate.

Findings:	CSRO $_{Economic}$	$F(1,418) = 1.73$, $p = 0.19$, ns
	CSRO $_{Legal}$	$F(1,418) = 0.15$, $p = 0.70$, ns
	CSRO $_{Ethical}$	$F(1,418) = 2.30$, $p = 0.13$, ns
	CSRO $_{Philanthropic}$	$F(1,418) = 0.18$, $p = 0.67$, ns

Interpretation: There is *no statistical significance* to support P1 at α=0.05, for

each CSRO dimension (i.e., P1 is not supported).

Hypothesis P2: A difference exists in the CSR attitude of frontline supervisors as

compared to frontline employees, which is driven by their respective workplace

climate perception.

(a) Performance Review Approach

Findings:	CSRO $_{Economic}$	$F(1,416) = 0.01$, $p = 0.91$, ns
	CSRO $_{Legal}$	$F(1,416) = 1.06$, $p = 0.30$, ns
	CSRO $_{Ethical}$	$F(1,416) = 0.02$, $p = 0.89$, ns
	CSRO $_{Philanthropic}$	$F(1,416) = 1.61$, $p = 0.21$, ns

Interpretation: There is *no statistical significance* to support P2(a) at α=0.05 for

each CSRO dimension (i.e., P2[a] is not supported).

(b) Job Function Approach

Findings: CSRO $_{Economic}$ $F(1,416) = 0.54, p = 0.46$, ns

CSRO $_{Legal}$ $F(1,416) = 0.25, p = 0.62$, ns

CSRO $_{Ethical}$ $F(1,416) = 0.40, p = 0.53$, ns

CSRO $_{Philanthropic}$ $F(1,416) = 0.07, p = 0.80$, ns

Interpretation: There is ***no statistical significance*** to support P2(b) at α=0.05, for

each CSRO dimension (i.e., P2[b] is not supported).

Hypothesis P3: A difference exists in the CSR attitude of office-based personnel

as compared to field-based personnel, which is driven by their respective work

climate perception.

Findings: CSRO $_{Economic}$ $F(1,416) = 0.56, p = 0.45$, ns

CSRO $_{Legal}$ $F(1,416) = 1.65, p = 0.20$, ns

CSRO $_{Ethical}$ $F(1,416) = 0.67, p = 0.42$, ns

CSRO $_{Philanthropic}$ $F(1,416) = 0.24, p = 0.63$, ns

Interpretation: There is ***no statistical significance*** to support P3 at α=0.05 for

each CSRO dimension (i.e., P3 is not supported).

Hypothesis Testing (P4–P5)

Hypotheses P4 and P5 (i.e., those related to "CSRO and the Individual")

explored whether education level (i.e., basic, technical, or academic) and age (as

categorized into the Baby Boomer, Gen-X, or Millennial generational groups)

impacted individual CSR orientations at the frontline level of the LP business unit

at Enbridge. The independent variables were education level and age, while noted CSROs were reflective of the dependent variable in these proposed relationships.

As can be inferred, the entire frontline test population of the LP business unit was assessed in both P4 and P5. A one-way analysis of variance (ANOVA) was called upon once again to determine whether noted CSROs were significantly different amongst the education levels being examined in P4, as well as between the generations being assessed in P5.

Like the analyses of P1–P3, ANOVA normality and independence confirmation tests were not performed for P4 or P5. However, homogeneity of variance of the test data (for each hypothesis) was tested and evaluated using Levene's Test and the Brown-Forsythe Test, in each case. SPSS results from these tests confirmed that, for the most part, the homogeneity of variance assumption was not violated in either assessed hypothesis (i.e., at $\alpha = 0.05$). In those instances where the assumption was breached, once again, no subsequent statistical testing (e.g., weighted least squares, variance stabilizing transformations, or the application of other tests) was undertaken.

A summary analysis of the comparisons of means (i.e., the ANOVA findings) for hypotheses P4 and P5 can be found in Table 11, along with respective, statistical interpretations. That is, the summary shows whether the ANOVA findings were seen to be statistically significant to support the proposed hypothesis or not. For each hypothesis, the calculated p-value is followed by the notation "ns" if there is no statistical significance. Relevant SPSS-generated statistics for P4 and P5 and their ANOVA results are shown in Appendix O.

106

Table 11. ANOVA Results (P4–P5)

Study Hypothesis	Demographic Group of Interest	n	CSRO and the Individual — CSRO (Means & Standard Deviations)			
			Economic	Legal	Ethical	Philanthropic
P4	**All Frontline Personnel**					
	Basic Education[1]	32	2.60 (0.58)	3.16 (0.58)	2.76 (0.56)	1.49 (0.51)
	Technical Education[2]	123	2.65 (0.70)	2.91 (0.57)	2.82 (0.69)	1.63 (0.57)
	Academic Education[3]	265	2.64 (0.73)	2.96 (0.59)	2.83 (0.61)	1.57 (0.62)
		420				
	ONE-WAY ANOVA RESULTS		$F_{(2,417)}=0.07$ p = 0.93 ns	$F_{(2,417)}=2.34$ p = 0.10 ns	$F_{(2,417)}=0.22$ p = 0.80 ns	$F_{(2,417)}=0.80$ p = 0.45 ns
P5	**All Frontline Personnel**					
	Baby Boomer or Earlier[4]	178	2.65 (0.69)	3.01 (0.57)	2.78 (0.55)	1.56 (0.60)
	Gen-X[5]	176	2.70 (0.71)	2.97 (0.61)	2.80 (0.72)	1.53 (0.57)
	Millennial[6]	66	2.45 (0.73)	2.78 (0.51)	3.00 (0.51)	1.77 (0.63)
		420				
	ONE-WAY ANOVA RESULTS		$F_{(2,417)}=3.07$ p = 0.05 significant	$F_{(2,417)}=3.84$ p = 0.02 significant	$F_{(2,417)}=3.15$ p = 0.04 significant	$F_{(2,417)}=4.34$ p = 0.01 significant
	POST-HOC ANALYSIS		Gen-X / Millennial p = 0.04	Baby-Boomer / Millennial p = 0.02	Baby-Boomer / Millennial p = 0.04	Baby-Boomer / Millennial p = 0.04 Gen-X / Millennial p = 0.01

[1] *High school or less*
[2] *Apprenticeship program, trade school, technical institute, etc.*
[3] *College, university, etc.*
[4] *Birth year between 1946 and 1965 (plus two pre-1946 replies)*
[5] *Birth year between 1966 and 1980*
[6] *Birth year of 1981 or later*

The summarized results in Table 11 lead to the conclusion that there is no statistical significance to support hypothesis P4 at the set significance level (α = 0.05). This finding was consistent and applicable to each CSRO dimension that was assessed (i.e., economic, legal, ethical, or philanthropic) within hypothesis P4.

Conversely, the statistical results (see Table 11) associated with hypothesis P5 show that there is ample statistical significance to support P5 at α = 0.05 for each CSRO dimension. That is, frontline personnel of different generational cohorts (at least, in this test population) seem to place a different emphasis (i.e., importance) on each of the four CSR aspects a corporation is deemed responsible for. Baby Boomers and Gen-Xers regarded the legal dimension as the most important in their respective weightings, whereas Millennials considered the ethical dimension to be the most vital. Further, the economic responsibilities of the firm were emphasized more by Gen-Xers and Baby Boomers than their Millennial counterparts. The opposite emphasis was observed regarding perceived philanthropic responsibilities, as Millennials placed far more importance on this dimension than Gen-Xers and Baby Boomers. The mean scores associated with the philanthropic dimension were the most varied, statistically, of the weightings within each of the four CSR dimensions examined (p = 0.01). This was followed closely by the differences in opinion connected to the legal responsibilities of the firm (p = 0.02).

To better understand which generational groups were driving the differences within each CSR dimension, a post-hoc analysis on the findings of

hypothesis P5 was conducted using Bonferroni correction. This correction allows multiple hypotheses to be tested on a single set of data. For n hypotheses with a desired overall significance level for the whole group of tests not greater than α, the Bonferroni correction approach is to conduct each of the individual tests at a significance level of α/n. The correction was run on each CSRO dimension in P5, with $\alpha = 0.05$, to establish which sub-group means were significantly different from each other. Detailed post-hoc test results (using Bonferroni correction) for each CSR dimension of hypothesis P5 are included for reference in Appendix O. Table 11 goes on to summarize the post-hoc analyses, and specifically identifies which generational mean scores were driving the differences within the ANOVA findings. The following generational group means (M) varied the most against each other, on a CSR dimensional basis and from a post-hoc analysis perspective:

$CSRO_{Economic}$ $(p = 0.04)$ Millennial (2.45) vs Gen-X (2.70)

$CSRO_{Legal}$ $(p = 0.02)$ Millennial (2.78) vs Baby Boomer (3.01)

$CSRO_{Ethical}$ $(p = 0.04)$ Millennial (3.00) vs Baby Boomer (2.78)

$CSRO_{Philanthropic}$ $(p = 0.04)$ Millennial (1.77) vs Baby Boomer (1.56)

$CSRO_{Philanthropic}$ $(p = 0.01)$ Millennial (1.77) vs Gen-X (1.53)

It is readily apparent that Millennials in this test population have a different opinion than their Gen-X and Baby Boomer coworkers regarding where Enbridge should be focusing its current CSR efforts. Along with this, Gen-Xers and Baby Boomers in this test population seemed to reveal a fairly consistent position with respect to the social responsibilities of the corporation.

109

To conclude the observed results in this section, each hypothesis is re-stated along with its noted statistical (ANOVA) findings and associated interpretation.

CSRO and the Individual: Statistical Results

Hypothesis P4: The CSR attitude of frontline personnel is related to one's respective level of education.

Findings:	CSRO $_{Economic}$	$F (2,417) = 0.07$, $p = 0.93$, ns
	CSRO $_{Legal}$	$F (2,417) = 2.34$, $p = 0.10$, ns
	CSRO $_{Ethical}$	$F (2,417) = 0.22$, $p = 0.80$, ns
	CSRO $_{Philanthropic}$	$F (2,417) = 0.80$, $p = 0.45$, ns

Interpretation: There is *no statistical significance* to support P4 at $\alpha = 0.05$ for each CSRO dimension (i.e., P4 is not supported).

Hypothesis P5: The CSR attitude of frontline personnel is related to one's respective age (i.e., generational demographic).

Findings:	CSRO $_{Economic}$	$F (2,417) = 3.07$, $p = 0.05$, **significant**
	CSRO $_{Legal}$	$F (2,417) = 3.84$, $p = 0.02$, **significant**
	CSRO $_{Ethical}$	$F (2,417) = 3.15$, $p = 0.04$, **significant**
	CSRO $_{Philanthropic}$	$F (2,417) = 4.34$, $p = 0.01$, **significant**

Interpretation: *There is statistical significance* to support P5 at $\alpha = 0.05$, for each CSRO dimension (i.e., P5 is supported).

110

Extended Analyses

The first extended analysis involved the evaluation of the various CSR orientations resident within the test population, as differentiated by the demographic variables that were collected. The intent was to further understand what other independent variables had the potential to directly impact an individual's CSRO. The independent variables of interest in this assessment were all of the demographic variables collected, excluding education level and age, as these were addressed in P4 and P5, respectively. The demographic variables utilized in P1 to P3 were included in this exercise to establish if they themselves (as stand-alone variables) could influence CSRO (i.e., without factoring in the influence work climate perceptions may have on the proposed relationship to CSRO).

A one-way analysis of variance (ANOVA), with $\alpha = 0.05$, was performed to determine whether the observed CSROs were significantly different amongst the sub-groups within each demographic variable collected. Where merited, a post-hoc analysis on the findings was conducted using Bonferroni correction ($\alpha = 0.05$) to determine which sub-groups were driving the observed differences.

Table 12 summarizes the findings of this extended CSRO analysis. Statistically significant differences between sub-groups, as per the ANOVA findings for each CSR dimension, are highlighted within the table. Post-hoc analysis results, for situations where more than two sub-groups are present, are also summarized and highlighted within the table to distinguish where the variability in opinions lies.

111

Table 12. Additional CSRO Profiles and Comparisons

Additional CSRO Profiles (c/w ANOVA Results & Post-Hoc Findings at α = 0.05)					
Demographic Group of Interest	**n**	**CSRO (Means & Standard Deviations)**			
		Economic	**Legal**	**Ethical**	**Philanthropic**
Country					
Canada	305	**2.59 (0.72)**	2.95 (0.58)	**2.87 (0.64)**	1.60 (0.58)
U.S.A.	115	**2.76 (0.67)**	2.99 (0.60)	**2.71 (0.57)**	1.54 (0.63)
		$F_{(1,418)} = 4.92$	$F_{(1,418)} = 0.49$	$F_{(1,418)} = 5.20$	$F_{(1,418)} = 0.88$
		$p = 0.03$	$p = 0.48 (ns)$	$p = 0.02$	$p = 0.35 (ns)$
Worksite					
Office Personnel	274	2.59 (0.74)	**2.92 (0.58)**	**2.89 (0.64)**	1.60 (0.60)
Field Personnel	146	2.72 (0.65)	**3.04 (0.59)**	**2.70 (0.58)**	1.54 (0.59)
		$F_{(1,418)} = 3.29$	$F_{(1,418)} = 3.96$	$F_{(1,418)} = 8.93$	$F_{(1,418)} = 0.96$
		$p = 0.07 (ns)$	$p = 0.05$	$p = 0.00$	$p = 0.33 (ns)$
People Leadership					
Frontline Supervisors	158	2.65 (0.65)	3.02 (0.56)	2.78 (0.58)	1.55 (0.56)
Frontline Employees	262	2.63 (0.75)	2.92 (0.60)	2.85 (0.65)	1.60 (0.61)
		$F_{(1,418)} = 0.03$	$F_{(1,418)} = 2.87$	$F_{(1,418)} = 0.95$	$F_{(1,418)} = 0.71$
(based on Perf. Reviews)		$p = 0.87 (ns)$	$p = 0.09 (ns)$	$p = 0.33 (ns)$	$p = 0.40 (ns)$
Job Function					
Administrative/Clerical	37	→ **2.22 (0.55)**	2.86 (0.64)	3.03 (0.63)	→ **1.88 (0.65)**
Frontline Employee	106	**2.67 (0.69)** ←	→ **2.86 (0.56)**	2.84 (0.71)	1.63 (0.60)
Professional/Specialist	177	**2.65 (0.79)** ←	2.96 (0.59)	2.82 (0.60)	**1.56 (0.60)** ←
Supervisory	100	**2.73 (0.60)** ←	**3.09 (0.56)** ←	2.73 (0.57)	**1.45 (0.52)** ←
		$F_{(3,416)} = 5.01$	$F_{(3,416)} = 3.11$	$F_{(3,416)} = 2.13$	$F_{(3,416)} = 5.27$
		$p = 0.00$	$p = 0.03$	$p = 0.10 (ns)$	$p = 0.00$
		Admin v FLE (p = 0.01)	FLE v Supv (p = 0.03)		Admin v P/S (p = 0.01)
		Admin v P/S (p = 0.00)			Admin v Supv (p = 0.00)
		Admin v Supv (p = 0.00)			
People Leadership					
Frontline Supervisors	100	2.73 (0.60)	**3.09 (0.56)**	2.73 (0.57)	**1.45 (0.52)**
Frontline Employees	320	2.61 (0.74)	**2.92 (0.59)**	2.85 (0.64)	**1.62 (0.61)**
		$F_{(1,418)} = 2.04$	$F_{(1,418)} = 6.75$	$F_{(1,418)} = 2.87$	$F_{(1,418)} = 6.16$
(based on Job Funtion)		$p = 0.15 (ns)$	$p = 0.01$	$p = 0.09 (ns)$	$p = 0.01$
Tenure at Enbridge					
< 2 years	62	2.48 (0.62)	→ **2.81 (0.52)**	2.89 (0.48)	→ **1.82 (0.61)**
2 - 5 years	191	2.59 (0.72)	2.94 (0.56)	→ **2.91 (0.67)**	**1.56 (0.58)** ←
6 - 10 years	55	2.78 (0.69)	2.99 (0.59)	2.76 (0.58)	**1.47 (0.62)** ←
11 - 20 years	59	2.77 (0.77)	2.97 (0.63)	**2.61 (0.59)** ←	1.65 (0.61)
≥ 21 years	53	2.70 (0.71)	**3.16 (0.66)** ←	2.74 (0.65)	**1.40 (0.52)** ←
		$F_{(4,415)} = 2.12$	$F_{(4,415)} = 2.73$	$F_{(4,415)} = 3.18$	$F_{(4,415)} = 4.56$
		$p = 0.08 (ns)$	$p = 0.03$	$p = 0.01$	$p = 0.00$
			< 2 v ≥ 21 (p = 0.01)	2-5 v 11-20 (p = 0.01)	< 2 v 2-5 (p = 0.04)
					< 2 v 6-10 (p = 0.01)
					< 2 v ≥ 21 (p = 0.00)
Gender					
Female	131	**2.39 (0.58)**	2.94 (0.56)	**2.94 (0.55)**	**1.73 (0.55)**
Male	289	**2.75 (0.74)**	2.97 (0.59)	**2.77 (0.65)**	**1.51 (0.60)**
		$F_{(1,418)} = 24.13$	$F_{(1,418)} = 0.30$	$F_{(1,418)} = 7.01$	$F_{(1,418)} = 12.50$
		$p = 0.00$	$p = 0.58 (ns)$	$p = 0.01$	$p = 0.00$

The results clearly show a frontline test population with a kaleidoscope of perspectives regarding the responsibilities of business. Although possible explanations were not explored further in this study, the identification and quantification of these differences was interesting nonetheless. Of note was the substantially contrasting emphases expressed by female and male personnel, which is similar to findings from other CSRO studies (Ibrahim and Angelidis,

1994; Burton and Hegarty, 1999; Smith et al., 2001). Observed differences between Canadian and American-based employees was also intriguing, considering that every respondent worked for the same company, and resided within the same business unit, yet emphasized economic and ethical responsibilities differently. Further, it seems as though daily work setting (i.e., office vs. field), job function (i.e., the type of work performed), and/or tenure (i.e., the length of time an employee has worked for Enbridge) can all directly influence personal CSR attitudes.

The next extended analysis exercise tied directly into the five investigated hypotheses themselves. Firstly, P1 to P3 were all re-assessed with different work climate perception 'cut-offs.' The original analyses were all based on a 1-4-7 demarcation of the collected mean work climate perception scores (i.e., a score of 1 to 4 indicated a controlling environment, whereas a score of 4 to 7 indicated an autonomy-supporting environment). Different classification limits were created to determine if the original P1 to P3 findings (i.e., with 1-4-7 cutoff points) remained the same, or changed. A neutral zone was introduced first, and assessed under the following scenarios: (1-2.5-5.5-7), (1-3-5-7), and (1-3.5-4.5-7). The findings did not change in any of these cases (i.e., they all remained non-significant for P1 to P3). This was not surprising, considering the heavily-skewed data from the test population (i.e., 366 of 420 respondents had a mean work climate score ≥ 4.00). This awareness prompted an analysis of the autonomy-supportive zone, exclusively, to gauge the stability of the findings in this region. This zone was firstly segmented into a 4-5-6-7 arrangement, to see if varying degrees of

113

autonomy-supportiveness (low, medium, and high) impacted one's CSRO. No differences were noted (i.e., the original P1 to P3 findings remained the same). A 5-6-7 scenario, where the bulk of autonomy-supportive means resided, was also run. No differences in the conclusions were noted once again. In the end, the P1 to P3 findings remained stable across a variety of scale segmentation scenarios.

Hypotheses P1 (regarding all frontline personnel), P4 (regarding education level), and P5 (regarding age/generation) were then re-evaluated by further breaking down the select sub-groups in each hypothesis by the other demographic variables that were gathered in the study. The intent was to determine if the other variables had the potential to impact the findings already realized in these hypotheses. There were some partial observations of multivariate impacts within each re-examined hypothesis, but all findings were deemed statistical anomalies, as significant effect size and power impacts were evident in each of the noted cases. No impacts on the conclusions already established in P1, P4, and P5 were thus seen via this 'demographic drill-down' exercise.

P2 and P3 were drilled-down in a slightly different manner, as they were already set up to be examined in a multivariate fashion (i.e., work climate perceptions of frontline employees/supervisors and office/field personnel, respectively). The work climate perceptions of frontline supervisors was re-examined, using both the performance review approach and the job function approach, to see if differences in CSROs were noted by those supervisors viewing the workplace differently (i.e., controlling versus autonomy-supporting). The same logic and approach was applied to the frontline employee subset, the office

personnel subset, and the field personnel subset. Effect size and power issues dominated the statistical analyses in all cases, and consequently, the ANOVA results could not be calculated. As such, no impacts on the conclusions already established in P2 and P3 were thus seen via this unique 'demographic drill-down' exercise.

The additional CSRO profiles seen in Table 12 were then similarly re-examined to gauge their stability. Each highlighted cell in Table 12 reflects a statistically significant difference of opinion, and was 'drilled-down' by each of the other demographic variables that were gathered. Very few observations of multivariate impacts arose. Those that did surface were once again deemed statistical anomalies, as significant effect size and power impacts were evident in each of the re-examinations.

The final extended analysis that was undertaken had to do with frontline employee engagement. The study had collected a data set that quantified the test population's level of engagement. The deployed engagement survey was made available by The Conference Board (Gibbons and Schutt, 2009). Out of a maximum score of 7.00, the frontline test population appeared to be fairly highly engaged (M = 5.87, SD = 0.93) (refer to Figure 14). Further, a statistically-significant correlation was noted between work climate perception and engagement level of the LP test population (r = 0.66, n = 420, p = 0.00). This insight connects very well to the premise outlined in Self-Determination Theory that positive behavioral outcomes (i.e., such as employee engagement) can be

realized when one is exposed to a more autonomy-supportive environment, which was the circumstance within this research study.

Statistics	ENG_avg
N	420
Mean	5.8703
Std. Error of Mean	.04559
Median	6.0000
Mode	6.00
Std. Deviation	.93441
Variance	.873
Skewness	-1.279
Std. Error of Skewness	.119
Kurtosis	1.781
Std. Error of Kurtosis	.238
Range	4.62
Minimum	2.38
Maximum	7.00
Sum	2465.52
Percentiles 25	5.5000
50	6.0000
75	6.5000
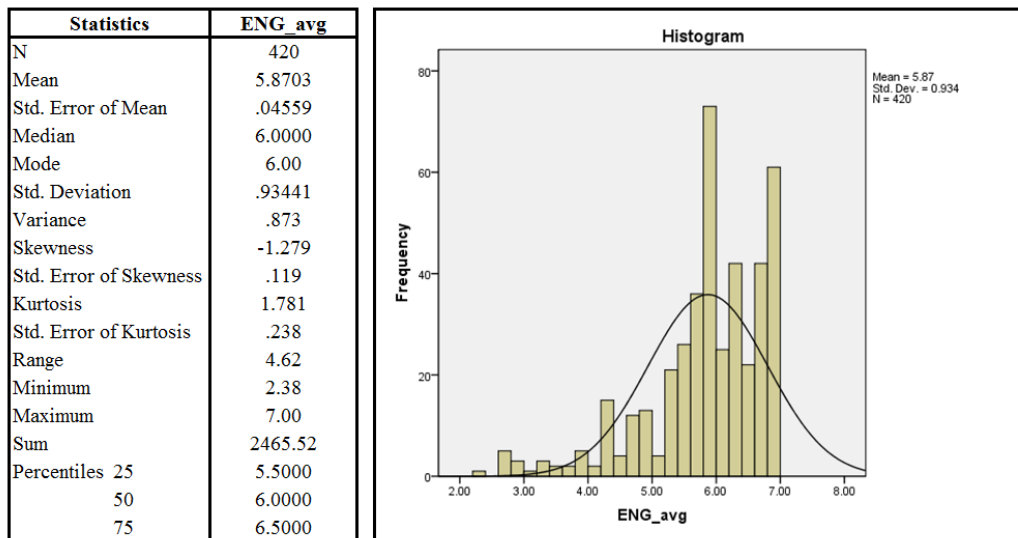
Figure 14. Engagement Level – LP Business Unit

Discussion

Two key objectives were identified for assessment at the frontline level of a sample organization using a statistical survey. The first objective, "CSRO and the Workplace," investigated whether a relationship existed between an individual's perceived level of autonomy support at work (as per SDT) and his/her expressed preference towards each of Carroll's four dimensions of CSR: economic, legal, ethical, and philanthropic. This conceptualization was firstly examined in a collective fashion across the entire test population, and then incrementally, based on splits of the sample population per organizational role and worksite location.

116

The second objective, "CSRO and the Individual," explored whether frontline education levels and age (or rather, generation) of the respondents had an impact on the connection to each of the same four CSR dimensions upon which the study was built.

From these overarching aims, a set of hypotheses was developed and tested to statistically gauge whether one's attitude towards CSR could be influenced by both corporate and individually-based characteristics, as was conceptualized and explored within the research design of Marz et al. (2003). In doing so, the present work sought to add workplace climate perception as a corporate characteristic to the Marz model, and education level and age as individually-based variables, when frontline employee perspectives (opinions) are desired.

The findings of the study are discussed and rationalized within the upcoming section. The approach taken was a collective examination. Firstly, the statistically-non–significant findings of hypotheses P1–P4 (i.e., regarding work climate perception and education level) are jointly discussed, complete with possible explanations that may be driving the outcomes that were observed. This is then followed up with a discussion of the statistically-significant findings of hypothesis P5 (regarding age), with an emphasis on the generational cluster which vastly differed in its CSR opinions (i.e., the Millennials). Lastly, a dialogue centered upon the implications of these findings, along with the limitations of the study, are then presented to close this section of the dissertation.

Work Climate Perception and Education Level

Differing perceptions of the work climate, as expressed by frontline Enbridge LP personnel in this segment of the energy industry, appear to not directly impact one's attitude towards the CSR construct. Specifically, no statistically-relevant preference was shown to any one of the four CSR dimensions (i.e., economic, legal, ethical, philanthropic) in this study, regardless of whether the work environment was viewed as controlling or autonomy-supporting. This finding held true whether the frontline test population was assessed as an entire business unit, by two different representations of organizational role, or by worksite location. Additionally, this result remained intact even when the two work climate zones were further sub-divided and re-evaluated based on demographic differences of the test population (i.e., based on the extended analysis findings of the study).

