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E-EXCHANGE, SOCIAL RESPONSIBILITY AND VIRTUAL ORGANIZATIONS: FROM C2C SYSTEMS TO SOCIAL NETWORKS

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Stephen C. Betts, William Paterson University

ABSTRACT

The internet revolution gave rise to a number of new business models such as electronically enabled B2C (Business to Consumer), B2B (Business to Business), C2C (Consumer to Consumer) and P2P (Peer to Peer). These new 'e-exchange' models were essentially virtual organizations. They were without the legal entities and hierarchical governance structures associated with traditional organizations, but are they exempt from the social responsibilities? These forms developed rapidly and enormous strides were made in information exchange and social media, creating more new forms of virtual organization. The structure and governance of internet-facilitated virtual organizations have grown to be ever more complex. Expectations and mechanisms of meeting social responsibilities have also evolved, however they did so in a fragmented way. In this paper we use stakeholder and path dependence theories as lenses to track the progress and examine the current state of economic, legal, ethical and discretionary social responsibility efforts across the user-participation e-exchange spectrum.

Keywords: Social Responsibility, Social Networks, E-Exchange, Virtual Organizations, Path Dependency, Social Identity

INTRODUCTION

We define 'e-exchange' as any of a number of forms of electronically enabled internet based marketplaces for the exchange of products, services, information and ideas. C2C and P2P e-exchanges came first and took place among individuals either selling/buying their goods and services to other individuals or sharing/receiving some resources with others. Such e-exchanges were facilitated and enabled by online marketplaces and platforms. Over time, the ranks of these internet facilitated e-exchanges of goods and services were joined by other exchanges most notably that of ideas and information in the form of social media. In the 20+ years since such platforms were introduced, a number of forms of virtual organizations have emerged (Betts & Taran, 2003; Williamson, 1991; Ouchi, 1980). Over time, the lines between business, governmental and non-governmental organizations blur as "they are all organizations" (Bromley & Meyer, 2017); but, as will be shown later, so is the line between traditional and virtual organizations. Traditional organizations have an expectation to be involved in some forms of socially responsible behavior. In this paper we examine the virtual organizations enabled by these e-exchanges with regards to their involvement with social causes and meeting their overall obligation to socially responsible activities.

Path dependence (Gond, Kang, & Moon 2011; Herzog 2017; Li & Xiufeng 2010) provides a useful framework to understand the dynamics of the social responsibility within the e-

exchange. The Internet was developing originally as a democratic, anonymous, free place with an emphasis on freedom of speech. That shaped it and set it on its path. As more and more people entered the e-exchange a) certain concerns grew because now any issues arising in communication multiplied by huge numbers of people b) newcomers entered the arena with no experience and different expectations of social graces c) echo chambers further multiplied concerns (d) the expectations of social protections and their actors changed.

The structure of the paper is as follows: we discuss the concept of e-exchange and their C2C and P2P forms first. We trace the evolution of online e-exchanges of products, goods and services to emergence of more formal structures among participants next followed by a discussion of the growth of social media out of information exchange online. Discussion of the social responsibility of these virtual organizations in general is followed by sections outlining their social responsibility on economic, legal, ethical and discretionary levels. In the conclusions we review our analysis and conjecture what the future will bring.

PATH DEPENDENCE

Path dependence is an evolutionary perspective on organizational processes that suggests that choices made now limit options in the future, effectively “locking” organizations on a certain path, hence the name (Nelson & Winter, 1982; David, 1985; Arthur, 1989). A typical example of such a locked path is the continued wide-spread use of non-ergonomic QWERTY keyboard layout (Gond, Kang, & Moon 2011). The layout was designed in the 1870s with the objective of preventing jams in early typewriters, a problem that is irrelevant today.

Path dependence can help us explain the development of e-exchanges in all the variety of their virtual-organizational forms. Particular developments in the e-exchanges happen because of choices and “stumbles” (as in, things that just happened without particular choices being made) made previously. Furthermore, as the new organizational forms develop and grow larger, paths that other large organizations are on start shaping the new organizations’ future as they mold the societal and individual expectations. Society approaches social responsibility based on a whole set of cultural and historical factors, which is essentially synonymous with path such dependence (Carney, 2010, Lau, 2014). “Social responsibility of business is considered as an evolutionary form of its institutional adaptation to growing requirements of civil society” (Frolov, Shulimova & Inyutina, 2013). Path dependencies shape how organizations respond to moral imperatives they perceive (Herzog, 2017).

Different paths at times bring about very similar, isomorphic organizational forms and related expectations, not unlike isomorphism in the animal kingdom whereby say sharks and dolphins have similar streamlined bodies, dorsal fins and flippers. Quite like in the animal world, such isomorphism arises in response to similar environmental pressures, for example, pressure from the stakeholders (for example, Corina & Taplin, 2012; Guea, Almaan, Circa & Dumitru, 2016). “The response to institutional change leads to the organizational isomorphism, which means that companies adopt new rules and design and in result become similar following the same managerial practice” (Roszkowska-Menkes & Aluchna, 2017). Thus, as virtual organizations mature and become bigger, they will be increasingly shaped by the expectations that have evolved for traditional organizations.

In the next section, we will describe define the term e-exchange. The evolution of e-exchange virtual organizations leading to convergent and divergent expectations and structures will be explored.

E-EXCHANGE AND NEW FORMS OF BUSINESS

The internet revolution gave rise to a number of new business models such as B2C (Business to Consumer), B2B (Business to Business), C2C (Consumer to Consumer) and P2P (Peer to Peer). C2C took place primarily in the form of auctions (e.g. eBay) and classified ads web sites. P2P systems allowed for joint use of files and content (e.g. Napster), processor capacity (e.g. SETI@Home), and other computer resource sharing. These models are all forms of what we refer to as 'E-Exchanges'.