Similarly, CSR orientations of frontline personnel in this industry appear to not be influenced by their respective education level. This interesting finding remained unchanged even when education levels were further segmented and re-assessed by the demographic variables acquired within the study (i.e., once again, as per the extended analysis findings of the study).

One possible explanation for this result may be connected to the effectiveness of Enbridge's CSR communication strategy and efforts, which may stimulate some degree of alignment and/or connection between individual values and corporate purpose/identity, regardless of perceived work climates and education levels at the frontline. It appears Enbridge's CSR message has been

118

heard, processed, and accepted (i.e., internalized) to some degree by this set of frontline employees. Along the way, this connection to the 'message' has perhaps even overcome the expected influences (positive or negative) of workplace climate perceptions and education level on one's authentic CSR orientation.

The corporate values, CSR policy, CSR annual report, supporting policies, and related practices that go beyond increasing shareholder value are easily found and clearly articulated on Enbridge's corporate (and internal) website for stakeholder reflection. These readily-available statements convey what the company stands for, beyond meeting its economic responsibilities, in a single place to which any employee can refer. Undoubtedly endorsed at the highest levels, the CSR policy goes on to outline expectations of employees within every layer of the organization, which includes adopting CSR policy elements within day-to-day work activities, decision-making processes, and organizational structures. The dissemination and adoption of CSR principles and expectations throughout the Enbridge fabric, and consequently into expected corporate culture, is undeniable. Further, there is anecdotal evidence that a similar level of emphasis is placed on other forms of communication within the company to reinforce these corporate values and expectations (i.e., videos, town hall discussions, briefings and webinars, vignettes, formal announcements, and CSR blogs).

Du et al. (2010) discuss the role of communications as it pertains to maximizing CSR returns, both financial and non-financial. They state that a stakeholder's low awareness of, and skepticism towards, a company's CSR activities are critical obstacles that must be overcome to maximize business

119

benefits from CSR investments. Their conceptual framework not only emphasizes

message content and communication channels as influencers to overcome these

obstacles, but also the mediating effects of company (e.g., corporate reputation,

industry) and stakeholder-specific (e.g., stakeholder type, social value orientation,

issue support) characteristics. It is likely, then, in this light, that Enbridge's CSR

communication efforts have been quite successful, diligent, and efficient in

getting the appropriate message out to its employees, regardless of

channel/medium used, while also leveraging off of corporate reputational capital

to bolster the employee-company connection within the CSR arena. Taking this

argument further, the case could be made that the results noted herein also provide

evidence of frontline employees (in this business unit) becoming somewhat

'values-aligned' with the corporation, where perhaps synchronized principles are

even 'on-display' and naturally embedded within their daily work routines.

Although proof of this detail was not examined or verified in this research, it

could be explored further to confirm its existence, as well as to quantify the

degree of CSR mainstreaming within the organization. Perhaps this is a direct

result of Liquids Pipelines being Enbridge's first business unit (at over 60 years

old), and as such, could be further along the CSR continuum as compared to other

internal business units and/or industry peers. In turn, this may be encouraging

buy-in of the CSR ideology as it is viewed more as 'the way we do things here in

Enbridge,' as opposed to a fleeting management fad. In the end, connections to

Enbridge's CSR values and practices may have been significant enough that they

overcame and 'trumped' any potential impacts that work climate perceptions

120

and/or education levels may have had on frontline employees' true CSR

orientations. That is, these variables may be rendered immaterial when a degree of

congruence in CSR-values is felt by frontline employees.

Another possible explanation of the non-significant findings related to

work climate and education may be connected to the energy industry itself, in that

the nature and structure of this business has been—and will continue to be—one

where direct contact with a variety of stakeholders and their often conflicting

needs is ever present. This holds true in different settings, functions, and

responsibilities within the energy industry (e.g., field, office, management,

operations, engineering, projects, public relations, human resources, and business

development), and is a direct result of the large geographic footprint marked out

by the business (i.e., through its assets, personnel, and daily interactions). This

distribution of assets and people across many regions prompts many stakeholder

interactions to occur on a daily basis, both inside and outside company walls, thus

continually engaging the frontline employee with other stakeholders during

regular ongoing business activities. As a result, it is conceivable that frontline

employees in this setting have established a mental 'matter-of-factness' approach,

and connection, to stakeholders in their daily work routines. Whether this

consciousness is attained through simple repetitive awareness, tenure, or continual

reinforcement amongst colleagues and supervisors, perhaps its embedment into

daily routines is enough to neutralize the impact of work climate perception

and/or education level on one's authentic CSR attitude. This could be interpreted

as an element of mainstreaming, but one influenced more so by the routines of

121

industry and organizational role, as opposed to company culture and/or personal values.

Another possible reason for the noted work climate/education findings emerges from the attention the energy industry is currently receiving, and in particular, the North American pipeline industry. Elevated public awareness of global and regional supply/demand matters; high-profile capital projects (planned or already-constructed) to address these concerns; and the recent social, environmental, and reputational consequences resulting from operational mishaps across the continent are just a few of the dynamics currently at play in this domain. As such, it is conceivable that frontline employees in this landscape are now more aware of their dual association with the company, not only as internal stakeholders (as frontline employees), but also as external stakeholders (as members of the community) who may be directly affected by the actions and events of the company (or industry) they are employed by. Public opinions and perceptions of the industry and pipeline companies themselves, mostly as conveyed in the media, have been amplified over the past few years, and are therefore likely factors in how frontline employees evaluate their connections to the company from a social responsibility perspective. These dynamics and the potential ideological struggles they can prompt may be biasing (positively or negatively) employees' genuine connections to the CSR construct, overriding the impact that work climate perception and/or education level may have on the proposed relationship being studied.

Education level and work climate perceptions may have also been competing against another, more influential condition, which in turn negated their impacts on CSRO in this study. Mainly, one's social responsibility values may have been (or continue to be) more nurtured, shaped, and influenced by forces *outside* of the individual's work and/or past educational setting (e.g., family dynamic, religious background and beliefs, cultural influences and norms, regional customs and practices, and major socio-political events), thus limiting the impact of these two variables towards CSR orientation in this study. Simply put, one's value system may be mostly inherent within the individual by the time he/she enters the workforce as a full-time employee. Support of this argument is bolstered by the definition of values itself, where Coffey et al. (1994) define them as "stable, enduring beliefs about what is worthwhile that influence thought and behavior." When values are internalized by the individual, they transform into personal standards, which are then called upon to guide thoughts and actions. As such, the generalizations that were made to quantify and classify work climate perception and education levels in this study, along with the clustering of participants thereafter, did not in any way embody and/or take into account the diversity of value systems of the individuals being polled. These assorted values are likely the drivers behind many of the different CSR orientations that were seen in the extended analysis undertaken in this research (see Table 12) across varying demographics. If the variables of work climate perception and education level in this study had subtly integrated more of the effects of external influences on the self within their make-up, the research may have yielded different findings.

123

This is perhaps why the age variable in hypothesis P5, which may be indirectly

capturing many of these externally-based stimuli when looked at from a

generational perspective, produced such significant and thought-provoking

results.

The Millennial Generation

The Millennial generation (post-1981 birth year) appears to view CSR

differently than the two previous generations (i.e., the so-called Baby Boomers

and Generation-X). Results of this research support the conjecture that

Millennials place less importance on the more traditional/foundational dimensions

of CSR (i.e., economic and legal [see Figure 15]) than their generational

counterparts, and emphasize the ethical and philanthropic responsibilities of

business towards society more so than older workers. The CSR orientations of

Baby Boomers and Gen-Xers seem to be similar across all four CSR dimensions

studied.

PHILANTHROPIC
Responsibilities
Be a good corporate citizen.
Contribute resources
to the community;
improve quality of life.

ETHICAL
Responsibilities
Be ethical.
Obligation to do what is right, just,
and fair. Avoid harm.

LEGAL
Responsibilities
Obey the law.
Law is society's codification of right and wrong.
Play by the rules of the game.

ECONOMIC
Responsibilities
Be profitable.
The foundation upon which all others rest.

Figure 15. Carroll's (1991) Pyramid of CSR Dimensions

These Millennial results are very much aligned with current research findings. A 2011 study of this generational cohort, conducted by Deloitte Touche Tohmatsu Limited (Hancock and Searle, 2012), revealed that 92% of Millennials believed a company's success is defined by more than just profits. Further, when asked to elaborate by identifying terms that best reflected the purpose of business, 51% felt it was "societal development," while only 39% believed it was "profit." Lastly, not only do Millennials believe in the societal purpose and responsibility of business, but the Deloitte study also found that most Millennials (over 50%) think business—as opposed to governments, communities, charities, and NGOs— is best suited to tackle the biggest challenges society has. The expectations of, and the faith in, the business community to address societal issues has been echoed by the Millennial generation. They are clearly expressing their beliefs regarding the larger role business can play in addressing societal concerns. This could somehow be connected to the collective inner values of this cohort, as shaped by the events and influences of their time. However, this was not explored or verified in the research study.

In trying to understand what may be motivating the CSR preferences of Millennials, one cannot discount the notion of life stage in the workplace as a partial reason. This expressed affinity to higher-order CSR dimensions by Millennials may be partly attributed to youthful enthusiasm (i.e., idealism), naivety and a desire to 'change the world' upon first entry into the workforce—all of which are very much analogous to previous generations at the same points in their lives. Along with this, one must consider that Millennials in the workplace

125

(within large organizations) are most certainly at a different stage in their careers compared to their older peers, and so differences in CSR perspectives, perceived responsibilities, and expectations are likely to be witnessed. Gen-X (1966 to 1980) and Baby Boomer (1946 to 1965) employees are likely to be in positions of elevated responsibility and leadership at the frontlines (i.e., if they have not already moved up the corporate ladder to middle management, or beyond), where the daily pressures of the job would include revenue generation, cost control, budget management, operating efficiencies, and other similar matters that can impact the bottom line. Their direct lines of communication, interaction and feedback are with middle management, whose emphasis is more often than not attached to execution, efficiency, and goal attainment. As such, this reinforced message from above is internalized and focused upon by the 'older' frontliners in more senior roles, which assists in focusing on achieving these operational objectives. Assuming a standard performance assessment model is in place, key performance indicators directly linked to these responsibilities probably forms a significant part of the total compensation arrangement for Baby Boomers and Gen-Xers, both at the frontline and middle management layers. The same degree of emphasis and responsibility is also likely present with respect to legal compliance and adherence within the performance assessment model, a critical reality in the heavily-regulated energy industry in North America. As much as the economic and legal responsibilities are emphasized by the older generations in their respective CSRO profiles in this study, because of daily exposure and scorecard significance (which is coupled to short and long-term incentives like

year-end bonuses and company options), Millennials are perhaps placing less importance on these two core CSR responsibilities because (a) they may not yet clearly see and/or understand how they can directly impact financial objectives/targets or regulatory compliance in their current entry-level roles; (b) they may be less well-versed than senior personnel in the financial and legal requirements that direct the industry, including expectations and consequences that come with each dimension; or (c) they are likely not as financially vested (i.e., from a total compensation point of view) as the older generations, and as such, simply place less emphasis on these perceived 'corporately-driven' responsibilities (i.e., economic/legal) and more on those that align with their inner set of core values (i.e., ethical/philanthropic). Perhaps Millennials would cast more consideration towards the economic and legal domains if senior personnel spent more time and attention communicating the economic and legal significance of their daily roles and performed tasks, along with expectations and performance feedback. This assumption ties into anecdotal evidence that Millennials are a generation that is interested in frequent and instantaneous feedback, especially related to their performance. Effective feedback should be clear, concise, and laid out in a manner that limits it being misunderstood by younger members of the workforce.

Building upon the life-stage argument even further, one can also consider the social context outside of work as a possible determinant behind the noted emphasis on financial and regulatory accountability by older generations versus their younger colleagues. Employees who are nearing retirement (i.e., Baby

127

Boomers) have a personal, financial stake in corporate performance in the near to medium term. Pension plan and retirement savings performance, via a healthy company share price, is likely quite important to these individuals. Meeting legal obligations in parallel will only help to maintain the financial health of the firm, as bottom-line impacts attributed to corporate penalties, lawsuits, and heightened insurance costs are avoided. This does not even take into account the direct and indirect financial hit that comes with the loss of reputational capital when one has stepped out of favor in the eyes of the law. Adding to this framework is the realization that many Baby Boomers are now delaying retirement, partly to help recoup some of the financial losses incurred from the global recession. Delayed retirement of the Baby Boomers may also be motivated by the need to provide continued financial support for elderly parents and even adult children. The connection to the economic and legal dimensions of CSR by the Baby Boomer generation will likely exist in the workplace for many more years to come, either because of these currently seen reasons, or because of other prior generationally-based external influences and events that have helped cast their mindset on these two core areas. Conversely, such thinking is unlikely to be on the minds of Millennials simply because of their current location on the human age spectrum. The bulk of these concerns/issues are non-existent for the typical Millennial as they are simply too young to be consumed with retirement-related matters. Work-life balance is likely far more of a concern and at the forefront of thought for this generational cluster. As for mid-career employees, their heightened connection to shareholder (i.e., economic) concerns is again connected to maintaining a healthy

128

share price, but for slightly different personal reasons than the Baby Boomers. Gen-Xers, aged approximately 31 to 45, are at a point in their lives where personal financial health is critical in addressing current choices and responsibilities, such as managing personal debt, raising children, dealing with aging parents, planning for retirement, and sustaining a preferred lifestyle. As such, this generational group will likely place more of a premium on the financial health of the organization (much like their Baby Boomer brethren) than the Millennials would.

Millennials have also had a different set of life experiences than the older age groups, having had more opportunities to travel to far-flung places around the globe, and having been exposed to more information in their youth (during the digital/internet age) than their Baby Boomer and Gen-X counterparts. They have also been exposed to the uncovering of many high-profile corporate scandals that have impacted the North American business landscape, including the associated consequences to innocent stakeholders, both prior to and during their own participation in the workforce. As such, Millennials in Enbridge's LP unit may be reflecting their feelings and sensitivities toward a variety of social shortcomings by placing more emphasis on the ethical and philanthropic responsibilities of a corporation than the Gen-Xers and Baby Boomers surveyed in this study. These three generational events and/or circumstances, which may partially explain their stronger bond to the high-order CSR orientation dimensions (i.e., ethical and philanthropic, shown previously in Figure 15) than Boomers and Gen-Xers, are briefly discussed next.

129

The first of these Millennial-based influences is online connectivity. Millennials have had access to the internet throughout most, if not all, of their youth—the only current workplace generation who can claim this. As such, they have had the opportunity to become more aware of the multitude of socio-environmental concerns/causes scattered across the globe. The researcher of this study suggests that, based on a recent widening of focus within the energy industry, Millennials in this test population are likely to be more aware than the older generations of the concerns of various stakeholder groups that are directly connected to the activities of the energy industry that employees them. Whether these interest groups are in tension with the industry at a local, regional, or global level is immaterial. This real-time enlightenment of the external stakeholder landscape, through readily-accessible digital means, has granted Millennials more opportunities to develop an assortment of perspectives with respect to the interface between business and society; perspectives that were likely not as readily formulated by previous generations because of their limited exposure to similar information. This has likely prompted a more holistic appraisal of the impacts business has on society, which is evident in the slant towards the ethical and philanthropic layers within Millennials' respective CSR orientation profiles.

The second external stimulus that may have impacted the opinions of Millennials in this study was the profusion of corporate scandals this generation witnessed firsthand while growing up. The unethical behavior of many senior executives across many industries has critically damaged the trust and confidence they had previously been granted to run their operations, essentially resulting in

the revocation of their social license to operate. Many frontline employees—

perhaps the parents or even the grandparents of Millennials—were impacted by

the immoral actions of these few in positions of authority, through job losses,

financial damages, loss of reputation, psychological stress, etc. Direct and/or

indirect connections to these acts of fraud, or simply even an awareness of them

and the impacts they had on a variety of stakeholders, could be contributing

factors to the expressed desires of Millennials for corporations to place more

emphasis on the ethical dimension of CSR.

Last of all, economic factors, educational opportunities, and an increase in

global connectivity infrastructure have offered more opportunities for Millennials

(as compared with their Baby Boomer and/or Gen-X coworkers) to travel abroad

in their youth, thus directly impacting their views of the world. Although not

assessed in this research, perhaps the cultural diversity of the test population, in

terms of international birthplaces and subsequent immigration to Canada for

work, also influenced the responses in this survey. Nevertheless, not only is there

anecdotal evidence that many Millennials have travelled and experienced more

diverse cultures than many of their predecessors, but some of the locales they may

have visited (e.g., countries in Asia, Africa, Central America, and the Caribbean)

may also have left a lasting impression on this younger group, namely from a

social inequity point of view. Many youth today seem to be drawn to travel

experiences that challenge them physically, socially, and intellectually—in ways

that daily life in North America doesn't seem to offer—and broaden their

perspectives on their purpose in life and the things they take for granted. In their

travels across less affluent and less developed countries, it is probable that they have witnessed conditions of poor health, environmental disregard, gender and racial inequality, sub-standard education levels, and poor work and living conditions. To compound this, they may have also observed the presence of large, multinational corporations operating in the immediate vicinity of these noted issues, further challenging them to consider how corporate financial success and health/equality are linked (and often, inversely). Coupled with the immediacy of online research and news stories that validate what they have seen and help them locate organizations focused on addressing the inequities, Millennials in this study may be reflecting their feelings and sensitivities towards these social shortcomings by placing more emphasis on the philanthropic responsibility of CSR than Gen-Xers and Baby Boomers did in this study.

General Implications

The study findings and discussion presented here, regardless of statistical significance, offer some general insights for consideration within the business setting in a direct and/or indirect way.

With the goal of mainstreaming CSR into the fabric of the organization, especially at the frontlines where stakeholder interactions are likely to be more representative of 'walking the talk,' the firm would be well-served to further understand what drives employees to connect to their stated citizenship mantra. An inventory of workplace and individual-based factors should be explored and evaluated in such an effort, with the understanding that some variables may have

132

more impact than others. Such an effort is merited if a genuine commitment to the principles of CSR truly forms a part of the strategic direction of the company. Awareness of the high-impact variables would prompt the creation of niche and targeted programs to engage certain segments of the employee population. In order to further maximize CSR engagement, respective corporate groups may focus on and address variables directly linked to the workplace. All-encompassing general CSR programs are still encouraged, and should be run in parallel with these more focused platforms.

To help realize this vision of embedment, the effective communication of any message connected to CSR is critical. Not only does this include the actual framing and content of the message, but it must also consider who the message is intended to reach and connect with, as well as the timing of its release. The developed communications strategy must also focus upon the current social, environmental, and governance concerns the company—and the industry as a whole—is contending with, in order to ensure relevance is maintained. Further, the communications strategy should also address attention from the media that calls into question the company's commitments and actions in these arenas. This is a delicate proposition to execute, in that a company may be perceived as being reactionary and exploiting its CSR position and reputation strictly to advance its financial growth agenda.

In attempting to quantify and further understand the audience the company would like to connect with—essentially its employee base—one must comprehend that certain forces are at play that can either advance or minimize the

envisioned CSR bond. The first of these is one's personal value system, which is molded by an assortment of influences outside of the workplace, such as race, ethnicity, gender, culture, and regional effects. Along with this, one must not discount the needs, desires, and generally-accepted stereotypes of the multi-generational workforce currently at play. Special attention needs to be cast towards the Millennial generation, as they represent the workforce of tomorrow. Attraction and retention of this working generation is paramount if a firm is to remain competitive and sustainable as it moves into the future. This is easy to understand, given the number of individuals in today's workforce who will be ready to retire within the next few years. Millennials are seen as an idealistic and culturally-diverse cohort that emphasizes civic activity, ethics, work-life balance, technological comfort, social networking, and a world without boundaries. They truly are depictions of the global citizen who happens to reside in our own backyard. With such knowledge in hand, corporations would be remiss to not target these unique characteristics and desires within their recruitment and retention efforts. This includes affording them opportunities to participate and feel connected or engaged with the CSR portfolio of the firm. The same rationale should be applied to the Baby Boomer and Gen-X workforce, but with the understanding that life-stage realities should be factored into the equation.

In the end, to further prompt buy-in and execution across the company, the CSR agenda needs to form a part of employees' annual performance objectives. Clearly-articulated CSR goals that are both measurable and actionable need to be situated alongside employees' other annual performance objectives (e.g.,

financial, legal, environmental, health and safety, learning, and development) to enhance credibility and relevance. Obviously, the actions need to be position-relevant, attainable, and developed with an understanding of the impact variables at play. Further traction will be realized if these objectives are given more than just a symbolic weighting within the performance assessment model. Successful achievement of the laid-out objectives should be reflected in the total compensation arrangements of the corporation, and they do not necessarily have to be financial in nature.

Limitations of the Study

One limitation of this study was the significant skewness of the responses with respect to work climate perceptions. The vast majority of respondents (86%) viewed their workplace as mostly autonomy-supportive, which in turn introduced sample-size effects when statistical analyses were conducted in the controlling work climate zone. If more replies had fallen into the controlling work climate zone, this study may have yielded a more balanced assessment. This 'spread profile' observation highlights the more pressing limitation that social desirability bias may be evident, meaning that participants are responding how they feel the study (or Enbridge management) would like to see them respond. The same social desirability phenomenon may be occurring with respect to reported CSR orientations. Low response rates from participants with basic education levels also led to a limited statistical analysis around this demographic. The notion that some participants may have falsified their true education level (or other responses) in

the study must also be considered. Performance of such a maneuver by a participant may have been prompted by a belief that provided survey information could be individually analyzed and/or tracked back to the individual, either by Enbridge or the researcher. However, this was not the case. Overcoming this mindset, which may have been prevalent across the test population that chose not to participate, could have led to a higher overall response rate to the survey.

Another restriction encountered was with the work climate assessment tool itself. Although the findings appear to indicate that workplace perceptions and CSR orientations cannot be directly linked, the study was self-handicapped in its make-up. Due to privacy and ethical considerations when polling for personal opinions in the workplace, the survey was not able to incorporate other important tenets of Self-Determination Theory within its make-up to fully evaluate any potential relationships (e.g., autonomy orientation, need satisfaction, competence, relatedness, etc.) to CSRO.

The CSRO instrument that was used may also be limiting a proper quantification and depiction of participants' attitudes towards the construct. The original framework identifies the economic dimension alone as being more concerned with the shareholder. The sum of the legal, ethical, and philanthropic dimensions depicts more of a concern towards stakeholders and society. An examination of this study's CSR inter-item correlations (see Table 5) suggests that these traditional groupings should likely be revisited, perhaps due to the type of industry that the study explored. Pipeline companies in North America operate in a heavily-regulated environment. As such, earnings are put at risk due to

136

increased government intervention, whether through regulatory directives or tax

increases. An awareness of this context, which in essence connects the economic

and legal dimensions together, helps explain the observed inter-item correlations

of this study. The correlation between the economic and legal layers was noted to

be weaker (i.e., $r = -0.168$, $n = 420$, $p = 0.001$) than the economic/ethical and

economic/philanthropic inverse correlations (i.e., $r = -0.609$, $n = 420$, $p = 0.000$,

and $r = -0.389$, $n = 420$, $p = 0.000$, respectively). This could prompt the merging

of the economic and legal dimensions into a single dimension portraying concern

for the shareholder to account for this highly influential, industry-specific,

blended reality. A similar re-examination could be undertaken for the ethical and

philanthropic dimensions.

Another limitation associated with the CSRO instrument had to do with

the questions themselves. Firstly, the set of forced-choice questions that were

deployed were much more time-consuming to complete as compared to other

parts of the survey. In the researcher's opinion, this was the most likely cause of

the biggest exodus from the survey, impacting participation rates. Secondly,

participants were only allowed to allocate whole numbers to the four sets of

statements linked to each question. Provisions could have been made within the

survey instrument to allow for partial allocations of points, which may have been

more representative of the personal opinions of participants. The number of

questions may have also been excessive, as evidenced by the progressive drop-out

rates of participants witnessed within this section of the survey, prompting the

researcher to re-examine how many questions are truly needed to accurately

capture one's CSR orientation profile. Lastly, the phrasing of some of the

statements may have been interpreted as too similar in nature to others, which in

turn may have impacted the weightings that were assigned by the participant. This

was potentially the case with two or three questions, where the differentiation

between the legal-based statement and the ethical-based one may have been

clouded, and vice-versa. Evidence of this possibility was seen in the factor

loadings within the rotated component matrix of the 3-factor principal component

analysis that was performed. To offset this, the CSRO profiles used in hypothesis-

testing could have been calculated without including the replies from these

specific questions, although impacts to the noted findings were likely to be non-

existent.

Another limitation worth noting was the direct connection between the

researcher of this study and the participating company, Enbridge Inc. For

transparency and ethical reasons, it was clearly revealed within the survey and the

test population emails sent that the primary researcher of the study was also an

employee of the company (albeit in a different business unit). Although it was

clearly stated that the research effort was purely academic in nature and not

affiliated with any other Enbridge initiatives, one cannot help but wonder if

participation rates were negatively impacted because of doubts around this

disclosure. Additionally, survey replies may have once again been skewed

towards what was deemed desirable (to Enbridge) as a result of suspicions around

the proclaimed independence of the study. The engagement questions in the

survey may have added fuel to this fire. Although they were included in the

survey as a contingency measure, the statements were similar in scope and phrasing to those seen in the annual engagement survey deployed by Enbridge Inc. across all of its business units. As such, these questions may have elicited further confirmation for participants that this research study was, indeed, an Enbridge-sponsored project.

Lastly, some of the demographic questions may have created a bit of confusion in the way they were presented and explained, consequently impacting the findings of the study. For example, the worksite was crisply defined in the study as either "office" or "field," and was based on where the participants spend most of their daily work hours. Yet, some individuals may work equally in office and field settings. Further, selecting office or field for those who work in the pipeline control centre may have been a matter of interpretation, as opposed to the predefined simple selection offered in the study. Also, other locations and sites reflective of an office and/or field setting that were not included as examples in the survey may have prompted a mix of replies if they were interpreted differently.

The people responsibility and job function variables may have also inspired a collection of inconsistent replies. Although the survey was specific in identifying what constituted a "people leader" based on performance review execution, these may have been overlooked and/or misinterpreted. Further, overlap may have existed in the job function categories, whereby an individual could be deemed a supervisor as well as a professional/specialist. Proof of this misinterpretation and confusion lies in the noted counts of supervisors and

139

employees, in both the performance review case and the job function case. If

proper and consistent classification occurred, the totals for supervisors and

employees would have been the same when both variables were compared;

however, they were not: 158 participants identified themselves as supervisors and

262 as employees, as per the performance review methodology, while 100

identified themselves as supervisors and 320 as employees, as per the job function

approach.

The test population may not have been confused by the education level

demographic, but the distinctiveness of how it was defined in the study may have

persuaded individuals to either not offer a reply, or worse yet, falsify their

response. This was mostly of concern for those with high school education or less,

as the unintended optics of the tiers of replies may have inadvertently placed a

preference on the technical and academic education levels. A more appropriate

data collection approach might have been the use of a pull-down list of a wide

array of education level options to select from. The researcher could have then

clustered the replies accordingly once the responses had all been received, in

order to conduct the requisite statistical tests.

From the perspective of age (generation), the majority of study

respondents were either from the Baby Boomer of Gen X cohort. Thus, a noted

limitation was the number of Millennial replies that were collected by the study (n

= 66). If more Millennial perspectives had been captured, the current findings

may have been pronounced even further, or conversely, yielded a different

statistically-based interpretation. Further, the collection of specific life-stage

140

information was not sought by the study. This may have shed further light and understanding on the noted generationally-driven CSRO differences that were seen.

Chapter 5: Conclusion and Recommendations for Future Work[†]

Summary

An individual's attitude towards corporate social responsibility (CSR) can be influenced by both workplace-related factors and individually-based characteristics (O'Neill et al., 1989; Marz et al., 2003). This concept was used to investigate whether work climate perceptions (as defined by Self-Determination Theory) influenced the expressed CSR orientations of frontline personnel. The study also explored whether the demographic variables of education level and age had an effect on the CSR orientations of frontline personnel. The research not only sought to build upon the Marz et al. (2003) corporate-individual model, but also to extend the findings of O'Neill et al. (1989) by examining whether the specific self-characteristics explored were as influential at the frontline level of a company as they were observed to be at the boardroom level. Both of the noted objectives were investigated amongst frontline personnel of a North American energy transportation company who were physically situated in an office or field setting in Canada or the USA.

Mixed results were discovered. Work climate perception on its own could not be considered a determinant of one's CSR orientation within this specific test population. This finding was further confirmed when the test population was segmented between frontline supervisors and frontline employees and reassessed.

142

That is, it appears as though responsibility levels and/or roles at the frontline do not impact the proposed work climate/CSRO relationship. The same conclusion is noted when the test population is demarcated based on worksite location (i.e., office vs. field), further limiting the envisioned marriage of work climate perceptions and CSRO. Assessments of the individual-based characteristics of the research leads to the conclusion that education levels at the frontline cannot be solely utilized to explain noted differences in CSRO. However, frontline generational groups in the workplace do vary significantly in their beliefs (opinions) with respect to which responsibilities a corporation should focus on in addressing their accountabilities to societal stakeholders.

Although these conclusions are supported by the statistical findings associated with this study, it is crucial to not lose sight of the specificity of the landscape that was examined. That is, the data was solely collected from one business unit within a single organization, situated in one industry sector, located in one region of the world. It would be prudent, academically and from a general business-insight perspective, to further this frontline CSRO analysis into alternate and varied settings as to broaden the scope of the examination, the associated findings and potential implication possibilities. Addressing the noted limitations from the previous chapter, in parallel with the forthcoming discussion around future research directions, would certainly assist in expanding and furthering the knowledge of CSRO at the frontline levels of large corporations, which in turn, could help shape strategic business decisions connected to the CSR construct.

Potential Future Research Directions

If future research were to germinate from this study, an update of the instruments that were used to gauge personal opinions is recommended. This could also include the incorporation of more theory-based concepts within the hypothetical model that would be created and eventually investigated. As an example, the idea that work climate could affect CSR orientation merits further examination with an enhanced research design model that incorporates additional principles, variables, and sub-theories found within the realm of Self-Determination Theory. The same recommendation can be made for CSR, whereby the concept is reinterpreted and accordingly modeled based on a more modern and all-encompassing representation. The explicit concepts of environmental, social, and governance-based responsibility would likely become dimensions of interest in a revised interpretation. This reformulation could perhaps even be extended to accommodate industry-specific CSR opinions and ideologies. The merging of key CSR dimensions is also a possibility associated with model redesign. An assessment of the corporation's CSR performance is also worth exploring, especially if internal and external stakeholder assessments are gathered and compared to gauge the synchronicity of perspectives.

Keeping with the theme of evaluation instruments, the development and testing of a tool to assess the presence (i.e., existence) and degree of CSR mainstreaming within the corporation's workforce would be of definite interest and value for large companies aiming to incorporate CSR on a daily basis within their make-up. Additionally, it might be worthwhile to study how the concept of

employee engagement is connected to both work climate perceptions and CSR orientation, perhaps through statistical path analysis, with employee engagement acting as the mediating variable. Employee engagement itself could be broken down further into its component parts (i.e., emotional, rational, and behavioral engagement), whereby each element is then evaluated from a direct relationship perspective to CSRO and/or work climate perception. Alternatively, these sub-elements could be gauged in terms of their effectiveness as mediating variables between work climate perception and CSRO. The concept of engagement (in whole or in part) could also be evaluated to determine its capability to act as a proxy for need satisfaction, as defined by SDT. If a strong relationship is found, this may be one way to overcome privacy concerns in the workplace when seeking information connected to personal beliefs and opinions.

Supplemental investigations exclusively related to this test population, the company, and/or the industry domain could include the launch of a follow-up survey. A longitudinal assessment of this sort would offer insights into the stability of the expressed opinions (i.e., work climate perceptions and CSR attitudes) within the business unit. It may also elicit the participation of other segments of the frontline population whose opinions were not represented in the first survey, as the majority of respondents were frontline employees (not supervisors) who worked in an office setting, with an academic education, in either the Baby Boomer or Gen-X age group. If timed properly, a follow-up survey may be able to establish whether events of significance after the initial survey (which could be global, regional, local, and/or industry-specific) have

145

influenced participants' viewpoints. Building upon this, a launch of the same survey within other business units of the company would offer a panorama of frontline opinions, which could be used to conduct an assessment of homogeneity within the company. Conducting the survey at higher levels within the organization (i.e., middle, senior, and executive management) would also afford researchers the opportunity to compare how aligned the opinions are from top to bottom. At higher levels, sample size is small, and so statistical tests become less useful and privacy issues become more fraught with complexity. Peer analytics could also reveal industry-based tendencies if the survey were launched within other energy transportation companies. It could also be beneficial, from a company culture point of view, to measure the CSROs of employees within a company that is about to be acquired by another company, and then compare the findings to the current CSR sentiment of the acquiring company to establish degrees of similarity.

Expanding upon the demographic variables polled within the study represents another opportunity for future work, especially if a researcher is seeking to further understand the attitudes of Millennials with respect to work affiliation. Tenure within a company, as well as within the industry of interest, would offer further insights to the generational findings noted herein, and would allow comparisons across various stages of a career, at least for those who work within a single industry. If practical, it would be interesting and valuable to collect life-stage information from the test population to quantitatively discern its impact on each generation. The type of education received (i.e., in either the

academic or technical setting), the type of educational institution attended (i.e., secular or non-secular), as well as deeper understanding of whether social responsibility was introduced and/or integrated into the curriculum are examples of noteworthy expansions of the education level variable that could broaden the understanding of how it may influence CSR orientation.

Considering the diversity of the workforce currently in place, as well as the diversity expected in the future as the global mobility of labor increases, it would be extremely applicable (although likely difficult from a privacy angle, when gauged within a corporate setting) to examine the CSRO impacts as driven by individuals' cultural backgrounds and practices. Along the same vein, incorporation of participants' religious affiliations and family structures into the model would only serve to enhance CSRO understanding further, whether connected to the work climate perception construct or as a standalone assessment.

To further substantiate the Millennial discussion points offered earlier, it would also be interesting to examine this generation's awareness levels about socio-environmental causes in this particular industry, and attitudes regarding corporate governance and social (in)justice in future studies connected to CSR orientations. This could include awareness derived from technology (e.g., the internet) and/or from personal, on-the-ground experiences, involvement, and/or observations. Further, comprehension of the direct effects on CSRO caused by generational events of significance would help validate some of the stereotypes associated with the Millennial generation, including its orientation to CSR. A similar evaluation could also be done across the other two generations. The high-

147

impact events in question could be local, regional, and/or global in nature, and correlated to the timing of the occurrence relative to one's life-stage.

Contribution

Generally, the following study sought to extend current knowledge, insights, models, and assessment practices related to CSR attitudes (i.e., orientations) by investigating a set of variables that had the potential to impact individual opinions at the frontline level of an organization. More specifically, it examined whether work climate perceptions, education level, and age (i.e., a generational perspective) had the potential to influence personal CSR perspectives. These notions were investigated across the frontline level of a North American energy transportation company, both amongst supervisors and employees, as well as in the field and in an office setting.

The foundation of the research was built upon the understanding that the attitude of an individual towards corporate social responsibility could be influenced by both workplace-related factors and individually-based characteristics (O'Neill et al., 1989; Marz et al., 2003). The intention of this study was to contribute to this body of knowledge by focusing on and investigating whether the variables of work climate perception (i.e., autonomy-supporting versus controlling, as per Self-Determination Theory), education level, and age (specifically, generation) directly influenced one's social responsibility outlook at work. In doing so, it sought to extend the Marz et al. (2003) corporate-individual

model to further understand what may impact CSR orientations at the frontline level of a sample organization.

This study had originally proposed to add workplace climate perceptions to the inventory of corporate characteristics within the model presented by Marz et al. (2003) (i.e., albeit in a different industry and organizational layer). This was not accomplished. However, noted study limitations and model re-adjustments should be taken into consideration if further investigation of this envisioned relationship is pursued.

The second focus of the study explored whether frontline education levels and generational differences impacted the personal connection to the four CSR dimensions the study was founded upon. The motive behind this element of the study was to establish whether these individual-based variables could be added to the Marz et al. (2003) model (again, in a different industry and from a frontline perspective), and collaterally, to extend the findings of O'Neill et al. (1989) by examining whether these individual-based background characteristics are as influential to CSR perspectives at the frontline level of a company as they were observed to be at the boardroom level. Although education level was not a significant contributor to altering CSR perceptions, one's generational group was noted as a very significant driver behind noted differences in CSR orientations.

This research was conducted in a different industry setting with an abundance of diverse stakeholders (internal and external) that employs different skill sets and professions, and is situated across a different layer in the organizational hierarchy than the research of Marz (i.e., frontline-level energy

149

transportation employees in Canada and the USA, as compared to a German-based international accounting/consulting firm and its junior and senior management staff of auditors, tax, and management consultants). As such, extension of the Marz model is clear as the exploration of new variables is undertaken for addition to the original model. Yet, the groundwork is also being laid for the development of a similar framework in a different industry, at a different level in the organization, and across two different countries.

Conclusion

This survey of frontline employees at a North American energy company appears to show that work climate perceptions, on their own, cannot be identified as a corporate characteristic that directly influences the orientation of an individual toward corporate social responsibility. The survey also indicates that attitudes toward CSR are affected by the age of respondents, but not by education levels.

Although work climate perceptions can influence behaviors in a positive fashion, it appears from the survey that CSRO may be an inherent attitude aligned with one's value system. This connection was not examined in the study, nor were the possible effects that other self-characteristics could have on the proposed alignment.

The focus for the present work has been on the question of whether the variables of work climate perception, education level, and age directly influence one's social responsibility perspective at work. A case study was developed and

150

presented, based on a survey of frontline personnel employed by a North

American energy transportation company. The survey was adapted from a tool

that has been used for other CSR-related studies. Survey development and

deployment were described in detail, as a guide to others who may want to

conduct their own surveys on a sample group. Analysis methods have also been

explained, so that results can be interpreted with statistical confidence to verify

(or refute) hypotheses related to employee engagement (i.e., connection) to CSR.

While the survey tool was useful for examining CSRO, some

modifications to the method and sample population would be worth implementing

to understand how CSRO affects different workers and corporate performance on

economic, legal, ethical, and philanthropic grounds. In that way, employees can

work for companies that they believe in, and companies can operate in ways that

reflect their stated values with respect to corporate social responsibility, according

to credible metrics.

Extrapolating the survey findings beyond the test company's walls allows

one to forecast the possible implications to corporate strategy, and industry in

general.

A company would be well-served to consider frontline employee

perspectives when developing and reviewing CSR policies/practices as part of its

commitment to continuous improvement. A blending of top-down strategic

reasoning with bottom-up engagement will potentially heighten buy-in,

connectivity, and embodiment of desired values. This goes hand-in-hand with the

belief that CSR should not be viewed as an add-on concept to the operational

151

status quo, but rather an integrated approach to conducting business across the whole organization, which is synchronized with corporate culture and employee expectations. That being said, human resource departments would need to formally include CSR objectives within the performance management process to emphasize its importance right alongside employees' roles, responsibilities, and annual operational targets. In essence, this process of CSR integration is no different than company-wide initiatives such as worker safety and product quality improvement.

It has been suggested that a socially-responsible culture and working environment is an attractive intangible corporate asset to attract, retain, and engage the workforce. With the heightened scrutiny and media attention North American pipeline companies have been receiving in recent years, it is in their best interest to be seen as socially-responsible corporations. Attention to the stakeholder landscape will not only assist in progressing a strategic agenda, but it can also be leveraged to attract and retain the high-quality, motivated workforce needed to deliver this strategy, through a positive societal reputation. This will no doubt require a more proactive and directed communication strategy tied to an organization's non-financial successes and initiatives. This is important for internal and external stakeholders, and will be something of a paradigm shift for some industries. Future work may be undertaken by others to consider the public policy implications of CSR orientation.

Considering the upcoming demographic changes of employees, from the viewpoint of staff attraction and retention, companies need to pay close attention

to the CSR messages they cast. A carefully-crafted and relevant CSR policy can help ensure maximum connection with increasingly diverse socio-demographic groups, as well as other stakeholders of the company, from government policy-makers, to citizens who may be affected by operations, to interested non-governmental organizations who may advocate for particular social values. If done correctly, the CSR platform can evolve into an intangible asset of importance for companies to compete more sustainably across many strategic fronts.

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176

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Appendix A: Final Survey

1. INTRODUCTION

PARTICIPANT INFORMATION LETTER

• PROJECT TITLE

- A Study of Work Climate Perception, Engagement and Individual Characteristics and their Respective Impact on an Employee's Corporate Social Responsibility Orientation

• PRINCIPAL INVESTIGATOR

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- and -

Manager, Technology Transfer
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• ACADEMIC ADVISORS

Dr. Peter C. Flynn, Ph.D., P.Eng.
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• INTRODUCTION

Welcome and thank you for your interest in our academic research. The next few paragraphs will provide you with some insights and information to further your understanding of what we are trying to achieve. Following this, you will be invited to participate in our study by filling out a questionnaire online. Your involvement is completely voluntary. The obtained results and findings are for the sole purpose of completing a graduate level thesis.

If you should have any questions or concerns, please contact the individual shown in the ADDITIONAL CONTACTS section of this PARTICIPANT INFORMATION LETTER.

• PURPOSE

The primary goal of this study is to better understand how an employee's personal opinion towards corporate social responsibility (CSR) may be influenced by the workplace and his/her own individual characteristics. The survey data collected will be analyzed on a collective basis to establish the existence of potential relationships between these variables, both in the field and office setting.

As pointed out earlier, this study is being carried out for the sole purpose of completing a graduate level thesis.

Enbridge Inc. is supportive of this research initiative. However, it should be made perfectly clear that this study is in NO WAY CONNECTED to any other Enbridge Inc. employee study (i.e. past, present or upcoming/proposed). It is a standalone project where only the findings in aggregate format will be presented to senior management for their awareness and understanding. This ensures that the privacy and confidentiality of every participant, and his/her individual survey replies, is maintained throughout the study.

2. SURVEY INFORMATION

PARTICIPANT INFORMATION LETTER .../cont'd

• BACKGROUND

More and more companies are embracing the principles and practices of corporate social responsibility (CSR). Employees often recognize, align with and enact upon the CSR values and commitments that are communicated by the company to its stakeholders. To nurture this relationship even further, it would be advantageous to understand what variables promote (or discourage) the 'amount of connection' one makes to the core concepts of CSR.

• TEST POPULATION

The test population recruited for this research all resides within the Enbridge Liquids Pipelines (LP) business unit only, both in Canada and the U.S.A. The functional groups of interest to this study include:

* Field Personnel = Operations
* Office Personnel = [Operations + Business Development + Customer Service + Engineering & System Integrity + Finance + Public & Governmental Affairs + Information Technology + Law & Regulatory Affairs + Human Resources]

Personnel within each of these groups will be further divided into the following categories:

* Front-Line Managers (Field & Office)
* Front-Line Employees (Field & Office)

• THE SURVEY

By your arrival to this web-page, and this PARTICIPANT INFORMATION LETTER, we would like to invite you to participate in our study by completing an online survey. It is comprised of four (4) specific sections. Each section starts out with a general explanation of what is being explored. Instructions on how to complete each section are also provided. The four sections of the survey include:

* The Workplace
* Business & Society
* Engagement
* Demographic Variables

Participation in the study will grant you the opportunity to receive an aggregated-summary of the key trends (themes) that may be uncovered. This will be available at the completion of the study, and upon request.

The only commitment we seek is the time you spend to complete the survey. Since this is an online survey, you may elect to complete it outside of work hours to minimize any interruption to your daily work routines. Enbridge Inc. is supportive of the survey being completed during, or outside of, normal working hours. Multiple re-enty back into the survey will be enabled for you to complete the survey in more than one sitting, if required.

No other risks, discomforts or inconveniences are foreseen with your participation in this survey.

We kindly ask that you complete and submit ONLY ONE (1) SURVEY, and from ONLY ONE (1) COMPUTER/LAPTOP.

The survey should take 15 - 20 minutes to complete.

3. CONFIDENTIALITY

PARTICIPANT INFORMATION LETTER .../cont'd

• CONFIDENTIALITY

All responses to the online survey will remain strictly confidential at all times. The gathered replies will be numerically coded at the source of entry. They will continue to remain numerically coded throughout the statistical analysis phase to maintain the anonymity of the participants. The PRINCIPAL INVESTIGATOR is the only individual in the research project who will access, manage and assess the survey data.

Both ACADEMIC ADVISORS and Enbridge Inc. WILL NOT be granted access to any data obtained from the study. Aggregated results are all that will be made publicly available, including to Enbridge Inc.

Individual survey participants and/or their replies will not be identified in any future presentation or publication. The premise of the study is strictly founded upon aggregated themes and correlations at the field and office level. Reference to, and analysis of, replies, themes and trends within any of the proposed office 'sub-groups' in the test population will not be undertaken in this study.

Individual replies will be housed within the online survey tool. The PRINCIPAL INVESTIGATOR is the only one with knowledge of the login identification and password to access the data. This approach will remain intact for the complete duration of the study. This same logic will apply if, and likely when, the raw data is transferred into a statistical analysis software tool.

To ensure confidentiality even further, any data that may be transferred to a memory stick or ends up being printed will be coded and stored in a locked cabinet/drawer to which only the PRINCIPAL INVESTIGATOR will have access. Information is normally kept for a period of five (5) years after publication, after which it will be destroyed.

• FREEDOM TO WITHDRAW

Your participation in this study is completely voluntary. There is no obligation to participate and you are free to withdraw yourself from the process at anytime. If you decline to continue or you wish to withdraw from the study, your information will be removed from the study upon your request.

• ADDITIONAL CONTACTS

If you have concerns about this study, you may contact Dr. James Miller, Chair of the Engineering Faculty Ethics Committee, University of Alberta, at (780) 492-4443. Dr. Miller has no direct involvement with this project.

4. PROCEED or DEPART?

1. Would you like to participate in the proposed research study?

◯ YES - Let's get started

◯ NO - I would prefer not to participate

5. THE WORKPLACE (Section 1)

• BACKGROUND

This section of the survey contains statements describing your interactions with your immediate supervisor. Individuals in supervisory roles often display unique styles when engaging with their direct reports. We would like to further understand how you feel in relation to these experiences with your immediate supervisor.

Your responses are completely confidential and nobody within Enbridge will see individual survey replies. Please be honest and candid. Also, keep in mind that there is no right or wrong answer. This is about how you feel personally.

• INSTRUCTIONS

For each statement below, select the rating which best reflects your current opinion

2. I feel that my immediate supervisor provides me choices and options at work

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	◯	◯	◯	◯	◯	◯	◯

3. I feel understood by my immediate supervisor

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	◯	◯	◯	◯	◯	◯	◯

4. I am able to be open with my immediate supervisor at work

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	◯	◯	◯	◯	◯	◯	◯

5. My immediate supervisor expresses confidence in my ability to do well at my job

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	◯	◯	◯	◯	◯	◯	◯

6. I feel that my immediate supervisor accepts me

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	◯	◯	◯	◯	◯	◯	◯

6. THE WORKPLACE .../cont'd

7. My immediate supervisor makes sure I really understand the goals of my job and what I need to do

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	◯	◯	◯	◯	◯	◯	◯

8. My immediate supervisor encourages me to ask questions

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	◯	◯	◯	◯	◯	◯	◯

9. I feel a lot of trust in my immediate supervisor

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	◯	◯	◯	◯	◯	◯	◯

10. My immediate supervisor answers my questions fully and carefully

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	◯	◯	◯	◯	◯	◯	◯

11. My immediate supervisor listens to how I would like to do things

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	◯	◯	◯	◯	◯	◯	◯

12. My immediate supervisor handles people's emotions very well

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	○	○	○	○	○	○	○

13. I feel that my immediate supervisor cares about me as a person

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	○	○	○	○	○	○	○

14. I don't feel very good about the way my immediate supervisor talks to me

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	○	○	○	○	○	○	○

15. My immediate supervisor tries to understand how I see things before suggesting a new way to do things

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	○	○	○	○	○	○	○

16. I feel able to share my feelings with my immediate supervisor

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	○	○	○	○	○	○	○

185

8. BUSINESS & SOCIETY (Section 2)

• BACKGROUND

Section 2 of this survey contains statements related to the interactions between Business and Society. Specifically, the many issues and responsibilities a company deals with when conducting its day-to-day activities. All companies respond to these demands differently. We would like to understand the importance of these issues from YOUR OWN personal point of view.

Your responses are completely confidential and nobody within Enbridge will see individual survey replies. Again, we ask that you please be honest and candid with your answers. There is no right or wrong response as we are only interested in your personal opinions.

• INSTRUCTIONS

Based on its importance to YOU, allocate up to, but NOT MORE THAN, TEN (10) TOTAL POINTS to each set of four statements. Ensure you ONLY USE WHOLE NUMBERS between 0 and 10 (i.e. no fraction/decimal amounts, as rounding errors will be introduced). Also note that each statement requires a weighting be assigned to it (i.e. from 0 to 10).

For example, you might allocate points as such:

A = 4
B = 3
C = 2
D = 1
----
10 pts (Total) - or -

A = 1
B = 2
C = 0
D = 7
----
10 pts (Total) - or -

A = 10
B = 0
C = 0
D = 0
----
10 pts (Total) ... etc

17. It is important to perform in a manner consistent with:

A. the expectations of maximizing financial performance

B. the expectations of government and the law

C. the charitable and philanthropic expectations of society

D. the values and ethical standards of society

18. It is important to be committed to:

A. being as profitable as possible

B. charitable and voluntary activities

C. abiding by laws and regulations

D. moral and ethical behavior

19. It is important to:

A. recognize that the ends do not always justify the means

B. comply with various federal regulations

C. assist the fine and performing arts

D. maintain a strong competitive position

20. It is important that:

A. legal responsibilities be seriously fulfilled

B. long-term financial success be maximized

C. managers and employees participate in voluntary and charitable activities within their local communities

D. promises are not made which are not intended to be fulfilled

21. It is important to:

A. manage resources optimally as to improve profitability

B. promptly comply with new laws and regulations

C. explore new opportunities and programs which can improve urban and community life

D. recognize and respect new or evolving ethical/moral standards adopted by society

10. BUSINESS & SOCIETY .../cont'd

22. It is important to:

A. provide assistance to educational institutions

B. ensure a high level of operating efficiency is maintained

C. be a law-abiding corporate citizen

D. both offer and perform services in an ethically fair and responsible manner

23. It is important to:

A. pursue opportunities which will enhance financial performance

B. support diversity and equal opportunity initiatives

C. support, assist and work with local community-owned businesses

D. not compromise social standards and expectations in order to achieve corporate goals

24. It is important that a successful firm be defined as one which:

A. is consistently profitable

B. fulfills its legal obligations

C. fulfills its ethical and moral responsibilities

D. fulfills its charitable and philanthropic responsibilities

25. It is important to monitor new opportunities which can enhance the organization's:

A. moral and ethical image in society

B. compliance with local, state/provincial and federal laws

C. financial well-being

D. ability to help solve social problems

26. It is important that good corporate citizenship be defined as:

A. doing what the law expects

B. providing voluntary assistance to charities and community organizations

C. doing what is expected morally and ethically

D. being as profitable as possible

27. It is important to view:

A. charitable behavior as a useful measure of corporate performance

B. consistent profitability as a useful measure of corporate performance

C. compliance with the law as a useful measure of corporate performance

D. compliance with the standards, customs and unwritten laws of society as a useful measure of corporate performance

28. It is important to:

A. recognize that corporate integrity and ethical behavior go beyond mere compliance with laws and regulations

B. fulfill all corporate tax obligations

C. maintain a high level of operating efficiency

D. maintain a policy of increasing charitable and voluntary efforts over time

29. It is important to:

A. voluntarily assist those projects which enhance a community's 'quality of life'

B. both offer and perform services which at least meet minimum legal requirements

C. avoid compromising society's expectations and ethical values in order to achieve goals

D. efficiently manage organizational resources to enhance financial performance

30. It is important to:

A. pursue only those opportunities which provide the best rate of return

B. engage and participate in charitable and/or voluntary activities supported by the organization

C. comply fully and honestly with enacted laws, regulations, and court rulings

D. recognize that society's unwritten laws and codes can often be as important as the written

31. It is important that:

A. charitable and voluntary efforts continue to be expanded consistently over time

B. environmental, health and safety violations are not ignored in order to complete or expedite a project

C. financial health remains strong relative to major competitors

D. 'whistle blowing' not be discouraged at any corporate level

189

12. ENGAGEMENT (Section 3)

• BACKGROUND

The statements in Section 3 of this survey relate to your current views and expressed behaviors at work. These are reflections of your engagement level. Considering the amount of time spent at work daily, it is important to understand what drivers may support (or weaken) one's engagement.

Your responses are completely confidential and nobody within Enbridge will see individual survey replies. Please be honest and candid. Also, keep in mind that there is no right or wrong answer. This is about how you are currently feeling at work.

• INSTRUCTIONS

For each statement below, select the rating which best reflects your current opinion

32. I am proud to work for Enbridge

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	○	○	○	○	○	○	○

33. Overall, I enjoy working for my immediate supervisor

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	○	○	○	○	○	○	○

34. My job gives me a feeling of accomplishment

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	○	○	○	○	○	○	○

35. Overall, I am satisfied with my job

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	○	○	○	○	○	○	○

13. ENGAGEMENT .../cont'd

36. My job is interesting

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	◯	◯	◯	◯	◯	◯	◯

37. I am motivated to contribute more than what is expected of me in my job

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	◯	◯	◯	◯	◯	◯	◯

38. I am not currently planning on leaving Enbridge

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	◯	◯	◯	◯	◯	◯	◯

39. I would feel comfortable referring a good friend to Enbridge for employment

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Rating:	◯	◯	◯	◯	◯	◯	◯

14. YOU, THE INDIVIDUAL (Section 4)

• BACKGROUND

To complete the survey, this final section asks some basic questions about 'you' from a work and self perspective.

Your responses are completely confidential and nobody within Enbridge will see individual survey replies. Please be honest with your answers.

• INSTRUCTIONS

Please select the appropriate response for each question below

40. LOCATION

I work for Enbridge in the following country:

◯ Canada

◯ U.S.A.

41. WORK SITE

I spend MOST of my daily work hours in the:

◯ Field (Regional Office, Station and/or Terminal, RoW, Other Facilities, Equipment Sites/Locations, etc.)

◯ Office (Edmonton or Calgary or Superior Office, other similar Head Office, Control Center)

42. PEOPLE RESPONSIBILITY

I conduct AT LEAST one (1) annual performance review/evaluation of a full-time* Enbridge employee:

*NOTE:
- Part-time and temporary employees, contractors and co-op students are not considered 'full-time' in this study
- If a position reporting to you is currently vacant, but will end up being staffed by a full-time employee, please select 'True'

◯ True
◯ False

15. YOU, THE INDIVIDUAL .../cont'd

43. JOB FUNCTION

My job at Enbridge can BEST be described as:

- ◯ Administrative / Clerical
- ◯ Front-Line Employee (Production Team Member, Service Team Member, etc.)
- ◯ Professional / Specialist
- ◯ Supervisory (Coordinator, Manager, Supervisor, Team Leader, etc.)

44. TENURE

I have been working at Enbridge for:

Years

45. EDUCATION

My level and type of education can best be described as:

- ◯ Basic (high school or less)
- ◯ Post-Secondary (Technical) – apprenticeship program, trade school, technical institute, etc.
- ◯ Post-Secondary (Academic) – college, university, etc.

46. AGE

I was born in the following year:

Birth Year:

47. GENDER

- ◯ Female
- ◯ Male

16. THANK YOU!

You have reached the end of the survey.

- If you arrived here after answering all of the questions, we would like to sincerely thank you for your time and contribution to our research efforts.

- If you arrived here by electing to not participate in the study, we thank you for at least taking the time to gain a general understanding of what we are pursuing.

The research team would like to wish all of you a safe and wonderful summer!

Appendix B: Ethics Review Proposal

Ethics Review
Faculty of Engineering, University of Alberta

REQUEST FOR ETHICAL REVIEW OF ACTIVITIES INVOLVING HUMAN SUBJECTS

Specify Research Type: Dissertation Research (Ph.D)

Project Title:
A Study of Work Climate Perception, Engagement and Individual Characteristics and their Respective Impact on an Employee's Corporate Social Responsibility Orientation

Principal Investigator(s) and Degree(s):
Theophilos (Phil) Michailides
- Ph.D. Candidate (Engineering Management – Dept. of Mechanical Engineering)
- M.Eng. (Engineering Management – Dept. of Mechanical Engineering) – University of Alberta, 1990
- B.Sc. (Petroleum Engineering) - University of Alberta, 1988

Advisor (if applicable):
- Dr. Michael G. Lipsett, Ph.D., P.Eng. (co-advisor)
- Dr. Peter C. Flynn, Ph.D., P. Eng. (co-advisor)

Status or Rank:	**Office Phone:**
- Professor	(780) 492-9494
- Professor	(780) 492-6438
Department:	**Faculty:**
- Mechanical Engineering	Engineering
- Mechanical Engineering	Engineering
Building and Room:	
- MEC 5-1J	
- MEC 5-8J	
Sponsoring Agency:	**Budget:**
- None	N/A
Project Period:	**Budget Period:**
- June 1, 2010 to June 1, 2011	N/A

Please provide answers to all of the following questions. **All projects submitted for review must be typed (no handwritten proposals accepted)**. Only one copy is required and will be retained for the Ethics Committee files and eventually reproduced for Committee use.

PURPOSE, OBJECTIVES and EXTERNAL INTERACTIONS

1) **What are you doing?**
   - The primary intent of the research is to explore whether a relationship exists between an individual's perception of their work climate (i.e. from controlling to autonomy-supportive) and their expressed orientation to the business practice of corporate social responsibility (i.e. economic versus social alignment).
   - The secondary intent is to explore whether the variables of education level and age correlate to an individual's expressed corporate social responsibility orientation. This phase extends current knowledge of this relationship (i.e. confirmed at the board-room level across multiple industries) by exploring whether this connection also exists at lower-levels within the organizations' hierarchy.
   - These hypotheses will be differentially investigated amongst employees situated in either an office or field setting of a specific business unit within a leading North American energy delivery company. Specifically, the Liquids Pipelines (LP) business unit of Enbridge Inc., which has employees located both in Canada and the United States of America.
   - The Principal Investigator of this study is an active, full-time employee of Enbridge Inc. His current role is Manager, Technology Transfer of Enbridge Technology Inc., the international consultancy group within the Enbridge International Inc. business unit.
   - The proposed study has the full support of management within the International and Liquids Pipeline (LP) business units of Enbridge Inc.
   - The chosen test population within the LP business unit will also be demarcated and hypotheses-tested based on people-management responsibilities (i.e. front-line managers versus front-line employees).
   - A literature review will be undertaken to establish a comprehensive understanding of the key topics of interest, in addition to ensuring that the proposed research is novel and unique.
   - The following key academic domains will be explored during the literature review:
     - Corporate social responsibility;
     - Corporate social responsibility orientation;
     - Human motivation theories;
     - Self-determination theory, and;
     - Autonomy.
   - An individual's work climate perception will be measured via an already developed and tested survey tool found within the human motivation theory of self-determination. It is entitled the Work Climate Questionnaire.
   - An individual's corporate social responsibility (CSR) orientation will be measured via an already developed and tested survey tool which operationalizes a specifically-defined construct of CSR.
   - A set of questions related to employee engagement have also been incorporated within the proposed survey. Established questions, as introduced by The Conference Board, will be used to measure this variable. The hypothesis to be explored is that an employee's attitude to CSR is connected to their respective engagement level at work.
   - A set of questions has also been crafted to differentiate the test population (i.e. corporate and individual control variables) and will also form part of the proposed survey. The demographic variables include: country of work, work location, people responsibility, job function, tenure, education level and type, age and gender. The anticipated large sample size along with the confidentiality measures that will be adhered to throughout the study process will ensure that no individual and/or their respective replies can be identified.

- After the survey has been rolled-out to the test population, an analysis of the collected data will be undertaken to statistically prove and/or refute the proposed hypotheses. Generalizations and conclusions related to the findings will also be offered.
- Limits of the undertaken research, as well as recommendations for future research, will then be discussed and proposed respectively at the conclusion of the study.

2) **Why? What benefits are there to the participants, to society, or to further research? What are you trying to find out?**
- More and more companies are embracing the principles of corporate social responsibility (CSR) and embedding them within their business practices. In doing so, they are relying heavily on their personnel to champion the ideologies, values and actions that are communicated and promised to external stakeholders. Beyond the philanthropic initiatives and well crafted policies originating at the corporate level, expectations have evolved further whereby front-line staffs (both in office and field settings) are asked to perform their day-to-day activities in a manner that is aligned with the CSR responsibilities the company has committed to. Essentially, walking the talk.
- In light of this, it is critical for the corporation to understand whether certain workplace variables and/or individual characteristics impact (both positively and/or negatively) the CSR attitudes of front-line personnel. The specific variables explored in this research include perceived work climate, education level and age, both in an office and field setting. Front-line manager and front-line employee perspectives are also gathered and analyzed within this research.
- The anticipated benefits for CSR-driven corporations, and in turn, society because of advancements and refinements to existing CSR practices, include:
    - Insights into the envisioned relationship between perceived work climate and CSR orientation, which also indirectly highlights the importance management style may play on employee acceptance of higher-order CSR responsibilities (e.g. philanthropic and ethical as opposed to economic and legal);
    - An understanding of the significance education level has towards CSR orientation, as it is still commonplace for personnel with a high-school background to interface daily with employees with university degrees;
    - An understanding of the significance that age has towards CSR orientation, as corporations are faced with addressing the many and often diverse needs of the multi-generational workforce;
    - With this knowledge in hand, 'tailor made' human resource strategies can be crafted to address the findings with the goals of employee retention and enhanced engagement as their drivers.

3) **Where will the study take place?**
- Enbridge Inc. is the company which has allowed its' staff to participate in the proposed research via completion of a survey administered online.
- The test population resides exclusively within the Liquids Pipelines (LP) business unit. Enbridge Inc.'s other business units will not participate in the study.
- Executive and senior management personnel of Enbridge Inc. and the LP business unit <u>will not</u> participate in the study. Only the opinions and perspectives of front-line personnel are of interest within this study.
- The test population is dispersed across Canada and the United States of America.
- Personnel in both head-office and field LP locations will participate.

3

- The LP Operations group represents the field perspective within the study, both at the front-line manager and front-line employee level.
- The aggregate summary of the functional groups below will represent the LP office perspective within the survey (i.e. both at the front-line manager and front-line employee level):
  - Business Development, Customer Service, Engineering and System Integrity, Finance, Public and Governmental Affairs, Information Technology, Law and Regulatory Affairs and Human Resources.

4) **How are you going to do it (e.g., interviews, physical testing, videotaping, etc.)?**
- A survey has been prepared to gather the respondents opinions on the following concepts:
  - Workplace Climate Perceptions
  - Corporate Social Responsibility Orientation
  - Engagement Level at Work
- These three (3) specific sections of the survey all call upon existing questionnaires which have been proven to be statistically valid, reliable and often used in their respective research areas. Very minor adjustments to the text within these surveys had to be undertaken to ensure the language is both 'modern' and understandable for the proposed test population.
- The final section of the survey will ask respondents to provide demographic information about themselves (i.e. both corporate and individual based).
- The survey will be launched and managed via an online survey tool (i.e. SurveyMonkey).
- The enhanced security option (i.e. SSL encryption-based) offered by SurveyMonkey has been purchased and will be engaged throughout the survey process to ensure that the privacy and confidentiality of every submitted response, from each participant, is upheld.
- Survey participation, which is completely voluntary, will also be founded upon the premise of anonymity as participants' names are not solicited at anytime.
- Participants are also continuously assured (i.e. within the survey) that their responses are completely confidential and that nobody within Enbridge Inc. will see individual replies and/or surveys.
- Additionally, within the text of the opening email introducing the scope of the study, it is explained to the participants that the study is strictly for academic purposes and is in no-way connected to any other corporate Enbridge Inc. survey initiative (i.e. existing and/or proposed).
- The Principal Investigator associated with this study will be the only one to collect, handle, encode, statistically analyze and report on the submitted survey data (i.e. in aggregate fashion).

5) **How long will it take (each part of the study; total time required of participants)?**
- The following timeline estimates are currently envisioned:

Finalize Survey Questions	Completed
Transfer Questionnaire to Online-Survey Site (SurveyMonkey)	By May 16, 2010
Functionality & Time-Trial Test of Online-Survey Within a Test Group	By May 21, 2010
Survey Notification to ENB LP Exec./Sr. Management	May 25, 2010
Survey Introduction to Test Population	May 31, 2010
Launch On-Line Survey to Test Population	June 07, 2010
Estimated Total Time to Complete the Survey: 20 minutes (to be confirmed during the time trials)	
Reminder Notification to Test Population	June 14, 2010
Survey Closed & Thank You Email to Test Population	June 21, 2010
Detailed Analysis of Survey Data	Jul-Nov, 2010

4

| Preliminary Findings Presentation (to study advisors & ENB LP Mgmt.) | Nov-Dec, 2010 |
| Complete Dissertation Write-Up | By Q1-2011 |

6) **Is the activity directly funded? If so, provide brief details of the arrangements.**
   - The only secured funding arrangement is with Enbridge Inc., which is simply an expense-reimbursement based agreement.
   - The Enbridge 'Education Refund Plan' is a corporate-wide program aimed at encouraging employees to upgrade their skills and knowledge (i.e. career development).
   - Financial sponsorship is offered for external courses/programs pre-approved by one's immediate supervisor. This noted pre-approval is in-place for this specific study.
   - All fees, tuition, textbooks and relevant associated costs are initially paid by the employee. These expenses are then reimbursed upon successful completion of the pre-approved course(s).

7) **Might any of the research team have, or be reasonably perceived to have, a conflict of interest, including personal, family or financial interests, in the research? If so, explain the situation in detail.**
   - None is evident, perceived or anticipated with this research.

DESCRIPTION OF METHODOLOGY AND PROCEDURES

8) **Where will the project be conducted (room number or area; if not U of A location, site authorization allowing this research must be provided)?**
   - The online survey and gathered responses will be developed, administered and statistically analyzed in Room #1638 of the Enbridge Tower (10201 Jasper Avenue, Edmonton, AB) by the Principal Investigator.
   - Authorization for this to occur has been granted by the Principal Investigator's immediate supervisor at Enbridge Inc. (see Attachment 'A').
   - The collected replies will not contain any personal information associated with the survey participant. The information requested in the survey will not allow for the identification of any individual. Regardless of this assurance, all data (i.e. whether in electronic or hard-copy format) will remain locked in an assigned drawer at the above-noted office location.
   - Participants of the research will complete the online survey either at their individual work location, or at home during non-working hours.

9) **How will the project be explained to the subjects?**
   - Individuals within the test population will be sent an introductory e-mail complete with a link to the online survey website. Once re-directed to the website, they will immediately be introduced to the scope, intent and contents of the study.
   - The Participant Information Letter (see Attachment 'B') will act as this specific explanatory mechanism for the survey.

10) **If the subjects are minors, how will assent be secured?**
   - Not applicable. No minors are employed within the test population.

11) **How will you make it clear to the subjects that their participation is voluntary and that they may withdraw from the study at any time they wish to discontinue participation?**

5

- Individuals within the test population will be sent an introductory e-mail complete with a link to the online survey website. Once re-directed to the website, they will immediately be introduced to the scope, intent and contents of the study (i.e. via the Participant Information Letter, which has been attached for your reference).
- If an individual would like to withdraw from the survey <u>after</u> reading the Participant Information Letter, they may do so by either simply closing the web-browser or choosing "No Thanks" to proceeding with the survey (i.e. an option to be shown immediately after the introductory comments).
- Additionally, a potential participant may decide to not even re-direct himself to the survey website by simply not responding to, or deleting, the introductory email that will be sent.

12) **Will your project utilize (check):**
   - Questionnaires – Yes (see Attachment 'C', which is in an unformatted state)
   - Interviews – No (not utilized in the study)
   - Observations – No (not utilized in the study)
   - Medical records review – No (not utilized in the study)

PERSONNEL

13) **Describe the qualifications of research personnel if special conditions exist within the research that could cause physical or psychological harm, or if participants require special attention because of physical or psychological characteristics, or if made advisable by other exigencies**
   - Physical and/or psychological harm to survey participants is not anticipated.
   - Special attention to the needs of survey participants is also not anticipated.
   - All the questions within the survey are either opinion or demographic based. As a result, this should not place any undue stress or harm on the participant. Continual assurance that Enbridge Inc. will not be privy to any individual responses should help alleviate any concerns regarding confidentiality. If it does not, they can elect to not participate in the study from the onset.
   - As such, no unique qualifications are required by the research personnel if such special conditions existed or were anticipated.

DESCRIPTION OF POPULATION

14) **Number of subjects to be involved:**
   - A preliminary size estimate of the proposed test population (i.e. within the Liquids Pipeline business unit of Enbridge Inc.) is 2,500 people.

15) **Description of population to be recruited and rationale for their participation (indicate age range):**

Company	Enbridge Inc.
Business Unit (BU)	Liquids Pipelines (LP)
Countries	Canada, U.S.A.
Functional Groups	
Field Staff	LP Operations
Office Staff	LP Business Development + LP Customer Service + LP Engineering & System Integrity + LP Finance +

6

200

	LP Public and Governmental Affairs + LP Information Technology + LP Law & Regulatory Affairs + LP Human Resources
Included in Test Population	- Front-Line Managers (Field) - Front-Line Employees (Field) - Front-Line Managers (Office) - Front-Line Employees (Office)
Excluded from Test Population	- Enbridge Executive Leadership Team - Enbridge Corporate Leadership Team - Enbridge LP Senior Leadership Team - Enbridge LP Senior Management Team - Corporate Finance BU - Corporate Development BU - Gas Transportation & International BU - Major Projects BU - Corporate Public & Governmental Affairs BU - Corporate Information Technology BU - Corporate Law BU - Corporate Human Resources & Admin BU

- Test population chosen on the rationale that perspectives from the 'front-line' are sought
- Age Range of Test Population: $18 - 60^+$ years

16) How are the subjects being recruited?
- Individuals identified within the test population parameters above (i.e. #15) will be sent an e-mail connecting them to the online survey website.
- They will immediately be introduced to the scope and intent of the study. The Participant Information Letter template will serve as this introduction to the survey.
- If an individual would like to withdraw from the survey after reading the Participant Information Letter, they may do so by either simply closing the web-browser or choosing "No Thanks" to proceeding with the survey which will be shown immediately after the introductory comments.

17) What are the criteria for their selection?
- The intent of the research is to garner opinions and perceptions of personnel at the "front-line" of an organization, along with their pertinent demographic information.
- Further, a clustering of the participants into managerial, employee, office and/or field groups is desired for analytical and explanatory purposes tied back to the proposed hypotheses.

DATA

18) Who will have access to the gathered data?
- Collected replies/data from the survey will be accessed and handled only by the Principal Investigator of the study.
- Individual replies/data will not be made available to the study's Advisors.
- Individual replies/data will not be made available to any Enbridge Inc. personnel (i.e. other than the Principal Investigator who is an employee of Enbridge Inc.).

7

- It is envisioned that aggregated findings and observed trends will be shared with the study's advisors and senior management of Enbridge Inc.
- If requested by survey participants, a high-level summary of observed trends/themes can be made available as compensation for participation in the study.

19) **How will confidentiality of the data be maintained?**
- All responses to the online survey will remain confidential as requests for name, business function and/or specific workplace locations will not be solicited.
- Gathered survey replies will be numerically coded at the source of entry (i.e. SurveyMonkey) and will continue to remain numerically coded throughout the statistical analysis phase to maintain anonymity of the individual participant.
- If a third-party software is utilized for more detailed statistical analysis, the raw data from SurveyMonkey will be transferred in such a way that the numerical coding/linkage remains in-tact, and thus, maintains the confidentiality provisions herein.
- Individual replies will never be released in any way, shape or form to any party and/or publication. The premise of the study is founded upon aggregated themes and correlations found in field and office settings.
- The office setting will be analyzed as the sum of the following sub-groups within the LP business unit: Business Development + Customer Service + Engineering & System Integrity + Finance + Public and Governmental Affairs + Information Technology + Law & Regulatory Affairs + Human Resources. Reference to, and analysis of, replies, themes and trends within any office 'sub-group' will not be pursued or discussed within the scope of this study.
- The individual replies will be initially housed within the online survey tool. The Principal Investigator is the only one with knowledge of the login identification and password to access the data. This approach will remain in-tact for the complete duration of the study.
- The same logic will apply if, and likely when, the raw data is transferred to a third-party statistical analysis tool.
- If data is transferred to a memory stick, or is printed in hard-copy, these medium will be locked in an assigned desk drawer at the office of the Principal Investigator.
- It is envisioned that all data, regardless of where it resides, will be destroyed five (5) years after the completion of the Ph.D. dissertation of the Principal Investigator.

20) **How will the data be recorded (instruments, notes, etc.)?**
- All data received from the participants will be recorded in electronic format within the online survey tool that will be deployed to the test population.

21) **What are the plans for retention of data?**
- All data (i.e. electronic and/or hard-copy), will be retained for a period of five (5) years after completion of the Ph.D. dissertation of the Principal Investigator.
- Security protocols will be instituted as such:
  - SurveyMonkey Login ID & Password: access by Principal Investigator only
  - Statistical Analysis S/W Login ID & Password: accessed by Principal Investigator only
  - Miscellaneous Spreadsheets: Password protected (accessed by Principal Investigator only)
  - Memory Stick & Hard-Copies: Locked in assigned desk drawer of Principal Investigator

22) **What are the plans for future use of data beyond this study?**
- None.

8

23) **How will the data be destroyed and at what point in time?**
   - All electronic data will be erased from the hardware and/or software it resides on.
   - All hard-copy data will be shredded.
   - Data destruction will occur five (5) years after completion of the Ph.D. dissertation of the Principal Investigator.

24) **Where will the signed consent forms be stored (list administrative office and room number)?**
   - Individuals who chose to participate in the survey will be doing so on their own volition. Any individual within the test population can refuse participation by simply not connecting to the online survey web-link that they will be receiving within the introductory email they would have received. Additionally, they may simply delete this introductory email if they elect to not participate in the study.
   - The introductory email itself will state clearly that participation is completely voluntary and that participants may elect to withdraw at any time, if so desired.
   - Additionally, participants will be given a 'formal' opportunity to not participate immediately after the scope, intent and contents of the study (i.e. via the Participant Information Letter) are presented to them on the online survey website. They simply can choose "No Thanks" to proceeding with the survey, a selection option shown immediately after the introductory comments are presented to them.
   - Participants can also decide to not participate while they are on the online survey website, by simply closing the web-browser at any point during the survey process (i.e. even after entering the survey itself).
   - As such, <u>formal consent forms from individual participants are not deemed necessary and will not be sought</u>. The opportunity to depart the study will always be available to the participant. Similarly, implicit consent acknowledgement will be realized when the participant selects "Proceed To Survey" immediately after the introductory comments section.

BENEFITS, COSTS, RISKS

25) **What are the potential benefits to the subjects?**
   - An understanding of the impact that managerial style has to an employee's corporate social responsibility (CSR) attitude.
   - An awareness of potential differences that may exist between office and field personnel in the aforementioned relationship, as well as potential variations amongst managers and employees at the front-line level of an organization.
   - Generalized knowledge of the impact that education level and age has on one's attitude to the construct of CSR.
   - Eventual opportunities to participate in 'tailor made' human resource programs/initiatives which are developed to address the anticipated variability of the findings, and whose prime intention is to bolster employee retention and engagement through stronger connections to the company's CSR platform (i.e. especially the higher-order CSR responsibilities).

26) **What may be revealed that is not currently known?**
   - A direct, inverse or neutral relationship between perceptions of workplace climate and an individual's orientation to the responsibilities associated with corporate social responsibility (i.e. at the front-line employee level).

9

- A direct, inverse or neutral relationship between noted personal engagement levels and one's orientation to the responsibilities associated with corporate social responsibility (i.e. at the front-line employee level).
- A direct, inverse or neutral relationship between an individual's level and type of education and their orientation to the responsibilities associated with corporate social responsibility (i.e. at the front-line employee level).
- A direct, inverse or neutral relationship between an individual's age and their orientation to the responsibilities associated with corporate social responsibility (i.e. at the front-line employee level).

27) **Will monetary or other compensation be offered to the subjects?**
- Survey participants, on an as-requested basis, will be granted a high-level aggregated summary of observed trends/themes (i.e. at completion of the study).
- Beyond this, no other form of compensation is offered to the subjects with this study.

28) **What are the costs to the subjects (monetary, time)?**
- The only cost foreseen is that of time spent completing the survey by the participants (i.e. approximately 20 minutes).
- Since this is an online survey, the participants may elect to complete the survey outside of working hours to minimize any interruptions to their daily work routines, if necessary.
- The participant's employer, Enbridge Inc., is supportive of the survey being completed during, or outside of, normal working hours.

29) **What specific risks to the subject are most likely to be encountered (physical, psychological, sociological)? If none, state none.**
- None, as only personal opinions and demographic data are being gathered.

30) **What approach will you make to minimize the specific risks?**
- The following assurances and practices will be communicated and enforced to manage any perceived risks that may be associated with the study:
  - Anonymity of survey participants;
  - Privacy, confidentiality and security of individual responses from survey participants;
  - Access, handling and manipulation of individual replies will only be done by the Principal Investigator;
  - Study Advisors and Enbridge Inc. will not have access to any individual replies;
  - Only aggregated findings and observed trends will be shared with the study's Advisors and senior management of Enbridge Inc. (note: this does not include analysis and discussion of 'sub-groups' within the office setting of the Liquids Pipelines BU);
  - Survey participants, on an as-requested basis, will be granted a high-level aggregated summary of observed trends/themes; however, their individual replies will not be released.
  - All data (i.e. electronic and/or hard-copy) will be retained for a period of five (5) years after completion of the Ph.D. dissertation of the Principal Investigator.
  - Security protocols will be instituted as such:
    - SurveyMonkey Login ID & Password: access by Principal Investigator only
    - Statistical Analysis S/W Login ID & Password: accessed by Principal Investigator only

10

- Miscellaneous Spreadsheets: Password protected (accessed by Principal Investigator only)
- Memory Stick & Hard-Copies: Locked in assigned desk drawer of Principal Investigator
  - All electronic data will be erased from the hardware and/or software it resides on. All hard-copy data will be shredded. Data destruction will occur five (5) years after completion of the Ph.D. dissertation of the Principal Investigator.

11

205

ATTACHMENT 'A'

SITE AUTHORIZATION LETTER

12

Bill Trefanenko
Director,
International Operations
Tel   403 231 4841
Cel   403 542 5376
Fax   403 231 4842
bill.trefanenko@enbridge.com

ENBRIDGE

memo

File Number: N/A

Date: 20100430

To: Phil Michailides

From: Bill Trefanenko

Re: Office Usage

As part of your leave of absence to complete your thesis requirements for your PhD, I am granting you permission to use your current office at Room #1638 in the Enbridge Tower (10201 Jasper Avenue, Edmonton, AB) to develop, gather, administer and analyze your online survey results.

I wish you the best of luck in this exciting project.

Bill Trefanenko

ATTACHMENT 'B'

PARTICIPANT INFORMATION LETTER

13

Participant Information Letter

Title of the Project
A Study of Work Climate Perception, Engagement and Individual Characteristics and their Respective Impact on an Employee's Corporate Social Responsibility Orientation

Principal Investigator
Phil Michailides, P.Eng.
Ph.D. Candidate - Engineering Management Program, University of Alberta

- and -

Manager, Technology Transfer
Enbridge Technology Inc.
Edmonton, Alberta
(780) 420-8626

Advisors

Dr. Peter C. Flynn, Ph.D., P.Eng.	Dr. Michael G. Lipsett, Ph.D., P.Eng.
Professor – Engineering Management	Professor – Engineering Management
University of Alberta	University of Alberta
(780) 492-6438	(780) 492-9494

Introduction
Welcome and thank you for your interest in our academic research. The next few paragraphs will provide you with some insights and information to further your understanding of what we are trying to achieve. Following this, you will be invited to participate in our study by filling out a questionnaire online. Your involvement is completely voluntary. The obtained results and findings are for the sole purpose of completing a graduate level thesis. We look forward to you taking part in our efforts and thank you in advance for completing the survey. If you should have any questions or concerns, please contact the individual shown in the Additional Contacts section of this Participant Information Letter.

Purpose
The primary goal of this study is to better understand how an employee's personal opinion towards corporate social responsibility (CSR) may be influenced by the workplace and his/her own individual characteristics. The survey data collected will be analyzed on a collective basis to establish the existence of potential relationships between these variables, both in the field and office setting. As pointed out earlier, this study is being carried out for the sole purpose of completing a graduate level thesis.

Enbridge Inc., a globally recognized leader in the CSR arena, is fully supportive of this research initiative. It should be made perfectly clear though that this study is in no way connected to any other Enbridge Inc. employee study (i.e. past, present or upcoming/proposed). It is a standalone project where only the findings in aggregate format will be presented to senior management for their awareness and understanding. This ensures that the privacy and confidentiality of every participant, and his/her individual survey replies, is maintained throughout the study.

Background
More and more companies are embracing the principles and practices of corporate social responsibility (CSR). CSR-leading companies have a large number of employees who recognize, align with and enact upon the values and commitments that are communicated by the company to its stakeholders. To nurture this even further, it would be advantageous to understand what variables promote (or discourage) the 'amount of connection' one makes to the core concepts underlying the CSR ideal. This is especially important at the front-line level of the company, as interactions with a variety of external stakeholders occur on a daily basis (i.e. both in the office and field). Confirmation of the existence of such relationships will not only provide a company with CSR 'preference' summaries of key employee segments/groups, it will also foster the creation of tailor-made initiatives aimed at broadening the connections one makes to all the elements within a CSR portfolio. Ultimately, the interaction between business and society is strengthened with such knowledge and proactive actions.

Test Population
The test population recruited for this research all reside within the Enbridge Liquids Pipelines (LP) business unit only, both in Canada and the U.S.A. The functional groups of interest to this study include:

- Field Personnel   =   Operations
- Office Personnel   =   Business Development + Customer Service + Engineering & System Integrity + Finance + Public & Governmental Affairs + Information Technology + Law & Regulatory Affairs + Human Resources

Personnel within each of these groups will be further divided into the following categories for assessment purposes:

- Front-Line Managers (office & field)
- Front-Line Employees (office & field)

Online Survey
By your arrival to this website, and this Participant Information Letter, *we would like to invite you to participate in our study* by completing an online web survey. It is comprised of four (4) specific sections. Each section starts out with a general explanation of what is being explored. Instructions on how to complete each section are also provided. The four sections of the survey include:

- Work Climate Perceptions;
- Social Responsibility Orientation;
- Engagement;
- Demographic Variables.

Participation in the study will afford you the opportunity to receive an aggregated-summary of the key trends (themes) that were uncovered. This will be granted at the completion of the study.

The only commitment we seek is the time you spend to complete the survey in one (1) sitting. Since this is an online survey, you may elect to complete it outside of work hours to minimize

2

210

any interruption to your daily work routines. Enbridge Inc. is supportive of the survey being completed during, or outside of, normal working hours.

No other risks, discomforts or inconveniences are foreseen with your participation in this survey.

Confidentiality
All responses to the online survey will remain strictly confidential at all times. The gathered replies will be numerically coded at the source of entry. They will continue to remain numerically coded throughout the statistical analysis phase to maintain the anonymity of the participants. The Principal Investigator is the only individual in the research project who will access, manage and assess the survey data.

Both of the Advisors and Enbridge Inc. (i.e. excluding the Principal Investigator who is an employee of Enbridge Inc.) will not be granted access to any data obtained from the study. Aggregated results are all that will be made publicly available, including to Enbridge Inc.

Individual survey participants and/or their replies will not be identified in any future presentation or publication. The premise of the study is strictly founded upon aggregated themes and correlations at the field and office level. Reference to, and analysis of, replies, themes and trends within any of the proposed office 'sub-groups' in the test population will not be undertaken in this study.

Individual replies will be housed within the online survey tool. The Principal Investigator is the only one with knowledge of the login identification and password to access the data. This approach will remain in-tact for the complete duration of the study. This same logic will apply if, and likely when, the raw data is transferred to a third-party statistical analysis tool.

To ensure confidentiality even further, any data that may be transferred to a memory stick or ends up being printed will be coded and stored in a locked cabinet/drawer to which only the Principal Investigator will have access. Information is normally kept for a period of five (5) years after publication, after which it will be destroyed.

Freedom to Withdraw
Your participation in this study is completely voluntary. There is no obligation to participate and you are free to withdraw yourself from the process at anytime. If you decline to continue or you wish to withdraw from the study, your information will be removed from the study upon your request.

Additional Contacts
If you have concerns about this study, you may contact Dr. James Miller, Chair of the Engineering Faculty Ethics Committee, University of Alberta, at (780) 492-4443. Dr. Miller has no direct involvement with this project.

Proceed To Survey   No Thanks

3

211

ATTACHMENT 'C'

RESEARCH QUESTIONNAIRE (UNFORMATTED)

WORKPLACE

This section of the survey contains items that are related to your experiences with the individual who is your most immediate (direct) supervisor at work. All supervisors have different styles in dealing with employees. I would like to know more about how you have felt about your encounters with your most immediate supervisor. Your responses are completely confidential and nobody within Enbridge will see individual survey replies. Please be honest and candid. Also, keep in mind that there is no right or wrong answer. This is about how you feel personally.

INSTRUCTIONS:
For each statement below, select the number on the scale which best reflects your current opinion

1. I feel that my immediate supervisor provides me choices and options at work						
1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

2. I feel understood by my immediate supervisor						
1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

3. I am able to be open with my immediate supervisor at work						
1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

4. My immediate supervisor expresses confidence in my ability to do well at my job						
1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

Research Questionnaire (Unformatted)

5. I feel that my immediate supervisor accepts me

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

6. My immediate supervisor makes sure I really understand the goals of my job and what I need to do

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

7. My immediate supervisor encourages me to ask questions

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

8. I feel a lot of trust in my immediate supervisor

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

9. My immediate supervisor answers my questions fully and carefully

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

10. My immediate supervisor listens to how I would like to do things

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

11. My immediate supervisor handles people's emotions very well

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

Research Questionnaire (Unformatted)

12. I feel that my immediate supervisor cares about me as a person

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

13. I don't feel very good about the way my immediate supervisor talks to me

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

14. My immediate supervisor tries to understand how I see things before suggesting a new way to do things

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

15. I feel able to share my feelings with my immediate supervisor

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

Research Questionnaire (Unformatted)

215

SECTION 2 (Questions 16 – 30)

BUSINESS & SOCIETY

Section 2 of this survey contains statements related to the interactions between business and society. Specifically, the many issues and responsibilities a company deals with when conducting its' day-to-day business activities. All companies respond to these demands differently. I would like to understand the importance of these issues from your own personal point of view. Your responses are completely confidential and nobody within Enbridge will see individual survey replies. Again, I ask that you please be honest and candid with your answers. There is no right or wrong response as I am interested in your personal opinion exclusively.

INSTRUCTIONS:

*Based on its importance to **you**, allocate up to, **but not more than**, ten (10) total points to each set of four statements. For example, you might allocate points as such:*

A = 4		*A = 1*		*A = 1*	
B = 3		*B = 2*		*B = 5*	
C = 2	*or*	*C = 0*	*or*	*C = 3*	*etc.*
D = 1		*D = 7*		*D = 1*	
Total = 10 pts		*Total = 10 pts*		*Total = 10 pts*	

---

16. It is important to perform in a manner consistent with:

_____A. the expectations of maximizing financial performance
_____B. the expectations of government and the law
_____C. the charitable and philanthropic expectations of society
_____D. the values and ethical standards of society

 _10_ = Total Points

---

17. It is important to be committed to:

_____A. being as profitable as possible
_____B. charitable and voluntary activities
_____C. abiding by laws and regulations
_____D. moral and ethical behavior

 _10_ = Total Points

---

18. It is important to:

_____A. recognize that the ends do not always justify the means
_____B. comply with various federal regulations
_____C. assist the fine and performing arts
_____D. maintain a strong competitive position

_10_ = Total Points

19. It is important that:

_____A. legal responsibilities be seriously fulfilled
_____B. long-term financial success be maximized
_____C. managers and employees participate in voluntary and charitable activities within their local communities
_____D. promises are not made which are not intended to be fulfilled

_10_ = Total Points

20. It is important to:

_____A. manage resources optimally as to improve profitability
_____B. promptly comply with new laws and regulations
_____C. explore new opportunities and programs which can improve urban and community life
_____D. recognize and respect new or evolving ethical/moral standards adopted by society

_10_ = Total Points

21. It is important to:

_____A. provide assistance to educational institutions
_____B. ensure a high level of operating efficiency is maintained
_____C. be a law-abiding corporate citizen
_____D. both offer services and perform them in an ethically fair and responsible manner

_10_ = Total Points

22. It is important to:

_____A. pursue opportunities which will enhance financial performance
_____B. support diversity and equal opportunity initiatives
_____C. support, assist and work with local community-owned businesses
_____D. not compromise social standards and expectations in order to achieve corporate goals

_10_ = Total Points

Research Questionnaire (Unformatted)

217

23. It is important that a successful firm be defined as one which:

_____A. is consistently profitable
_____B. fulfills its legal obligations
_____C. fulfills its ethical and moral responsibilities
_____D. fulfills its charitable and philanthropic responsibilities

_10_ = Total Points

---

24. It is important to monitor new opportunities which can enhance the organization's:

_____A. moral and ethical image in society
_____B. compliance with local, state/provincial and federal laws
_____C. financial well-being
_____D. ability to help solve social problems

_10_ = Total Points

---

25. It is important that good corporate citizenship be defined as:

_____A. doing what the law expects
_____B. providing voluntary assistance to charities and community organizations
_____C. doing what is expected morally and ethically
_____D. being as profitable as possible

_10_ = Total Points

---

26. It is important to view:

_____A. charitable behavior as a useful measure of corporate performance
_____B. consistent profitability as a useful measure of corporate performance
_____C. compliance with the law as a useful measure of corporate performance
_____D. compliance with the standards, customs and unwritten laws of society as a useful
measure of corporate performance

_10_ = Total Points

---

27. It is important to:

_____A. recognize that corporate integrity and ethical behavior go beyond mere compliance with
laws and regulations
_____B. fulfill all corporate tax obligations
_____C. maintain a high level of operating efficiency
_____D. maintain a policy of increasing charitable and voluntary efforts over time

_10_ = Total Points

Research Questionnaire (Unformatted)

28. It is important to:

_____A. voluntarily assist those projects which enhance a community's 'quality of life'
_____B. both offer and perform services which at least meet minimum legal requirements
_____C. avoid compromising society's expectations and ethical values in order to achieve goals
_____D. efficiently manage organizational resources to enhance financial performance

_10_ = *Total Points*

29. It is important to:

_____A. pursue only those opportunities which provide the best rate of return
_____B. engage and participate in charitable and/or voluntary activities supported by the organization
_____C. comply fully and honestly with enacted laws, regulations, and court rulings
_____D. recognize that society's unwritten laws and codes can often be as important as the written

_10_ = *Total Points*

30. It is important that:

_____A. charitable and voluntary efforts continue to be expanded consistently over time
_____B. environmental, health and safety violations are not ignored in order to complete or expedite a project
_____C. financial health remains strong relative to major competitors
_____D. 'whistle blowing' not be discouraged at any corporate level

_10_ = *Total Points*

Research Questionnaire (Unformatted)

219

SECTION 3 (Questions 31 – 38)

ENGAGEMENT

The statements in Section 3 of this survey relate to your current moods and expressed behaviors at work. These reflect your engagement level. Considering the amount of time spent at work daily, it is important to understand what drivers may support or weaken engagement levels. Your responses are completely confidential and nobody within Enbridge will see individual survey replies. Please be honest and candid. Also, keep in mind that there is no right or wrong answer. This is about how you are currently feeling at work.

INSTRUCTIONS:
For each statement below, select the number on the scale which best reflects your current opinion

31. I am proud to work for Enbridge						
1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

32. Overall, I enjoy working for my immediate supervisor						
1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

33. My job gives me a feeling of accomplishment						
1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

34. Overall, I am satisfied with my job						
1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐
Strongly Disagree			Neutral			Strongly Agree

Research Questionnaire (Unformatted)

220

35. My job is interesting
1   2   3   4   5   6   7 ☐   ☐   ☐   ☐   ☐   ☐   ☐ Strongly   Neutral   Strongly Disagree   Agree
36. I am motivated to contribute more than what is expected of me in my job
1   2   3   4   5   6   7 ☐   ☐   ☐   ☐   ☐   ☐   ☐ Strongly   Neutral   Strongly Disagree   Agree
37. I am not currently planning on leaving Enbridge
1   2   3   4   5   6   7 ☐   ☐   ☐   ☐   ☐   ☐   ☐ Strongly   Neutral   Strongly Disagree   Agree
38. I would feel comfortable referring a good friend to Enbridge for employment
1   2   3   4   5   6   7 ☐   ☐   ☐   ☐   ☐   ☐   ☐ Strongly   Neutral   Strongly Disagree   Agree

Research Questionnaire (Unformatted)

221

SECTION 4 (Questions 39 – 46)

YOU, THE INDIVIDUAL

To complete the survey, this final section asks some basic questions about 'you' from a work and individual (self) perspective. Your responses are completely confidential and nobody within Enbridge will see individual survey replies. Please be honest with your answers.

THANK YOU FOR YOUR ASSISTANCE WITH THIS SURVEY!

INSTRUCTIONS:
Please select the appropriate response for each question below

---

39. LOCATION

I work for Enbridge in the following country:

☐ Canada
☐ USA

---

40. WORK SITE

I spend <u>most</u> of my daily work hours in the:

☐ **Field** *(field office, stations and/or terminals, RoW, other facilities, equipment sites/locations, etc.)*
☐ **Office** *(Edmonton, Calgary, Sherwood Park, Superior or other similar head office, control center)*

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41. PEOPLE RESPONSIBILITY

I conduct <u>at least</u> one (1) annual performance review of a full-time Enbridge employee*:

☐ True
☐ False

* *- Part-time or temporary employees, contractors and/or co-op students are not classified as full-time employees in this survey*
* *- If all of your direct reports are currently vacant, but will be eventually staffed by full-time employees, please select <u>True</u>*

Research Questionnaire (Unformatted)

42. JOB FUNCTION

My job at Enbridge can <u>best</u> be described as:

- ☐ Administrative / Clerical
- ☐ Front-Line Employee (Production Team Member, Service Team Member, etc.)
- ☐ Professional / Specialist
- ☐ Supervisory (Coordinator, Manager, Supervisor, Team Leader, etc.)

43. TENURE

I have been working at Enbridge for (respond in years <u>or</u> months) _____ ☐ years
 ☐ months

44. EDUCATION

My level of education can <u>best</u> be described as:

- ☐ Basic – *high school or less*
- ☐ Post-Secondary (Technical) – *apprenticeship program, trade school, technical institute, etc.*
- ☐ Post-Secondary (Academic) – *college, university, etc.*

45. AGE

I was born in the following year: _____

46. GENDER

- ☐ Female
- ☐ Male

Research Questionnaire (Unformatted)

April, 2010

Dissertation Overview

Phil Michailides

Presentation Outline

- Fields of Study

- Research Objectives

- Research Framework (Raw)

- Control Variables & Hypotheses

- Research Framework (Refined)

Presentation Outline …cont'd.

- Research Instrument

- Proposed Test Population

- Next Steps

- Q & A

Fields of Study

- Corporate Social Responsibility (CSR)
  - The Pyramid of CSR
  - The CSR Orientation (CSRO) tool

- Human Motivation
  - Self-Determination Theory
  - 3 innate & universal needs
  - Autonomy, competence & relatedness
  - Optimal functioning & growth

Research Objectives

- Personal Interests

  - The transformation of the workplace

    - Human capital (knowledge workforce)

    - Social responsibility awareness & importance

    - Changing workforce dynamics/expectations

Research Objectives ...cont'd.

- Benefits to Enbridge Inc.

  - Work climate insights (management styles)

  - Mapping the CSRO landscape (alignment gauge)

  - Demographic impacts and variability

  - Development of HR strategies to address findings (retention, engagement)

Research Framework (Raw)

CSR Orientation

- Discretionary Dimension
- Ethical Dimension   } **Social Orientation**
- Legal Dimension

- Economic Dimension ⟶ **Economic Orientation**

Work Climate Perception

- Autonomy Supportive
- Controlling

Control Variables

- Corporate Demographics
- Individual Demographics
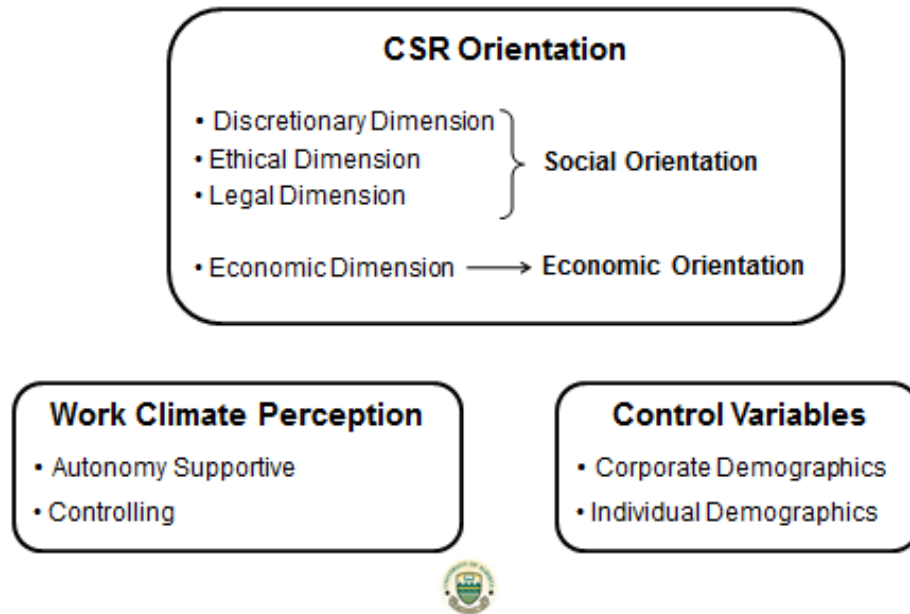
Control Variables

- Corporate
    - Daily Work Location
        - Field
        - Office
    - Managers vs Non-Managers (front-line employees)
    - Geographic Location (Canada vs USA)
    - Job Function
    - Tenure with Company

Control Variables, cont'd.

- Individual
  - Level of Education
    - Basic
    - Post-secondary
    - Advanced
  - Birth Year
    - Age
    - Generation
  - Gender

Primary Hypotheses

- H_1 - An employee's attitude towards corporate social responsibility (CSR) is influenced by the degree to which they perceive their workplace to be autonomy-supportive

    H_{1a} - A difference exists in the CSR attitudes of managers compared to non-managers, as driven by their respective work climate perceptions

    H_{1b} - A difference exists in the CSR attitudes of office personnel compared to field personnel, as driven by their respective work climate perceptions

Secondary Hypotheses

- H_2 - An employee's attitude towards corporate social responsibility is influenced by their respective level of education

- H_3 - An employee's attitude towards corporate social responsibility is influenced by their respective age

Note: H_2 & H_3 look to extend previous research which supports these claims (board member level & multi-industry)

Research Framework (Refined)

CSR Orientation

- Discretionary Dimension
- Ethical Dimension   } **Social Orientation**
- Legal Dimension

- Economic Dimension → **Economic Orientation**

H_1

$H_{2,3}$

$H_{1a,1b}$

Work Climate Perception

- Autonomy Supportive
- Controlling

Control Variables

- Corporate Demographics
- Individual Demographics
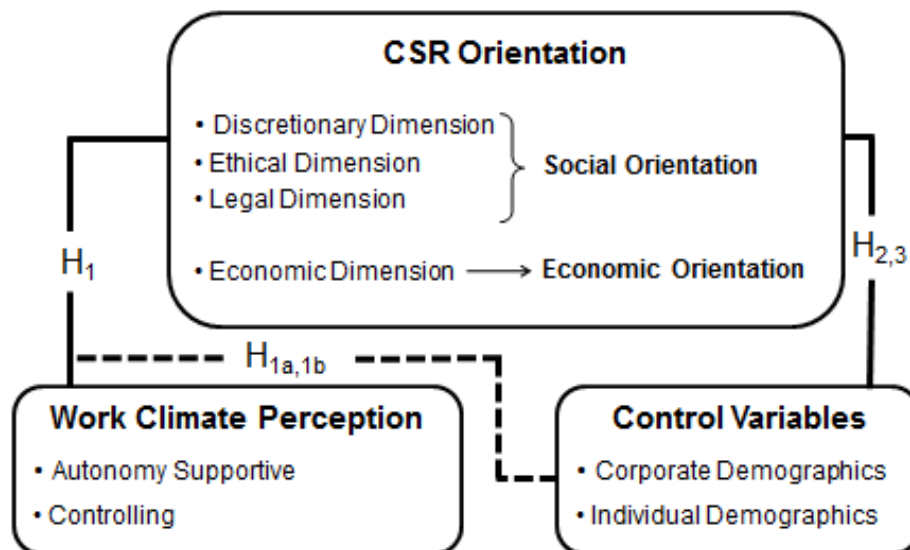
Research Instrument

- Framework
  - Questionnaire (i.e. survey)
  - 46 total questions
  - 4 distinct sections
    - Perceived Autonomy Support - 15 questions (Likert scale)
    - CSR Orientation - 15 questions (forced choice format)
    - Employee Engagement - 8 questions (Likert scale)
    - Control Variables - 8 questions (selection & entry based)
  - Gathered data offers assessment flexibility & options

Research Instrument …cont'd.

- Considerations
  - Survey text
    - Modernize, 'genericize' & simplify
  - Ethics review & approval (U of A, ENB)
  - Survey platform
    - Web-based c/w e-mailed private link
  - Anonymity & confidentiality assurances
  - Academic intent
    - Emphasize "non ENB-driven or connected" study

Proposed Test Population

- General
  - Company – Enbridge Inc.
  - Business Unit – Liquids Pipelines
  - Countries – Canada & USA
  - Functional Group – Operations (Field & Office)
  - Excluded – Exec. & sr. management, GM's, directors
  - Included – Front-line managers*, front-line employees

  * performs at least 1 annual performance review on a FT employee

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Proposed Test Population ...cont'd.

- Population Breakdown (Feb-2010 estimates)
  - Total staff = 988
    - 550_{CDN} + 438_{USA}
  - Front-line managers = 138
    - 82_{CDN} + 56_{USA}
  - Front-line employees = 850
    - 468_{CDN} + 382_{USA}

Next Steps

- Finalize survey (April)
- Seek project approval & support from ENB VP (April)
- Ethics approval of survey (U of A & ENB) (April-May)
- Launch survey (by June 1st)
  - E-mail introduction & rollout (mass distribution)
  - Personal web-link to 3rd party survey site
  - No ENB IT support envisioned
  - Minimal personal time to complete survey anticipated

Next Steps ...cont'd.

- Analyze survey results (Summer-Fall)
- Preliminary findings presented to ENB executive (Nov-Dec)
- Complete thesis write-up (TBD)

Appendix D: Survey Introduction Email

UNIVERSITY OF ALBERTA

To all Enbridge Liquids Pipelines employees (Canada & U.S.A),

I am pleased to inform you that your business unit has been chosen to participate in an academic research study being conducted at the University of Alberta.
As an employee of Enbridge Inc. (who is currently on an educational leave of absence), I am seeking to better understand how an employee's personal opinion towards corporate social responsibility (CSR) may be influenced by the workplace and his/her own individual characteristics.

Enbridge Inc. is fully supportive of this research initiative. The findings, in aggregate form, will be shared with Enbridge Inc. senior management for awareness and understanding of these proposed relationships. **NO** personal information will be included in the survey results that are presented.

This is **NOT** an Enbridge-driven study. This is a stand-alone project where the results and findings are for the sole purpose of completing my graduate level thesis. Additionally, this research is **NOT CONNECTED TO** any Enbridge Inc. study (i.e. past, present, upcoming or proposed).

The survey will be administered online from JUNE 07 to JUNE 21, 2010. An email with a link to the online survey will be sent to you in one (1) week.
Further details and information related to the research will be presented on this website, followed immediately by the online survey.
Completion of the survey should take about 15 – 20 minutes.

The survey ensures that you, and your individual replies, will remain anonymous throughout the process.
Additionally, all individual replies will remain confidential. Enbridge Inc. and my academic Advisors **WILL NOT** have access to any of the data associated with this study.
All collection, analysis and reporting of obtained information will only be done by myself.

You are under no obligation to participate, as survey participation is completely voluntary. Also, you may withdraw yourself form the survey at anytime along the way.

By participating, you will have the opportunity to express your personnel opinions towards Business-Society interactions, as well as specific topics related to the Workplace.
Also, key themes and trends will be made available to survey participants upon request.

At this point, I would like to thank you for taking the time to read this introduction to my research.
I truly hope it encourages you to share your thoughts in the upcoming survey.

Sincerely,

Phil Michailides, Ph.D. Candidate

- and -

Manager, Technology Transfer
Enbridge Technology Inc.
(780) 420-8626 Office
phil.michailides@enbridge.com

Appendix E: Survey Invitation Email

UNIVERSITY OF ALBERTA

SURVEY INVITATION

As per the introductory email, please find attached the link which directs you to the online survey hosted by SurveyMonkey™. The survey can be accessed by either:

- Copying and pasting this link into your web browser, or;
- By 'clicking' on the link directly with your mouse.

SURVEY LINK: https://www.surveymonkey.com/s/RZ3CTG3

Upon arrival to the website, you will be introduced to the details of the research and the structure of the survey (i.e. the Participant Information Letter). The survey itself starts immediately after the Participant Information Letter.

The survey should take **15 – 20 minutes** to complete and you will be able to access it up until **Monday, June 21st, 2010 (5:00 p.m. MDT).**

I kindly ask that you complete and submit only **ONE (1) survey** and from only **ONE (1) computer/laptop**. You will be able to re-enter the survey at anytime (i.e. from the same computer/laptop) to update your responses until the survey close date shown above.

The introductory email (sent June 01, 2010) has been attached to the end of this invitation for your referral, if required.

Thank you once again for your time and consideration.

Sincerely,

Phil Michailides, Ph.D. Candidate

- and -

Manager, Technology Transfer
Enbridge Technology Inc.
(780) 420-8626 Office
phil.michailides@enbridge.com

Appendix F: Survey Reminder Email

UNIVERSITY OF
ALBERTA

SURVEY REMINDER

The online survey has been operational for one (1) week and the response rate has been quite encouraging.

For those who have not completed the survey, please remember that you can access the website up until **Monday, June 21st, 2010 (5:00 p.m. MDT)** to participate. I have attached the previously emailed **SURVEY INVITATION** for your referral (see below). It also provides direct access to the website via the *SURVEY LINK.*

Your participation in our research will assist us greatly as we explore key relationships between social responsibility perspectives and what may influence these expressed opinions.

Your involvement is once again greatly appreciated.

Sincerely,

Phil Michailides, Ph.D. Candidate

- and -

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Appendix G: Survey Closure Email

UNIVERSITY OF ALBERTA

SURVEY CLOSURE

The online survey will come to a close later today **(Monday, June 21st at 5:00 p.m. MDT).** The web link will remain accessible until then if you would still like to participate. See the **SURVEY INVITATION** below for direct access to the website (i.e. via the **SURVEY LINK**).

A sincere **THANK YOU** to everyone who has already participated. Your perspectives are truly appreciated and valued.

Best Regards,

Phil Michailides, Ph.D. Candidate

- and -

Manager, Technology Transfer
Enbridge Technology Inc.
(780) 420-8626 Office
phil.michailides@enbridge.com

Appendix H: Survey Reply Summary Analysis

Date	Survey Replies	Cummulative Replies	% (indiv)	% (cumm)	Comments
01-Jun-10	0	0	0.0%	0.0%	*Survey Introduction sent to Test Population*
02-Jun-10	0	0	0.0%	0.0%	
03-Jun-10	0	0	0.0%	0.0%	
04-Jun-10	0	0	0.0%	0.0%	
05-Jun-10	0	0	0.0%	0.0%	
06-Jun-10	0	0	0.0%	0.0%	
07-Jun-10	195	195	35.6%	35.6%	*Survey Invitation sent to Test Population*
08-Jun-10	58	253	10.6%	46.2%	
09-Jun-10	32	285	5.8%	52.0%	
10-Jun-10	18	303	3.3%	55.3%	
11-Jun-10	10	313	1.8%	57.1%	
12-Jun-10	1	314	0.2%	57.3%	
13-Jun-10	1	315	0.2%	57.5%	
14-Jun-10	112	427	20.4%	77.9%	*Survey Reminder sent to Test Population*
15-Jun-10	18	445	3.3%	81.2%	
16-Jun-10	7	452	1.3%	82.5%	
17-Jun-10	4	456	0.7%	83.2%	
18-Jun-10	7	463	1.3%	84.5%	
19-Jun-10	2	465	0.4%	84.9%	
20-Jun-10	3	468	0.5%	85.4%	
21-Jun-10	80	548	14.6%	100.0%	*Survey Closure sent to Test Population*
	548	-	100.0%	-	

239

Appendix I: Principal Component Analysis & Scree Plot (Work Climate)

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
WC1	5.6190	1.35478	420
WC2	5.3857	1.48462	420
WC3	5.6071	1.55118	420
WC4	5.8571	1.33023	420
WC5	5.8429	1.26607	420
WC6	5.3238	1.41755	420
WC7	5.6643	1.35356	420
WC8	5.4548	1.65679	420
WC9	5.4238	1.50620	420
WC10	5.5190	1.41661	420
WC11	5.0738	1.62227	420
WC12	5.5667	1.45344	420
WC13	5.7548	1.44571	420
WC14	5.1262	1.42456	420
WC15	5.0357	1.59389	420

Communalities

	Initial	Extraction
WC1	1.000	.678
WC2	1.000	.795
WC3	1.000	.782
WC4	1.000	.733
WC5	1.000	.763
WC6	1.000	.671
WC7	1.000	.693
WC8	1.000	.849
WC9	1.000	.745
WC10	1.000	.758
WC11	1.000	.702
WC12	1.000	.762
WC13	1.000	.546
WC14	1.000	.679
WC15	1.000	.688

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.845	72.297	72.297	10.845	72.297	72.297
2	.589	3.926	76.223			
3	.576	3.838	80.061			
4	.423	2.822	82.882			
5	.395	2.636	85.518			
6	.338	2.255	87.773			
7	.321	2.138	89.910			
8	.291	1.937	91.848			
9	.253	1.689	93.537			
10	.222	1.478	95.015			
11	.191	1.272	96.287			
12	.169	1.126	97.414			
13	.161	1.074	98.488			
14	.125	.833	99.321			
15	.102	.679	100.000			

Extraction Method: Principal Component Analysis.

Scree Plot
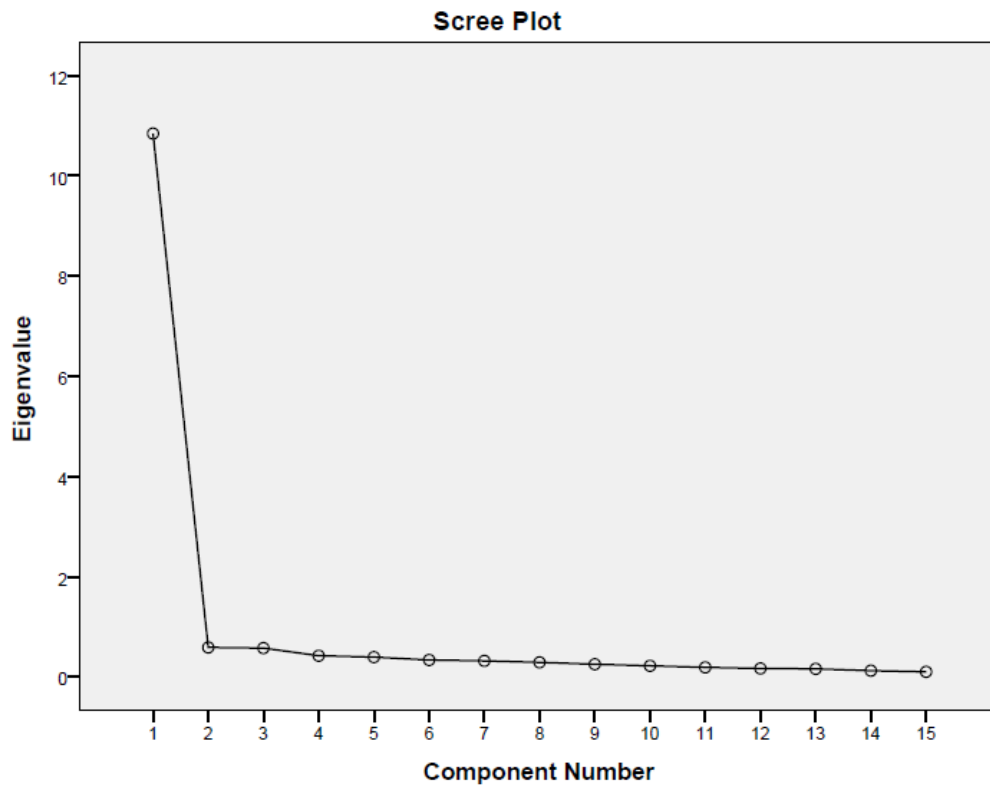
Component Matrix[a]

	Component
	1
WC1	.824
WC2	.891
WC3	.884
WC4	.856
WC5	.873
WC6	.819
WC7	.833
WC8	.921
WC9	.863
WC10	.870
WC11	.838
WC12	.873
WC13	.739
WC14	.824
WC15	.829

Extraction Method:
Principal Component
Analysis.

a. 1
components
extracted.

241

Appendix J: N-factor Scree Plot (CSRO)

Scree Plot
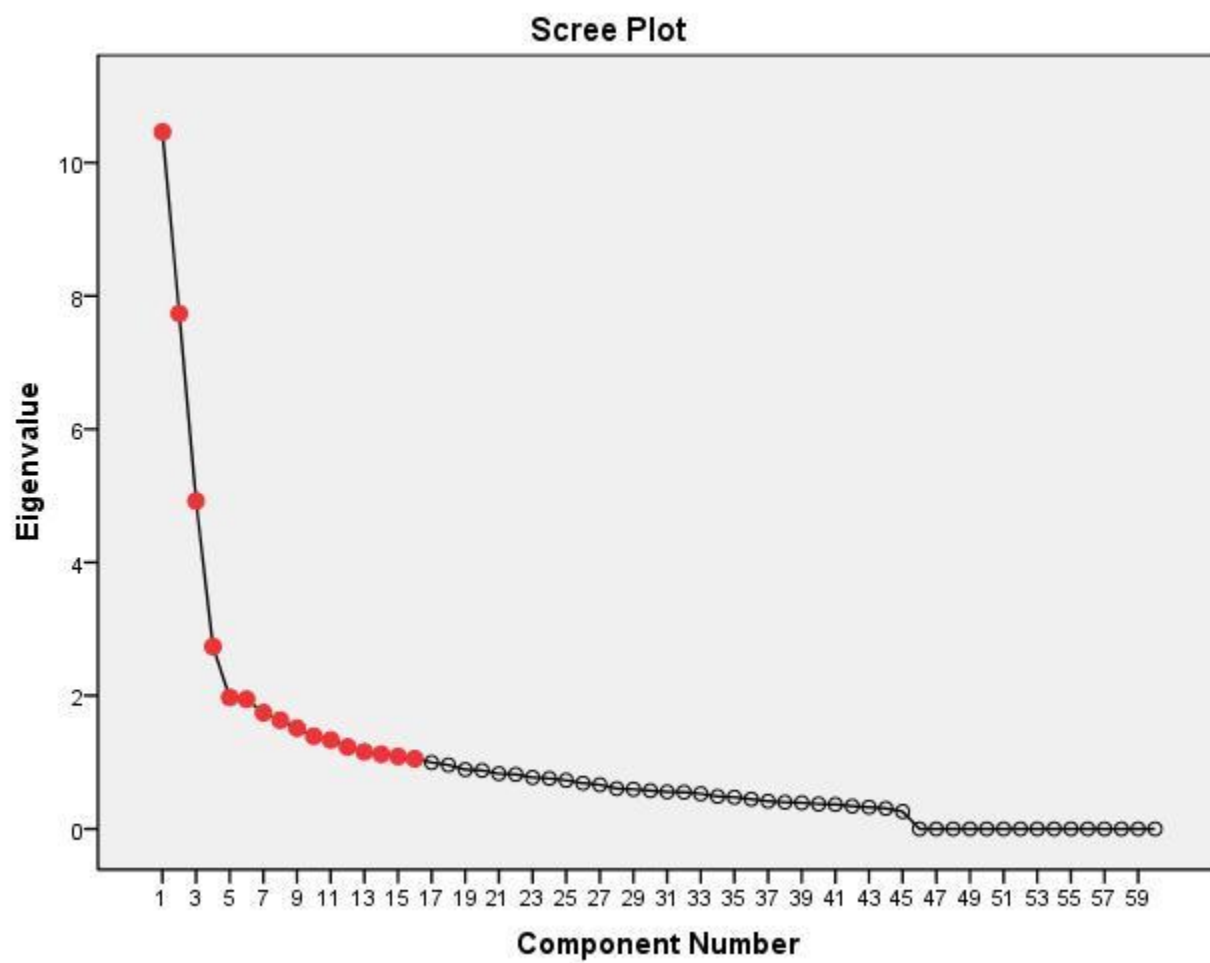
Appendix K: 3-factor Rotated Component Matrix (CSRO)

Rotated Component Matrix[a]

	Component 1	2	3
Q1_CSRO1a_ECO	**.653**	-.118	-.027
Q5_CSRO2a_ECO	**.678**	-.044	-.105
Q12_CSRO3d_ECO	**.469**	-.195	-.115
Q14_CSRO4b_ECO	**.580**	-.116	-.041
Q17_CSRO5a_ECO	**.608**	-.324	-.133
Q22_CSRO6b_ECO	**.519**	-.097	.009
Q25_CSRO7a_ECO	**.614**	-.351	.092
Q29_CSRO8a_ECO	**.653**	-.272	-.162
Q35_CSRO9c_ECO	**.547**	-.343	-.156
Q40_CSRO10d_ECO	**.594**	-.040	-.214
Q42_CSRO11b_ECO	**.589**	-.304	-.065
Q47_CSRO12c_ECO	**.601**	-.144	.072
Q52_CSRO13d_ECO	**.576**	-.328	-.088
Q53_CSRO14a_ECO	**.609**	-.151	-.089
Q59_CSRO15c_ECO	**.564**	-.269	-.084
Q2_CSRO1b_LEG	-.131	-.120	**.694**
Q7_CSRO2c_LEG	-.168	-.087	**.721**
Q10_CSRO3b_LEG	-.152	-.130	**.678**
Q13_CSRO4a_LEG	-.169	-.254	**.668**
Q18_CSRO5b_LEG	-.017	-.312	**.727**
Q23_CSRO6c_LEG	-.134	-.231	**.472**
Q26_CSRO7b_LEG	-.065	.385	-.065
Q30_CSRO8b_LEG	-.007	-.259	**.533**
Q34_CSRO9b_LEG	-.133	-.343	**.560**
Q37_CSRO10a_LEG	.093	-.263	**.601**
Q43_CSRO11c_LEG	-.077	-.203	**.623**
Q46_CSRO12b_LEG	.150	-.089	.252
Q50_CSRO13b_LEG	.076	-.106	.289
Q55_CSRO14c_LEG	-.185	-.386	**.434**
Q58_CSRO15b_LEG	-.337	-.280	.263

Rotated Component Matrix[a] (…continued)

	Component 1	2	3	
Q4_CSRO1d_ETH	-.433	-.189	**-.467**	x
Q8_CSRO2d_ETH	**-.474**	-.341	-.408	x
Q9_CSRO3a_ETH	-.255	-.082	**-.462**	
Q16_CSRO4d_ETH	-.262	-.114	**-.461**	
Q20_CSRO5d_ETH	-.445	.172	**-.451**	x
Q24_CSRO6d_ETH	**-.485**	-.222	-.284	
Q28_CSRO7d_ETH	**-.488**	-.222	.078	
Q31_CSRO8c_ETH	**-.588**	-.100	-.126	
Q33_CSRO9a_ETH	-.269	.206	-.179	
Q39_CSRO10c_ETH	**-.576**	-.263	-.293	
Q44_CSRO11d_ETH	**-.489**	-.105	-.390	
Q45_CSRO12a_ETH	**-.475**	-.284	-.141	
Q51_CSRO13c_ETH	**-.467**	-.166	-.106	
Q56_CSRO14d_ETH	**-.459**	-.017	-.297	
Q60_CSRO15d_ETH	-.218	-.043	-.135	
Q3_CSRO1c_PHI	-.068	**.595**	-.166	
Q6_CSRO2b_PHI	-.025	**.649**	-.192	
Q11_CSRO3c_PHI	-.011	**.582**	-.067	
Q15_CSRO4c_PHI	-.062	**.607**	-.184	
Q19_CSRO5c_PHI	-.185	**.573**	-.167	
Q21_CSRO6a_PHI	.107	**.555**	-.171	
Q27_CSRO7c_PHI	-.051	.331	-.155	
Q32_CSRO8d_PHI	-.080	**.698**	-.160	
Q36_CSRO9d_PHI	-.197	**.522**	-.236	
Q38_CSRO10b_PHI	-.080	**.631**	-.024	
Q41_CSRO11a_PHI	.013	**.741**	-.077	
Q48_CSRO12d_PHI	-.058	**.720**	-.123	
Q49_CSRO13a_PHI	-.207	**.609**	-.064	
Q54_CSRO14b_PHI	-.094	**.612**	-.022	
Q57_CSRO15a_PHI	.006	**.725**	-.092	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 9 iterations.

Appendix L: Descriptive Statistics of Demographic Variables

COUNTRY	Frequency (*f*)	Percent (%)
Q1: I work for Enbridge in the following country:		
CANADA	305	72.6
USA	115	27.4
Total	*n = 420*	*100.0*

WORK SITE*	Frequency (*f*)	Percent (%)
Q2: I spend most of my daily work hours in the:		
FIELD	146	34.8
OFFICE	274	65.2
Total	*n = 420*	*100.0*

PEOPLE RESPONSIBILITY*	Frequency (*f*)	Percent (%)
Q3: I conduct at least one (1) annual performance review of a full-time Enbridge employee:		
TRUE = SUPERVISOR	158	37.6
FALSE = EMPLOYEE	262	62.4
Total	*n = 420*	*100.0*

JOB FUNCTION (x4)	Frequency (*f*)	Percent (%)
Q4: My job at enbridge can best be described as:		
ADMINISTRATIVE/CLERICAL = ADM	37	8.8
FRONTLINE EMPLOYEE = FRNT	106	25.2
PROFESSIONAL/SPECIALIST = PRO/SPC	177	42.1
SUPERVISORY = SUPRV	100	23.8
Total	*n = 420*	*100.0*

JOB FUNCTION (x2)[†][*]	Frequency (*f*)	Percent (%)
ADM + FRNT + PRO/SPC = EMPLOYEE	320	76.2
SUPRV = SUPERVISOR	100	23.8
Total	*n = 420*	*100.0*

TENURE	Frequency (*f*)	Percent (%)
Q5: I have been working at Enbridge for (respond in years or months):		
< 2 YRS	62	14.8
2 - 5 YRS	191	45.5
6 - 10 YRS	55	13.1
11 - 20 YRS	59	14.0
≥ 21 YRS	53	12.6
Total	*n = 420*	*100.0*

EDUCATION LEVEL[*]	Frequency (*f*)	Percent (%)
Q6: My level of education can best be described as:		
BASIC	32	7.6
POST SECONDARY (TECHNICAL)	123	29.3
POSY SECONDARY (ACADEMIC)	265	63.1
Total	*n = 420*	*100.0*

AGE (GENERATION)[*]	Frequency (*f*)	Percent (%)
Q7: I was born in the following year:		
BABY BOOMERS OR EARLIER (≤ 1965)	178	42.4
GEN-Xers (1966-1980)	176	41.9
MILLENIALS (≥ 1981)	66	15.7
Total	*n = 420*	*100.0*

GENDER	Frequency (*f*)	Percent (%)
Q8: Gender:		
FEMALE	131	31.2
MALE	289	68.8
Total	*n = 420*	*100.0*

† - No question asked (i.e., based on the findings of the JOB FUNCTION (x4)

question)

* - Variable is used in the testing of hypotheses

Appendix M: SPSS Output (CSRO Profiles)

Statistics

LIQUIDS PIPELINES GROUP Hypothesis: P1		ECO_avg	LEG_avg	ETH_avg	PHI_avg
N	Valid	420	420	420	420
	Missing	0	0	0	0
Mean		2.6377	2.9586	2.8231	1.5804
Std. Error of Mean		.03470	.02852	.03062	.02902
Median		2.6000	2.9300	2.8000	1.6000
Mode		2.67	2.93	2.93	1.53
Std. Deviation		.71113	.58453	.62753	.59470
Variance		.506	.342	.394	.354
Skewness		.516	.455	.523	.313
Std. Error of Skewness		.119	.119	.119	.119
Kurtosis		1.990	1.672	2.012	1.109
Std. Error of Kurtosis		.238	.238	.238	.238
Range		5.34	3.94	5.20	3.87
Minimum		.13	1.13	.27	.00
Maximum		5.47	5.07	5.47	3.87
Sum		1107.82	1242.63	1185.72	663.76
Percentiles	25	2.2000	2.6700	2.4700	1.2000
	50	2.6000	2.9300	2.8000	1.6000
	75	3.0000	3.2525	3.1300	1.9300

Descriptives

ORG. ROLE (PERF. REVIEW) Hypothesis: P2(a)		N	Mean	Std. Deviation	Std. Error	Interval for Mean Lower Bound	Upper Bound	Minimum	Maximum	Between-Component Variance
ECO_avg	TRUE (SUPV)	158	2.6451	.65057	.05176	2.5429	2.7474	.13	4.53	
	FALSE (EMPL)	262	2.6332	.74646	.04612	2.5424	2.7240	.73	5.47	
	Total	420	2.6377	.71113	.03470	2.5695	2.7059	.13	5.47	
	Model Fixed Effects			.71196	.03474	2.5694	2.7060			
	Random Effects				.03474	2.1963	3.0791			-.00250
LEG_avg	TRUE (SUPV)	158	3.0207	.56283	.04478	2.9323	3.1091	1.27	4.93	
	FALSE (EMPL)	262	2.9212	.59517	.03677	2.8488	2.9936	1.13	5.07	
	Total	420	2.9586	.58453	.02852	2.9026	3.0147	1.13	5.07	
	Model Fixed Effects			.58324	.02846	2.9027	3.0146			
	Random Effects				.05020	2.3208	3.5964			.00322
ETH_avg	TRUE (SUPV)	158	2.7848	.58051	.04618	2.6936	2.8760	1.47	5.07	
	FALSE (EMPL)	262	2.8463	.65425	.04042	2.7667	2.9258	.27	5.47	
	Total	420	2.8231	.62753	.03062	2.7630	2.8833	.27	5.47	
	Model Fixed Effects			.62757	.03062	2.7630	2.8833			
	Random Effects				.03062	2.4341	3.2122			-.00011
PHI_avg	TRUE (SUPV)	158	1.5488	.56326	.04481	1.4603	1.6373	.00	3.53	
	FALSE (EMPL)	262	1.5994	.61315	.03788	1.5248	1.6740	.13	3.87	
	Total	420	1.5804	.59470	.02902	1.5233	1.6374	.00	3.87	
	Model Fixed Effects			.59490	.02903	1.5233	1.6374			
	Random Effects				.02903	1.2115	1.9492			-.00051

Descriptives

ORG. ROLE (JOB FUNCTION) Hypothesis: P2(b)		N	Mean	Std. Deviation	Std. Error	Interval for Mean Lower Bound	Upper Bound	Minimum	Maximum	Between-Component Variance
ECO_avg	EMPL= ADM+FRNT+PRO/SPC	320	2.6100	.74082	.04141	2.5285	2.6915	.13	5.47	
	SUPRV	100	2.7262	.60127	.06013	2.6069	2.8455	.80	4.53	
	Total	420	2.6377	.71113	.03470	2.5695	2.7059	.13	5.47	
	Model Fixed Effects			.71025	.03466	2.5695	2.7058			
	Random Effects				.05825	1.8975	3.3778			.00344
LEG_avg	EMPL= ADM+FRNT+PRO/SPC	320	2.9175	.58771	.03285	2.8529	2.9821	1.13	5.07	
	SUPRV	100	3.0903	.55693	.05569	2.9798	3.2008	1.87	4.93	
	Total	420	2.9586	.58453	.02852	2.9026	3.0147	1.13	5.07	
	Model Fixed Effects			.58056	.02833	2.9030	3.0143			
	Random Effects				.09437	1.7595	4.1578			.01272
ETH_avg	EMPL= ADM+FRNT+PRO/SPC	320	2.8521	.64338	.03597	2.7813	2.9229	.27	5.47	
	SUPRV	100	2.7305	.56696	.05670	2.6180	2.8430	1.60	5.07	
	Total	420	2.8231	.62753	.03062	2.7630	2.8833	.27	5.47	
	Model Fixed Effects			.62613	.03055	2.7631	2.8832			
	Random Effects				.06328	2.0191	3.6272			.00482
PHI_avg	EMPL= ADM+FRNT+PRO/SPC	320	1.6204	.61217	.03422	1.5531	1.6877	.13	3.87	
	SUPRV	100	1.4523	.51723	.05172	1.3497	1.5549	.00	2.53	
	Total	420	1.5804	.59470	.02902	1.5233	1.6374	.00	3.87	
	Model Fixed Effects			.59107	.02884	1.5237	1.6371			
	Random Effects				.09151	.4176	2.7431			.01184

Descriptives

WORKSITE LOCATION Hypothesis: P3		N	Mean	Std. Deviation	Std. Error	Interval for Mean Lower Bound	Upper Bound	Minimum	Maximum	Between-Component Variance
ECO_avg	FIELD	146	2.7236	.65309	.05405	2.6168	2.8305	.87	5.40	
	OFFICE	274	2.5919	.73726	.04454	2.5042	2.6795	.13	5.47	
	Total	420	2.6377	.71113	.03470	2.5695	2.7059	.13	5.47	
	Model Fixed Effects			.70920	.03461	2.5696	2.7057			
	Random Effects				.06707	1.7854	3.4899			.00604
LEG_avg	FIELD	146	3.0361	.58720	.04860	2.9400	3.1321	1.13	5.07	
	OFFICE	274	2.9174	.57996	.03504	2.8484	2.9863	1.13	4.93	
	Total	420	2.9586	.58453	.02852	2.9026	3.0147	1.13	5.07	
	Model Fixed Effects			.58248	.02842	2.9028	3.0145			
	Random Effects				.06071	2.1873	3.7300			.00527
ETH_avg	FIELD	146	2.6990	.58219	.04818	2.6037	2.7942	1.27	4.87	
	OFFICE	274	2.8893	.64165	.03876	2.8130	2.9656	.27	5.47	
	Total	420	2.8231	.62753	.03062	2.7630	2.8833	.27	5.47	
	Model Fixed Effects			.62167	.03033	2.7635	2.8828			
	Random Effects				.09854	1.5711	4.0752			.01608
PHI_avg	FIELD	146	1.5414	.59411	.04917	1.4443	1.6386	.13	3.87	
	OFFICE	274	1.6011	.59505	.03595	1.5304	1.6719	.00	3.67	
	Total	420	1.5804	.59470	.02902	1.5233	1.6374	.00	3.87	
	Model Fixed Effects			.59472	.02902	1.5233	1.6374			
	Random Effects				.02902	1.2117	1.9491			-.00008

248

Descriptives

EDUCATION LEVEL Hypothesis: P4		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	Upper Bound	Minimum	Maximum	Between-Component Variance
ECO_avg	BASIC ED	32	2.5956	.58407	.10325	2.3850	2.8062	1.60	4.53	
	TECHNICAL ED	123	2.6483	.69975	.06309	2.5234	2.7732	.73	4.40	
	ACADEMIC ED	265	2.6378	.73214	.04497	2.5493	2.7264	.13	5.47	
	Total	420	2.6377	.71113	.03470	2.5695	2.7059	.13	5.47	
	Model Fixed Effects			.71272	.03478	2.5693	2.7060			
	Random Effects				.03478	2.4880	2.7873			-.00441
LEG_avg	BASIC ED	32	3.1603	.58359	.10317	2.9499	3.3707	2.27	4.80	
	TECHNICAL ED	123	2.9107	.57249	.05162	2.8085	3.0128	1.13	4.93	
	ACADEMIC ED	265	2.9566	.58722	.03607	2.8855	3.0276	1.13	5.07	
	Total	420	2.9586	.58453	.02852	2.9026	3.0147	1.13	5.07	
	Model Fixed Effects			.58268	.02843	2.9028	3.0145			
	Random Effects				.05367	2.7277	3.1896			.00423
ETH_avg	BASIC ED	32	2.7588	.55833	.09870	2.5575	2.9600	1.67	4.00	
	TECHNICAL ED	123	2.8153	.68549	.06181	2.6929	2.9376	1.40	5.47	
	ACADEMIC ED	265	2.8346	.60875	.03740	2.7609	2.9082	.27	4.93	
	Total	420	2.8231	.62753	.03062	2.7630	2.8833	.27	5.47	
	Model Fixed Effects			.62870	.03068	2.7628	2.8834			
	Random Effects				.03068	2.6911	2.9551			-.00287
PHI_avg	BASIC ED	32	1.4850	.51037	.09022	1.3010	1.6690	.40	2.33	
	TECHNICAL ED	123	1.6254	.56750	.05117	1.5242	1.7267	.00	3.67	
	ACADEMIC ED	265	1.5710	.61624	.03786	1.4964	1.6455	.13	3.87	
	Total	420	1.5804	.59470	.02902	1.5233	1.6374	.00	3.87	
	Model Fixed Effects			.59498	.02903	1.5233	1.6374			
	Random Effects				.02903	1.4555	1.7053			-.00067

Descriptives

AGE (GENERATION) Hypothesis: P5		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	Upper Bound	Minimum	Maximum	Between-Component Variance
ECO_avg	BBOOM (<=1965)	178	2.6510	.69406	.05202	2.5483	2.7537	.73	5.47	
	GENX (1966-1980)	176	2.6963	.71289	.05374	2.5902	2.8023	.87	5.40	
	MILLNL (>=1981)	66	2.4455	.72975	.08983	2.2661	2.6249	.13	4.53	
	Total	420	2.6377	.71113	.03470	2.5695	2.7059	.13	5.47	
	Model Fixed Effects			.70765	.03453	2.5698	2.7055			
	Random Effects				.06493	2.3583	2.9170			.00796
LEG_avg	BBOOM (<=1965)	178	3.0119	.57160	.04284	2.9273	3.0964	1.13	5.07	
	GENX (1966-1980)	176	2.9711	.61453	.04632	2.8797	3.0625	1.13	5.00	
	MILLNL (>=1981)	66	2.7820	.50615	.06230	2.6575	2.9064	1.47	4.20	
	Total	420	2.9586	.58453	.02852	2.9026	3.0147	1.13	5.07	
	Model Fixed Effects			.58061	.02833	2.9030	3.0143			
	Random Effects				.05999	2.7005	3.2168			.00736
ETH_avg	BBOOM (<=1965)	178	2.7772	.55314	.04146	2.6954	2.8590	1.27	4.67	
	GENX (1966-1980)	176	2.8041	.72173	.05440	2.6967	2.9115	.27	5.47	
	MILLNL (>=1981)	66	2.9979	.51487	.06338	2.8713	3.1244	1.80	4.60	
	Total	420	2.8231	.62753	.03062	2.7630	2.8833	.27	5.47	
	Model Fixed Effects			.62433	.03046	2.7633	2.8830			
	Random Effects				.05807	2.5733	3.0730			.00643
PHI_avg	BBOOM (<=1965)	178	1.5603	.59921	.04491	1.4716	1.6489	.00	3.87	
	GENX (1966-1980)	176	1.5282	.56523	.04261	1.4441	1.6123	.13	3.53	
	MILLNL (>=1981)	66	1.7738	.62881	.07740	1.6192	1.9284	.53	3.53	
	Total	420	1.5804	.59470	.02902	1.5233	1.6374	.00	3.87	
	Model Fixed Effects			.59001	.02879	1.5238	1.6370			
	Random Effects				.06495	1.3009	1.8599			.00892

Descriptives

	COUNTRY		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	Upper Bound	Minimum	Maximum	Between-Component Variance
	Hypothesis: n/a										
ECO_avg	CDN		305	2.5906	.72238	.04136	2.5092	2.6720	.13	5.40	
	USA		115	2.7624	.66748	.06224	2.6391	2.8857	1.53	5.47	
	Total		420	2.6377	.71113	.03470	2.5695	2.7059	.13	5.47	
	Model	Fixed Effects			.70783	.03454	2.5698	2.7056			
		Random Effects				.09097	1.4817	3.7936			.01176
LEG_avg	CDN		305	2.9463	.57739	.03306	2.8813	3.0114	1.13	4.93	
	USA		115	2.9913	.60443	.05636	2.8796	3.1030	1.13	5.07	
	Total		420	2.9586	.58453	.02852	2.9026	3.0147	1.13	5.07	
	Model	Fixed Effects			.58489	.02854	2.9025	3.0147			
		Random Effects				.02854	2.5960	3.3213			-.00104
ETH_avg	CDN		305	2.8658	.64421	.03689	2.7932	2.9384	.27	5.47	
	USA		115	2.7100	.56824	.05299	2.6050	2.8150	1.27	4.60	
	Total		420	2.8231	.62753	.03062	2.7630	2.8833	.27	5.47	
	Model	Fixed Effects			.62440	.03047	2.7633	2.8830			
		Random Effects				.08266	1.7728	3.8735			.00980
PHI_avg	CDN		305	1.5971	.58095	.03327	1.5316	1.6625	.00	3.67	
	USA		115	1.5361	.63019	.05877	1.4197	1.6525	.13	3.87	
	Total		420	1.5804	.59470	.02902	1.5233	1.6374	.00	3.87	
	Model	Fixed Effects			.59478	.02902	1.5233	1.6374			
		Random Effects				.02902	1.2116	1.9491			-.00026

Descriptives

	JOB FUNCTION		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	Upper Bound	Minimum	Maximum	Between-Component Variance
	Hypothesis: n/a										
ECO_avg	ADMIN		37	2.2205	.54705	.08993	2.0381	2.4029	.73	3.20	
	FRNTLINE		106	2.6715	.68564	.06660	2.5395	2.8036	.80	4.53	
	PRO/SPEC		177	2.6546	.78542	.05904	2.5381	2.7711	.13	5.47	
	SUPV		100	2.7262	.60127	.06013	2.6069	2.8455	.80	4.53	
	Total		420	2.6377	.71113	.03470	2.5695	2.7059	.13	5.47	
	Model	Fixed Effects			.70113	.03421	2.5704	2.7049			
		Random Effects				.08589	2.3643	2.9110			.02030
LEG_avg	ADMIN		37	2.8624	.64417	.10590	2.6477	3.0772	1.87	4.33	
	FRNTLINE		106	2.8588	.56338	.05472	2.7503	2.9673	1.13	5.00	
	PRO/SPEC		177	2.9642	.58897	.04427	2.8768	3.0515	1.13	5.07	
	SUPV		100	3.0903	.55693	.05569	2.9798	3.2008	1.87	4.93	
	Total		420	2.9586	.58453	.02852	2.9026	3.0147	1.13	5.07	
	Model	Fixed Effects			.58017	.02831	2.9030	3.0143			
		Random Effects				.05508	2.7834	3.1339			.00730
ETH_avg	ADMIN		37	3.0322	.62744	.10315	2.8230	3.2414	2.07	4.93	
	FRNTLINE		106	2.8381	.71166	.06912	2.7011	2.9752	1.53	5.47	
	PRO/SPEC		177	2.8228	.59983	.04509	2.7338	2.9118	.27	4.53	
	SUPV		100	2.7305	.56696	.05670	2.6180	2.8430	1.60	5.07	
	Total		420	2.8231	.62753	.03062	2.7630	2.8833	.27	5.47	
	Model	Fixed Effects			.62500	.03050	2.7632	2.8831			
		Random Effects				.04818	2.6698	2.9765			.00455
PHI_avg	ADMIN		37	1.8843	.65065	.10697	1.6674	2.1013	.53	3.53	
	FRNTLINE		106	1.6320	.60247	.05852	1.5160	1.7480	.20	3.53	
	PRO/SPEC		177	1.5583	.59792	.04494	1.4696	1.6470	.13	3.87	
	SUPV		100	1.4523	.51723	.05172	1.3497	1.5549	.00	2.53	
	Total		420	1.5804	.59470	.02902	1.5233	1.6374	.00	3.87	
	Model	Fixed Effects			.58581	.02858	1.5242	1.6366			
		Random Effects				.07368	1.3459	1.8149			.01508

Descriptives

TENURE / Hypothesis: n/a		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	Upper Bound	Minimum	Maximum	Between-Component Variance
ECO_avg	< 2 YRS	62	2.4810	.62262	.07907	2.3229	2.6391	.80	4.53	
	2 - 5 YRS	191	2.5908	.71719	.05189	2.4884	2.6931	.13	5.47	
	6 - 10 YRS	55	2.7782	.68885	.09288	2.5920	2.9644	1.40	4.53	
	11 - 20 YRS	59	2.7685	.77430	.10081	2.5667	2.9703	1.13	5.40	
	>= 21 YRS	53	2.6985	.70554	.09691	2.5040	2.8930	.80	4.53	
	Total	420	2.6377	.71113	.03470	2.5695	2.7059	.13	5.47	
	Model Fixed Effects			.70738	.03452	2.5698	2.7055			
	Random Effects				.05721	2.4788	2.7965			.00740
LEG_avg	< 2 YRS	62	2.8144	.51687	.06564	2.6831	2.9456	1.27	4.20	
	2 - 5 YRS	191	2.9354	.55796	.04037	2.8558	3.0151	1.13	5.07	
	6 - 10 YRS	55	2.9936	.59094	.07968	2.8339	3.1534	1.60	5.00	
	11 - 20 YRS	59	2.9698	.62756	.08170	2.8063	3.1334	1.13	4.53	
	>= 21 YRS	53	3.1623	.65563	.09006	2.9815	3.3430	2.07	4.93	
	Total	420	2.9586	.58453	.02852	2.9026	3.0147	1.13	5.07	
	Model Fixed Effects			.57978	.02829	2.9030	3.0143			
	Random Effects				.05445	2.8075	3.1098			.00769
ETH_avg	< 2 YRS	62	2.8884	.47780	.06068	2.7670	3.0097	1.67	3.80	
	2 - 5 YRS	191	2.9086	.67423	.04879	2.8124	3.0048	1.27	5.47	
	6 - 10 YRS	55	2.7602	.57520	.07756	2.6047	2.9157	1.67	4.00	
	11 - 20 YRS	59	2.6107	.58676	.07639	2.4578	2.7636	.27	5.07	
	>= 21 YRS	53	2.7408	.64995	.08928	2.5616	2.9199	1.40	4.47	
	Total	420	2.8231	.62753	.03062	2.7630	2.8833	.27	5.47	
	Model Fixed Effects			.62111	.03031	2.7636	2.8827			
	Random Effects				.06362	2.6465	2.9998			.01112
PHI_avg	< 2 YRS	62	1.8160	.60762	.07717	1.6617	1.9703	.53	3.53	
	2 - 5 YRS	191	1.5649	.57823	.04184	1.4824	1.6475	.13	3.40	
	6 - 10 YRS	55	1.4673	.61688	.08318	1.3005	1.6340	.40	3.87	
	11 - 20 YRS	59	1.6515	.60572	.07886	1.4937	1.8094	.20	3.67	
	>= 21 YRS	53	1.3987	.52016	.07145	1.2553	1.5421	.00	2.67	
	Total	420	1.5804	.59470	.02902	1.5233	1.6374	.00	3.87	
	Model Fixed Effects			.58484	.02854	1.5243	1.6365			
	Random Effects				.07318	1.3772	1.7836			.01614

Descriptives

GENDER / Hypothesis: n/a		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	Upper Bound	Minimum	Maximum	Between-Component Variance
ECO_avg	FEMALE	131	2.3912	.57698	.05041	2.2915	2.4910	.73	4.53	
	MALE	289	2.7494	.73846	.04344	2.6639	2.8349	.13	5.47	
	Total	420	2.6377	.71113	.03470	2.5695	2.7059	.13	5.47	
	Model Fixed Effects			.69228	.03378	2.5713	2.7041			
	Random Effects				.19034	.2191	5.0562			.06148
LEG_avg	FEMALE	131	2.9353	.56435	.04931	2.8377	3.0328	1.87	5.00	
	MALE	289	2.9692	.59411	.03495	2.9005	3.0380	1.13	5.07	
	Total	420	2.9586	.58453	.02852	2.9026	3.0147	1.13	5.07	
	Model Fixed Effects			.58502	.02855	2.9025	3.0148			
	Random Effects				.02855	2.5959	3.3214			-.00132
ETH_avg	FEMALE	131	2.9427	.54980	.04804	2.8476	3.0377	1.47	4.93	
	MALE	289	2.7690	.65347	.03844	2.6933	2.8446	.27	5.47	
	Total	420	2.8231	.62753	.03062	2.7630	2.8833	.27	5.47	
	Model Fixed Effects			.62308	.03040	2.7634	2.8829			
	Random Effects				.09114	1.6651	3.9812			.01293
PHI_avg	FEMALE	131	1.7307	.55239	.04826	1.6352	1.8262	.13	3.27	
	MALE	289	1.5122	.60155	.03539	1.4426	1.5819	.00	3.87	
	Total	420	1.5804	.59470	.02902	1.5233	1.6374	.00	3.87	
	Model Fixed Effects			.58670	.02863	1.5241	1.6367			
	Random Effects				.11553	.1125	3.0483			.02195

Appendix N: SPSS Output (Hypotheses P1–P3)

P1: ONE-WAY ANOVA (ECONOMIC)

Descriptives

ECO_avg

					95% Confidence Interval for Mean				
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum	Between-Component Variance
CNTRL (1-4)	54	2.5191	.74608	.10153	2.3154	2.7227	.80	4.53	
A-SUPP (4-7)	366	2.6552	.70520	.03686	2.5827	2.7277	.13	5.47	
Total	420	2.6377	.71113	.03470	2.5695	2.7059	.13	5.47	
Model Fixed Effects			.71052	.03467	2.5695	2.7058			
Random Effects				.06500	1.8118	3.4636			.00390

Test of Homogeneity of Variances

ECO_avg

Levene Statistic	df1	df2	Sig.
.470	1	418	.493

ANOVA

ECO_avg

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.872	1	.872	1.726	.190
Within Groups	211.021	418	.505		
Total	211.892	419			

Robust Tests of Equality of Means

ECO_avg

	Statistic[a]	df1	df2	Sig.
Welch	1.587	1	67.723	.212
Brown-Forsythe	1.587	1	67.723	.212

a. Asymptotically F distributed.

P1: ONE-WAY ANOVA (LEGAL)

Descriptives

LEG_avg

					95% Confidence Interval for Mean				
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum	Between-Component Variance
CNTRL (1-4)	54	2.9876	.74313	.10113	2.7848	3.1904	1.13	5.00	
A-SUPP (4-7)	366	2.9544	.55848	.02919	2.8970	3.0118	1.13	5.07	
Total	420	2.9586	.58453	.02852	2.9026	3.0147	1.13	5.07	
Model Fixed Effects			.58513	.02855	2.9025	3.0148			
Random Effects				.02855[a]	2.5959[a]	3.3214[a]			-.00309

a. Warning: Between-component variance is negative. It was replaced by 0.0 in computing this random effects measure.

Test of Homogeneity of Variances

LEG_avg

Levene Statistic	df1	df2	Sig.
10.430	1	418	.001

ANOVA

LEG_avg

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.052	1	.052	.152	.697
Within Groups	143.112	418	.342		
Total	143.164	419			

Robust Tests of Equality of Means

LEG_avg

	Statistic[a]	df1	df2	Sig.
Welch	.100	1	62.138	.753
Brown-Forsythe	.100	1	62.138	.753

a. Asymptotically F distributed.

P1: ONE-WAY ANOVA (ETHICAL)

Descriptives

ETH_avg

| | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum | Between-Component Variance |
					Lower Bound	Upper Bound			
CNTRL (1-4)	54	2.9439	.73376	.09985	2.7436	3.1442	1.53	5.47	
A-SUPP (4-7)	366	2.8053	.60942	.03185	2.7427	2.8680	.27	5.07	
Total	420	2.8231	.62753	.03062	2.7630	2.8833	.27	5.47	
Model Fixed Effects			.62655	.03057	2.7630	2.8832			
Random Effects				.07174	1.9116	3.7347			.00543

Test of Homogeneity of Variances

ETH_avg

Levene Statistic	df1	df2	Sig.
2.176	1	418	.141

ANOVA

ETH_avg

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.903	1	.903	2.301	.130
Within Groups	164.094	418	.393		
Total	164.998	419			

Robust Tests of Equality of Means

ETH_avg

	Statistic[a]	df1	df2	Sig.
Welch	1.748	1	64.240	.191
Brown-Forsythe	1.748	1	64.240	.191

a. Asymptotically F distributed.

254

P1: ONE-WAY ANOVA (PHILANTHROPIC)

Descriptives

PHI_avg

| | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum | Between-Component Variance |
					Lower Bound	Upper Bound			
CNTRL (1-4)	54	1.5480	.61404	.08356	1.3804	1.7156	.20	3.40	
A-SUPP (4-7)	366	1.5852	.59250	.03097	1.5243	1.6461	.00	3.87	
Total	420	1.5804	.59470	.02902	1.5233	1.6374	.00	3.87	
Model Fixed Effects			.59528	.02905	1.5233	1.6375			
Random Effects				.02905ᵃ	1.2113ᵃ	1.9495ᵃ			-.00307

a. Warning: Between-component variance is negative. It was replaced by 0.0 in computing this random effects measure.

Test of Homogeneity of Variances

PHI_avg

Levene Statistic	df1	df2	Sig.
.398	1	418	.529

ANOVA

PHI_avg

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.065	1	.065	.184	.668
Within Groups	148.120	418	.354		
Total	148.185	419			

Robust Tests of Equality of Means

PHI_avg

	Statisticᵃ	df1	df2	Sig.
Welch	.174	1	68.375	.678
Brown-Forsythe	.174	1	68.375	.678

a. Asymptotically F distributed.

P2 (a): TWO-WAY ANOVA (ECONOMIC)

Descriptive Statistics

Dependent Variable:ECO_avg

WC_ID	PPLLDRS_ID	Mean	Std. Deviation	N
CNTRL (1-4)	TRUE (SUPV)	2.5094	.90476	17
	FALSE (EMPL)	2.5235	.67498	37
	Total	2.5191	.74608	54
A-SUPP (4-7)	TRUE (SUPV)	2.6615	.61529	141
	FALSE (EMPL)	2.6512	.75743	225
	Total	2.6552	.70520	366
Total	TRUE (SUPV)	2.6451	.65057	158
	FALSE (EMPL)	2.6332	.74646	262
	Total	2.6377	.71113	420

Levene's Test of Equality of Error Variances[a]

Dependent Variable:ECO_avg

F	df1	df2	Sig.
2.237	3	416	.083

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + WC_ID + PPLLDRS_ID + WC_ID * PPLLDRS_ID

Tests of Between-Subjects Effects

Dependent Variable:ECO_avg

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	.883[a]	3	.294	.580	.628	.004	1.741	.170
Intercept	1099.033	1	1099.033	2166.720	.000	.839	2166.720	1.000
WC_ID	.804	1	.804	1.584	.209	.004	1.584	.241
PPLLDRS_ID	.000	1	.000	.000	.986	.000	.000	.050
WC_ID * PPLLDRS_ID	.006	1	.006	.012	.913	.000	.012	.051
Error	211.009	416	.507					
Total	3133.952	420						
Corrected Total	211.892	419						

a. R Squared = .004 (Adjusted R Squared = -.003)

b. Computed using alpha = .05

P2 (a): TWO-WAY ANOVA (LEGAL)

Descriptive Statistics

Dependent Variable:LEG_avg

WC_ID	PPLLDRS_ID	Mean	Std. Deviation	N
CNTRL (1-4)	TRUE (SUPV)	2.9435	.72725	17
	FALSE (EMPL)	3.0078	.75936	37
	Total	2.9876	.74313	54
A-SUPP (4-7)	TRUE (SUPV)	3.0300	.54221	141
	FALSE (EMPL)	2.9070	.56447	225
	Total	2.9544	.55848	366
Total	TRUE (SUPV)	3.0207	.56283	158
	FALSE (EMPL)	2.9212	.59517	262
	Total	2.9586	.58453	420

Levene's Test of Equality of Error Variances[a]

Dependent Variable:LEG_avg

F	df1	df2	Sig.
3.401	3	416	.018

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + WC_ID + PPLLDRS_ID + WC_ID * PPLLDRS_ID

Tests of Between-Subjects Effects

Dependent Variable:LEG_avg

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	1.412[a]	3	.471	1.381	.248	.010	4.144	.367
Intercept	1451.246	1	1451.246	4258.988	.000	.911	4258.988	1.000
WC_ID	.002	1	.002	.006	.937	.000	.006	.051
PPLLDRS_ID	.035	1	.035	.104	.747	.000	.104	.062
WC_ID * PPLLDRS_ID	.360	1	.360	1.058	.304	.003	1.058	.177
Error	141.752	416	.341					
Total	3819.662	420						
Corrected Total	143.164	419						

a. R Squared = .010 (Adjusted R Squared = .003)

b. Computed using alpha = .05

P2 (a): TWO-WAY ANOVA (ETHICAL)

Descriptive Statistics

Dependent Variable:ETH_avg

WC_ID	PPLLDRS_ID	Mean	Std. Deviation	N
CNTRL (1-4)	TRUE (SUPV)	2.8888	.52381	17
	FALSE (EMPL)	2.9692	.81769	37
	Total	2.9439	.73376	54
A-SUPP (4-7)	TRUE (SUPV)	2.7723	.58744	141
	FALSE (EMPL)	2.8260	.62320	225
	Total	2.8053	.60942	366
Total	TRUE (SUPV)	2.7848	.58051	158
	FALSE (EMPL)	2.8463	.65425	262
	Total	2.8231	.62753	420

Levene's Test of Equality of Error Variances[a]

Dependent Variable:ETH_avg

F	df1	df2	Sig.
1.596	3	416	.190

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + WC_ID + PPLLDRS_ID + WC_ID * PPLLDRS_ID

Tests of Between-Subjects Effects

Dependent Variable:ETH_avg

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	1.229[a]	3	.410	1.041	.374	.007	3.123	.282
Intercept	1347.687	1	1347.687	3423.358	.000	.892	3423.358	1.000
WC_ID	.693	1	.693	1.759	.185	.004	1.759	.263
PPLLDRS_ID	.185	1	.185	.469	.494	.001	.469	.105
WC_ID * PPLLDRS_ID	.007	1	.007	.018	.892	.000	.018	.052
Error	163.768	416	.394					
Total	3512.455	420						
Corrected Total	164.998	419						

a. R Squared = .007 (Adjusted R Squared = .000)

b. Computed using alpha = .05

P2 (a): TWO-WAY ANOVA (PHILANTHROPIC)

Descriptive Statistics

Dependent Variable:PHI_avg

WC_ID	PPLLDRS_ID	Mean	Std. Deviation	N
CNTRL (1-4)	TRUE (SUPV)	1.6547	.47334	17
	FALSE (EMPL)	1.4989	.66907	37
	Total	1.5480	.61404	54
A-SUPP (4-7)	TRUE (SUPV)	1.5360	.57328	141
	FALSE (EMPL)	1.6160	.60346	225
	Total	1.5852	.59250	366
Total	TRUE (SUPV)	1.5488	.56326	158
	FALSE (EMPL)	1.5994	.61315	262
	Total	1.5804	.59470	420

Levene's Test of Equality of Error Variances[a]

Dependent Variable:PHI_avg

F	df1	df2	Sig.
.521	3	416	.668

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + WC_ID + PPLLDRS_ID + WC_ID * PPLLDRS_ID

Tests of Between-Subjects Effects

Dependent Variable:PHI_avg

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	.902[a]	3	.301	.849	.468	.006	2.546	.235
Intercept	408.274	1	408.274	1153.166	.000	.735	1153.166	1.000
WC_ID	2.765E-5	1	2.765E-5	.000	.993	.000	.000	.050
PPLLDRS_ID	.059	1	.059	.167	.683	.000	.167	.069
WC_ID * PPLLDRS_ID	.571	1	.571	1.611	.205	.004	1.611	.245
Error	147.283	416	.354					
Total	1197.179	420						
Corrected Total	148.185	419						

a. R Squared = .006 (Adjusted R Squared = -.001)

b. Computed using alpha = .05

P2 (b): TWO-WAY ANOVA (ECONOMIC)

Descriptive Statistics

Dependent Variable:ECO_avg

WC_ID	JOBFNCx2_ID	Mean	Std. Deviation	N
CNTRL (1-4)	EMPL= ADM+FRNT+PRO/SPC	2.4748	.62626	46
	SUPRV	2.7738	1.26734	8
	Total	2.5191	.74608	54
A-SUPP (4-7)	EMPL= ADM+FRNT+PRO/SPC	2.6327	.75699	274
	SUPRV	2.7221	.51918	92
	Total	2.6552	.70520	366
Total	EMPL= ADM+FRNT+PRO/SPC	2.6100	.74082	320
	SUPRV	2.7262	.60127	100
	Total	2.6377	.71113	420

Levene's Test of Equality of Error Variances[a]

Dependent Variable:ECO_avg

F	df1	df2	Sig.
6.217	3	416	.000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + WC_ID + JOBFNCx2_ID + WC_ID * JOBFNCx2_ID

Tests of Between-Subjects Effects

Dependent Variable:ECO_avg

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	2.031[a]	3	.677	1.342	.260	.010	4.025	.358
Intercept	697.204	1	697.204	1382.040	.000	.769	1382.040	1.000
WC_ID	.070	1	.070	.139	.710	.000	.139	.066
JOBFNCx2_ID	.935	1	.935	1.854	.174	.004	1.854	.274
WC_ID * JOBFNCx2_ID	.272	1	.272	.540	.463	.001	.540	.113
Error	209.861	416	.504					
Total	3133.952	420						
Corrected Total	211.892	419						

a. R Squared = .010 (Adjusted R Squared = .002)

b. Computed using alpha = .05

P2 (b): TWO-WAY ANOVA (LEGAL)

Descriptive Statistics

Dependent Variable:LEG_avg

WC_ID	JOBFNCx2_ID	Mean	Std. Deviation	N
CNTRL (1-4)	EMPL= ADM+FRNT+PRO/SPC	2.9772	.72905	46
	SUPRV	3.0475	.87155	8
	Total	2.9876	.74313	54
A-SUPP (4-7)	EMPL= ADM+FRNT+PRO/SPC	2.9075	.56150	274
	SUPRV	3.0940	.52804	92
	Total	2.9544	.55848	366
Total	EMPL= ADM+FRNT+PRO/SPC	2.9175	.58771	320
	SUPRV	3.0903	.55693	100
	Total	2.9586	.58453	420

Levene's Test of Equality of Error Variances[a]

Dependent Variable:LEG_avg

F	df1	df2	Sig.
4.167	3	416	.006

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + WC_ID + JOBFNCx2_ID + WC_ID * JOBFNCx2_ID

Tests of Between-Subjects Effects

Dependent Variable:LEG_avg

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	2.482[a]	3	.827	2.447	.063	.017	7.340	.608
Intercept	896.877	1	896.877	2652.102	.000	.864	2652.102	1.000
WC_ID	.003	1	.003	.010	.921	.000	.010	.051
JOBFNCx2_ID	.409	1	.409	1.210	.272	.003	1.210	.195
WC_ID * JOBFNCx2_ID	.084	1	.084	.248	.619	.001	.248	.079
Error	140.681	416	.338					
Total	3819.662	420						
Corrected Total	143.164	419						

a. R Squared = .017 (Adjusted R Squared = .010)

b. Computed using alpha = .05

261

P2 (b): TWO-WAY ANOVA (ETHICAL)

Descriptive Statistics

Dependent Variable:ETH_avg

WC_ID	JOBFNCx2_ID	Mean	Std. Deviation	N
CNTRL (1-4)	EMPL=ADM+FRNT+PRO/SPC	2.9822	.75523	46
	SUPRV	2.7238	.58724	8
	Total	2.9439	.73376	54
A-SUPP (4-7)	EMPL=ADM+FRNT+PRO/SPC	2.8303	.62157	274
	SUPRV	2.7311	.56849	92
	Total	2.8053	.60942	366
Total	EMPL=ADM+FRNT+PRO/SPC	2.8521	.64338	320
	SUPRV	2.7305	.56696	100
	Total	2.8231	.62753	420

Levene's Test of Equality of Error Variances[a]

Dependent Variable:ETH_avg

F	df1	df2	Sig.
.922	3	416	.430

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + WC_ID + JOBFNCx2_ID + WC_ID * JOBFNCx2_ID

Tests of Between-Subjects Effects

Dependent Variable:ETH_avg

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	2.036[a]	3	.679	1.732	.160	.012	5.197	.452
Intercept	787.254	1	787.254	2009.660	.000	.829	2009.660	1.000
WC_ID	.130	1	.130	.331	.565	.001	.331	.089
JOBFNCx2_ID	.793	1	.793	2.024	.156	.005	2.024	.295
WC_ID * JOBFNCx2_ID	.157	1	.157	.401	.527	.001	.401	.097
Error	162.962	416	.392					
Total	3512.455	420						
Corrected Total	164.998	419						

a. R Squared = .012 (Adjusted R Squared = .005)

b. Computed using alpha = .05

262

P2 (b): TWO-WAY ANOVA (PHILANTHROPIC)

Descriptive Statistics

Dependent Variable:PHI_avg

WC_ID	JOBFNCx2_ID	Mean	Std. Deviation	N
CNTRL (1-4)	EMPL= ADM+FRNT+PRO/SPC	1.5652	.63700	46
	SUPRV	1.4488	.48274	8
	Total	1.5480	.61404	54
A-SUPP (4-7)	EMPL= ADM+FRNT+PRO/SPC	1.6297	.60862	274
	SUPRV	1.4526	.52261	92
	Total	1.5852	.59250	366
Total	EMPL= ADM+FRNT+PRO/SPC	1.6204	.61217	320
	SUPRV	1.4523	.51723	100
	Total	1.5804	.59470	420

Levene's Test of Equality of Error Variances[a]

Dependent Variable:PHI_avg

F	df1	df2	Sig.
.714	3	416	.544

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + WC_ID + JOBFNCx2_ID + WC_ID * JOBFNCx2_ID

Tests of Between-Subjects Effects

Dependent Variable:PHI_avg

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	2.317[a]	3	.772	2.202	.087	.016	6.607	.558
Intercept	230.464	1	230.464	657.258	.000	.612	657.258	1.000
WC_ID	.029	1	.029	.083	.774	.000	.083	.059
JOBFNCx2_ID	.534	1	.534	1.524	.218	.004	1.524	.234
WC_ID * JOBFNCx2_ID	.023	1	.023	.065	.799	.000	.065	.057
Error	145.868	416	.351					
Total	1197.179	420						
Corrected Total	148.185	419						

a. R Squared = .016 (Adjusted R Squared = .009)

b. Computed using alpha = .05

263

P3: TWO-WAY ANOVA (ECONOMIC)

Descriptive Statistics

Dependent Variable:ECO_avg

WC_ID	WORKSITE_ID	Mean	Std. Deviation	N
CNTRL (1-4)	FIELD	2.5191	.64713	22
	OFFICE	2.5191	.81729	32
	Total	2.5191	.74608	54
A-SUPP (4-7)	FIELD	2.7599	.65001	124
	OFFICE	2.6015	.72733	242
	Total	2.6552	.70520	366
Total	FIELD	2.7236	.65309	146
	OFFICE	2.5919	.73726	274
	Total	2.6377	.71113	420

Levene's Test of Equality of Error Variances[a]

Dependent Variable:ECO_avg

F	df1	df2	Sig.
.935	3	416	.423

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + WC_ID + WORKSITE_ID + WC_ID * WORKSITE_ID

Tests of Between-Subjects Effects

Dependent Variable:ECO_avg

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	2.929[a]	3	.976	1.944	.122	.014	5.832	.501
Intercept	1216.527	1	1216.527	2421.847	.000	.853	2421.847	1.000
WC_ID	1.175	1	1.175	2.340	.127	.006	2.340	.332
WORKSITE_ID	.282	1	.282	.562	.454	.001	.562	.116
WC_ID * WORKSITE_ID	.282	1	.282	.562	.454	.001	.562	.116
Error	208.963	416	.502					
Total	3133.952	420						
Corrected Total	211.892	419						

a. R Squared = .014 (Adjusted R Squared = .007)

b. Computed using alpha = .05

P3: TWO-WAY ANOVA (LEGAL)

Descriptive Statistics

Dependent Variable:LEG_avg

WC_ID	WORKSITE_ID	Mean	Std. Deviation	N
CNTRL (1-4)	FIELD	3.1714	.64902	22
	OFFICE	2.8612	.78637	32
	Total	2.9876	.74313	54
A-SUPP (4-7)	FIELD	3.0121	.57507	124
	OFFICE	2.9248	.54863	242
	Total	2.9544	.55848	366
Total	FIELD	3.0361	.58720	146
	OFFICE	2.9174	.57996	274
	Total	2.9586	.58453	420

Levene's Test of Equality of Error Variances[a]

Dependent Variable:LEG_avg

F	df1	df2	Sig.
3.202	3	416	.023

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + WC_ID + WORKSITE_ID + WC_ID * WORKSITE_ID

Tests of Between-Subjects Effects

Dependent Variable:LEG_avg

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	1.931[a]	3	.644	1.896	.130	.013	5.687	.490
Intercept	1611.552	1	1611.552	4746.808	.000	.919	4746.808	1.000
WC_ID	.103	1	.103	.304	.582	.001	.304	.085
WORKSITE_ID	1.777	1	1.777	5.233	.023	.012	5.233	.626
WC_ID * WORKSITE_ID	.558	1	.558	1.645	.200	.004	1.645	.249
Error	141.233	416	.340					
Total	3819.662	420						
Corrected Total	143.164	419						

a. R Squared = .013 (Adjusted R Squared = .006)

b. Computed using alpha = .05

P3: TWO-WAY ANOVA (ETHICAL)

Descriptive Statistics

Dependent Variable:ETH_avg

WC_ID	WORKSITE_ID	Mean	Std. Deviation	N
CNTRL (1-4)	FIELD	2.7509	.66446	22
	OFFICE	3.0766	.75949	32
	Total	2.9439	.73376	54
A-SUPP (4-7)	FIELD	2.6898	.56888	124
	OFFICE	2.8645	.62203	242
	Total	2.8053	.60942	366
Total	FIELD	2.6990	.58219	146
	OFFICE	2.8893	.64165	274
	Total	2.8231	.62753	420

Levene's Test of Equality of Error Variances[a]

Dependent Variable:ETH_avg

F	df1	df2	Sig.
1.495	3	416	.215

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + WC_ID + WORKSITE_ID + WC_ID * WORKSITE_ID

Tests of Between-Subjects Effects

Dependent Variable:ETH_avg

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	4.791[a]	3	1.597	4.147	.007	.029	12.440	.851
Intercept	1457.176	1	1457.176	3783.766	.000	.901	3783.766	1.000
WC_ID	.839	1	.839	2.180	.141	.005	2.180	.313
WORKSITE_ID	2.817	1	2.817	7.315	.007	.017	7.315	.770
WC_ID * WORKSITE_ID	.256	1	.256	.665	.415	.002	.665	.129
Error	160.207	416	.385					
Total	3512.455	420						
Corrected Total	164.998	419						

a. R Squared = .029 (Adjusted R Squared = .022)

b. Computed using alpha = .05

P3: TWO-WAY ANOVA (PHILANTHROPIC)

Descriptive Statistics

Dependent Variable:PHI_avg

WC_ID	WORKSITE_ID	Mean	Std. Deviation	N
CNTRL (1-4)	FIELD	1.5577	.68565	22
	OFFICE	1.5413	.57100	32
	Total	1.5480	.61404	54
A-SUPP (4-7)	FIELD	1.5385	.57947	124
	OFFICE	1.6090	.59885	242
	Total	1.5852	.59250	366
Total	FIELD	1.5414	.59411	146
	OFFICE	1.6011	.59505	274
	Total	1.5804	.59470	420

Levene's Test of Equality of Error Variances[a]

Dependent Variable:PHI_avg

F	df1	df2	Sig.
.485	3	416	.693

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + WC_ID + WORKSITE_ID + WC_ID * WORKSITE_ID

Tests of Between-Subjects Effects

Dependent Variable:PHI_avg

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	.476[a]	3	.159	.447	.720	.003	1.341	.140
Intercept	438.910	1	438.910	1236.127	.000	.748	1236.127	1.000
WC_ID	.027	1	.027	.075	.784	.000	.075	.059
WORKSITE_ID	.033	1	.033	.092	.761	.000	.092	.061
WC_ID * WORKSITE_ID	.085	1	.085	.240	.625	.001	.240	.078
Error	147.709	416	.355					
Total	1197.179	420						
Corrected Total	148.185	419						

a. R Squared = .003 (Adjusted R Squared = -.004)

b. Computed using alpha = .05

267

Appendix O: SPSS Output (Hypotheses P4–P5)

P4: ONE-WAY ANOVA (ECONOMIC)

Descriptives

ECO_avg

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	Between-Component Variance
					Lower Bound	Upper Bound			
BASIC ED	32	2.5956	.58407	.10325	2.3850	2.8062	1.60	4.53	
TECHNICAL ED	123	2.6483	.69975	.06309	2.5234	2.7732	.73	4.40	
ACADEMIC ED	265	2.6378	.73214	.04497	2.5493	2.7264	.13	5.47	
Total	420	2.6377	.71113	.03470	2.5695	2.7059	.13	5.47	
Model Fixed Effects			.71272	.03478	2.5693	2.7060			
Random Effects				.03478ᵃ	2.4880ᵃ	2.7873ᵃ			-.00441

a. Warning: Between-component variance is negative. It was replaced by 0.0 in computing this random effects measure.

Test of Homogeneity of Variances

ECO_avg

Levene Statistic	df1	df2	Sig.
.506	2	417	.603

ANOVA

ECO_avg

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.070	2	.035	.069	.933
Within Groups	211.822	417	.508		
Total	211.892	419			

Robust Tests of Equality of Means

ECO_avg

	Statisticᵃ	df1	df2	Sig.
Welch	.096	2	88.547	.909
Brown-Forsythe	.082	2	170.312	.921

a. Asymptotically F distributed.

P4: ONE-WAY ANOVA (LEGAL)

Descriptives

LEG_avg

| | | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum | Between-Component Variance |
						Lower Bound	Upper Bound			
BASIC ED		32	3.1603	.58359	.10317	2.9499	3.3707	2.27	4.80	
TECHNICAL ED		123	2.9107	.57249	.05162	2.8085	3.0128	1.13	4.93	
ACADEMIC ED		265	2.9566	.58722	.03607	2.8855	3.0276	1.13	5.07	
Total		420	2.9586	.58453	.02852	2.9026	3.0147	1.13	5.07	
Model	Fixed Effects			.58268	.02843	2.9028	3.0145			
	Random Effects				.05367	2.7277	3.1896			.00423

Test of Homogeneity of Variances

LEG_avg

Levene Statistic	df1	df2	Sig.
.315	2	417	.730

ANOVA

LEG_avg

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.586	2	.793	2.336	.098
Within Groups	141.578	417	.340		
Total	143.164	419			

Robust Tests of Equality of Means

LEG_avg

	Statistic[a]	df1	df2	Sig.
Welch	2.326	2	83.150	.104
Brown-Forsythe	2.354	2	122.819	.099

a. Asymptotically F distributed.

P4: ONE-WAY ANOVA (ETHICAL)

Descriptives

ETH_avg

| | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum | Between-Component Variance |
					Lower Bound	Upper Bound			
BASIC ED	32	2.7588	.55833	.09870	2.5575	2.9600	1.67	4.00	
TECHNICAL ED	123	2.8153	.68549	.06181	2.6929	2.9376	1.40	5.47	
ACADEMIC ED	265	2.8346	.60875	.03740	2.7609	2.9082	.27	4.93	
Total	420	2.8231	.62753	.03062	2.7630	2.8833	.27	5.47	
Model Fixed Effects			.62870	.03068	2.7628	2.8834			
Random Effects				.03068[a]	2.6911[a]	2.9551[a]			-.00287

a. Warning: Between-component variance is negative. It was replaced by 0.0 in computing this random effects measure.

Test of Homogeneity of Variances

ETH_avg

Levene Statistic	df1	df2	Sig.
.653	2	417	.521

ANOVA

ETH_avg

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.175	2	.087	.221	.802
Within Groups	164.823	417	.395		
Total	164.998	419			

Robust Tests of Equality of Means

ETH_avg

	Statistic[a]	df1	df2	Sig.
Welch	.265	2	84.522	.768
Brown-Forsythe	.231	2	156.963	.794

a. Asymptotically F distributed.

270

P4: ONE-WAY ANOVA (PHILANTHROPIC)

Descriptives

PHI_avg

| | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum | Between-Component Variance |
					Lower Bound	Upper Bound			
BASIC ED	32	1.4850	.51037	.09022	1.3010	1.6690	.40	2.33	
TECHNICAL ED	123	1.6254	.56750	.05117	1.5242	1.7267	.00	3.67	
ACADEMIC ED	265	1.5710	.61624	.03786	1.4964	1.6455	.13	3.87	
Total	420	1.5804	.59470	.02902	1.5233	1.6374	.00	3.87	
Model Fixed Effects			.59498	.02903	1.5233	1.6374			
Random Effects				.02903[a]	1.4555[a]	1.7053[a]			-.00067

a. Warning: Between-component variance is negative. It was replaced by 0.0 in computing this random effects measure.

Test of Homogeneity of Variances

PHI_avg

Levene Statistic	df1	df2	Sig.
1.306	2	417	.272

ANOVA

PHI_avg

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.564	2	.282	.797	.451
Within Groups	147.621	417	.354		
Total	148.185	419			

Robust Tests of Equality of Means

PHI_avg

	Statistic[a]	df1	df2	Sig.
Welch	.970	2	87.464	.383
Brown-Forsythe	.927	2	156.416	.398

a. Asymptotically F distributed.

271

P5: ONE-WAY ANOVA (ECONOMIC)

Descriptives

ECO_avg

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	Between-Component Variance
					Lower Bound	Upper Bound			
BBOOM (<=1965)	178	2.6510	.69406	.05202	2.5483	2.7537	.73	5.47	
GENX (1966-1980)	176	2.6963	.71289	.05374	2.5902	2.8023	.87	5.40	
MILLNL (>=1981)	66	2.4455	.72975	.08983	2.2661	2.6249	.13	4.53	
Total	420	2.6377	.71113	.03470	2.5695	2.7059	.13	5.47	
Model Fixed Effects			.70765	.03453	2.5698	2.7055			
Random Effects				.06493	2.3583	2.9170			.00796

Test of Homogeneity of Variances

ECO_avg

Levene Statistic	df1	df2	Sig.
.200	2	417	.819

ANOVA

ECO_avg

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.074	2	1.537	3.069	.047
Within Groups	208.818	417	.501		
Total	211.892	419			

Robust Tests of Equality of Means

ECO_avg

	Statistic[a]	df1	df2	Sig.
Welch	2.905	2	178.691	.057
Brown-Forsythe	3.009	2	258.819	.051

a. Asymptotically F distributed.

Post Hoc Tests

Multiple Comparisons

ECO_avg
Bonferroni

(I) BIRTHYR_ID	(J) BIRTHYR_ID	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BBOOM (<=1965)	GENX (1966-1980)	-.04524	.07522	1.000	-.2261	.1356
	MILLNL (>=1981)	.20556	.10198	.133	-.0396	.4507
GENX (1966-1980)	BBOOM (<=1965)	.04524	.07522	1.000	-.1356	.2261
	MILLNL (>=1981)	.25080*	.10214	.043	.0053	.4963
MILLNL (>=1981)	BBOOM (<=1965)	-.20556	.10198	.133	-.4507	.0396
	GENX (1966-1980)	-.25080*	.10214	.043	-.4963	-.0053

*. The mean difference is significant at the 0.05 level.

P5: ONE-WAY ANOVA (LEGAL)

Descriptives

LEG_avg

| | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum | Between-Component Variance |
					Lower Bound	Upper Bound			
BBOOM (<=1965)	178	3.0119	.57160	.04284	2.9273	3.0964	1.13	5.07	
GENX (1966-1980)	176	2.9711	.61453	.04632	2.8797	3.0625	1.13	5.00	
MILLNL (>=1981)	66	2.7820	.50615	.06230	2.6575	2.9064	1.47	4.20	
Total	420	2.9586	.58453	.02852	2.9026	3.0147	1.13	5.07	
Model Fixed Effects			.58061	.02833	2.9030	3.0143			
Random Effects				.05999	2.7005	3.2168			.00736

Test of Homogeneity of Variances

LEG_avg

Levene Statistic	df1	df2	Sig.
.731	2	417	.482

ANOVA

LEG_avg

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.591	2	1.296	3.843	.022
Within Groups	140.572	417	.337		
Total	143.164	419			

Robust Tests of Equality of Means

LEG_avg

	Statistic[a]	df1	df2	Sig.
Welch	4.766	2	191.907	.010
Brown-Forsythe	4.155	2	326.055	.017

a. Asymptotically F distributed.

Post Hoc Tests

Multiple Comparisons

LEG_avg
Bonferroni

| (I) BIRTHYR_ID | (J) BIRTHYR_ID | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
					Lower Bound	Upper Bound
BBOOM (<=1965)	GENX (1966-1980)	.04077	.06172	1.000	-.1076	.1891
	MILLNL (>=1981)	.22988*	.08367	.019	.0288	.4310
GENX (1966-1980)	BBOOM (<=1965)	-.04077	.06172	1.000	-.1891	.1076
	MILLNL (>=1981)	.18911	.08380	.074	-.0123	.3905
MILLNL (>=1981)	BBOOM (<=1965)	-.22988*	.08367	.019	-.4310	-.0288
	GENX (1966-1980)	-.18911	.08380	.074	-.3905	.0123

*. The mean difference is significant at the 0.05 level.

P5: ONE-WAY ANOVA (ETHICAL)

Descriptives

ETH_avg

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	Between-Component Variance
					Lower Bound	Upper Bound			
BBOOM (<=1965)	178	2.7772	.55314	.04146	2.6954	2.8590	1.27	4.67	
GENX (1966-1980)	176	2.8041	.72173	.05440	2.6967	2.9115	.27	5.47	
MILLNL (>=1981)	66	2.9979	.51487	.06338	2.8713	3.1244	1.80	4.60	
Total	420	2.8231	.62753	.03062	2.7630	2.8833	.27	5.47	
Model Fixed Effects			.62433	.03046	2.7633	2.8830			
Random Effects				.05807	2.5733	3.0730			.00643

Test of Homogeneity of Variances

ETH_avg

Levene Statistic	df1	df2	Sig.
3.730	2	417	.025

ANOVA

ETH_avg

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.455	2	1.227	3.149	.044
Within Groups	162.543	417	.390		
Total	164.998	419			

Robust Tests of Equality of Means

ETH_avg

	Statistic[a]	df1	df2	Sig.
Welch	4.415	2	192.678	.013
Brown-Forsythe	3.495	2	336.273	.031

a. Asymptotically F distributed.

Post Hoc Tests

Multiple Comparisons

ETH_avg
Bonferroni

(I) BIRTHYR_ID	(J) BIRTHYR_ID	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BBOOM (<=1965)	GENX (1966-1980)	-.02690	.06637	1.000	-.1864	.1326
	MILLNL (>=1981)	-.22069*	.08998	.044	-.4370	-.0044
GENX (1966-1980)	BBOOM (<=1965)	.02690	.06637	1.000	-.1326	.1864
	MILLNL (>=1981)	-.19379	.09011	.096	-.4104	.0228
MILLNL (>=1981)	BBOOM (<=1965)	.22069*	.08998	.044	.0044	.4370
	GENX (1966-1980)	.19379	.09011	.096	-.0228	.4104

*. The mean difference is significant at the 0.05 level.

P5: ONE-WAY ANOVA (PHILANTHROPIC)

Descriptives

PHI_avg

| | | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum | Between-Component Variance |
						Lower Bound	Upper Bound			
BBOOM (<=1965)		178	1.5603	.59921	.04491	1.4716	1.6489	.00	3.87	
GENX (1966-1980)		176	1.5282	.56523	.04261	1.4441	1.6123	.13	3.53	
MILLNL (>=1981)		66	1.7738	.62881	.07740	1.6192	1.9284	.53	3.53	
Total		420	1.5804	.59470	.02902	1.5233	1.6374	.00	3.87	
Model	Fixed Effects			.59001	.02879	1.5238	1.6370			
	Random Effects				.06495	1.3009	1.8599			.00892

Test of Homogeneity of Variances

PHI_avg

Levene Statistic	df1	df2	Sig.
.616	2	417	.541

ANOVA

PHI_avg

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.020	2	1.510	4.338	.014
Within Groups	145.165	417	.348		
Total	148.185	419			

Robust Tests of Equality of Means

PHI_avg

	Statistic[a]	df1	df2	Sig.
Welch	3.941	2	176.320	.021
Brown-Forsythe	4.162	2	245.284	.017

a. Asymptotically F distributed.

Post Hoc Tests

Multiple Comparisons

PHI_avg
Bonferroni

| (I) BIRTHYR_ID | (J) BIRTHYR_ID | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
					Lower Bound	Upper Bound
BBOOM (<=1965)	GENX (1966-1980)	.03210	.06272	1.000	-.1187	.1829
	MILLNL (>=1981)	-.21351*	.08503	.037	-.4179	-.0091
GENX (1966-1980)	BBOOM (<=1965)	-.03210	.06272	1.000	-.1829	.1187
	MILLNL (>=1981)	-.24561*	.08516	.012	-.4503	-.0409
MILLNL (>=1981)	BBOOM (<=1965)	.21351*	.08503	.037	.0091	.4179
	GENX (1966-1980)	.24561*	.08516	.012	.0409	.4503

*. The mean difference is significant at the 0.05 level.