***E-Exchange** - any of a number of forms of electronically enabled internet based marketplaces for the exchange of products, services, information and ideas.*

B2C and B2B had the characteristics of relational contracting (Zaheer & Venkatraman, 1995; Bolton, Malmrose, and Ouchi, 1994) and hybrid organizations (Williamson, 1991). C2C and P2P relationships were closer to a pure competition market or intermediate forms of governance between markets and hierarchies (Williamson, 1991) such as clan control (Ouchi, 1980). As such, the governance mechanisms of C2C and P2P fell somewhere outside internal control of a hierarchy. These new organizations were without the legal entities and hierarchical governance structures associated with traditional organizations, but were they exempt from the social responsibilities? Before this question could be fully addressed, the internet and the forms of interactions it brought evolved considerably. Thus further questions arose.

As will be demonstrated, there are two major issues: 1). the division of responsibility between the provider of the e-exchange space and the collective of the users occupying it and 2). the extent and directions of that responsibility itself, what exactly is expected and by whom? These questions then give rise to implementation concerns.

E-exchange forms and practices develop differently in different organizations as predicted by the path dependence framework. For example, different police organizations developed extremely different social media strategies based on small differences in the initial approach to implementation; these different strategies with time get institutionalized and followed (Meijer & Thaens, 2013).

FROM C2C AND P2P TO UBER AND WALMART.COM

The C2C marketplace facilitating e-exchange of merchandise and transactions between individuals has flourished since its inception. The biggest such facilitators are eBay, Amazon.com, Alibaba's sites like Taobao and AliExpress, etc. These bigger players are indeed big by any standard. Alibaba, established in 1999, boasts 550 million active annual consumers worldwide across Taobao in China, Aliexpress internationally and a few smaller properties (Ming, 2018). eBay established in 1995 estimates gross volume of merchandise passing through it as US\$83,9 billion and more than 170 million active users (Marketline, 2018). Amazon sells \$178 billion worth of goods, not all of it from C2C marketplace (Casual Living, 2018).

The e-exchange of goods and services saw another development as small businesses and entrepreneurs started to participate in the same space. Whether on eBay or Amazon or Etsy, some sellers are small and even medium size businesses. This tendency to larger entities gets further support on e-exchange sites such as Walmart.com. Walmart.com marketplace involves

filling out an application that asks, among other things, years in business and amount of merchandise sold; not all applicants are invited to join the marketplace (Walmart, 2018). Thus to a degree, what we observe is the evolution of some of the e-exchange virtual organizations into traditional structures and a new level of collective. Rather than a collective of individuals, a collective/virtual organization whose members at least partially are traditional structured hierarchies.

Smaller more specialized entities emerged as well. For example, Etsy.com specializing in hand-made and one-of-a-kind items reported sales of \$3.25 billion in merchandise in 2017. These smaller more targeted spaces run the gamut from Etsy all the way down to Facebook groups dedicated to buying and selling within specialized niches (for example, the 57 groups – as of September the 2, 2018- on Facebook trading and selling succulents (membership range from two to 14K+ members), local seller markets and other specialized groups. “Freecycling” is giving items away for free, typically instead of just throwing them away and getting other people’s unwanted items for the cost of shipping or free. Freecycling is facilitated by Craigslist and Facebook marketplace (among others).

There are a number of different approaches to C2C e-exchanges. There are online auctions (i.e. eBay) that garnered significant academic research interest (Dan, 2014) but there are also classifieds (Craigslist) and marketplaces like Amazon. There are small groups and very large powerhouses. A typical seller on eBay or Etsy will have to take care of much of the logistics (packing, mailing) themselves and allow the delivery service (Postal Service, UPS, Fed EX, etc.) to deliver. A seller on Craigslist or local trading group will often deliver that old couch or ask that it be picked up by the buyer. Amazon seller has the option of having Amazon fulfill the order. Groups have different rules and different governance structures.

As merchandise and services move through the C2C organization and money exchanges hands, societal expectations of the e-exchange participants approach those of a regular marketplace.

At the same time that general C2C commerce blossomed with major players selling billions of dollars worth of merchandise a year (Casual Living, 2018), P2P networks sustained a series of blows and reemerged somewhat changed. In the earlier days, the emphasis was on exchanging digital media such as music file sharing and movies. Bit Torrent, a very popular file sharing protocol (McKinney & Haydn, 2015) is still widely used and the company of the same name still exists (BitTorrent, 2018). However, a combination of punitive actions by the RIAA followed by massive amount of propaganda on one hand and growth of better priced and easier to use subscription services on the other hand led to decline in illegal downloads and ripping/sharing files (NPD, 2012).

At the same time P2P e-exchange expanded to involve share-riding (Uber, Lyft), housing exchange (AirBnB), P2P lending (GoFundMe), research articles (Sci Hub), and other forms. Sci-Hub allows researchers from all over the World access knowledge resources thus enabling researchers who do not enjoy the privilege of being backed up by a large wealthy institution to continue their research. The opponents point out that in doing so, there is a possibility of copyright violation. These concerns have caused a movement towards ‘open-access’ of articles (Laakso & Björk, 2012).

Societal expectations of the P2P networks and related structures are largely conflicted and constantly evolving. For example, ride sharing often directly clashes with provisions to protect labor force (Mishel, 2018). These clashing expectations were preceded by positive

reactions to the entrepreneurial nature of the field and expectations that the drivers would be empowered while effectively supplementing their income.

THE RISE OF SOCIAL MEDIA

The evolution of e-exchange of information and interactions among individuals led to the emergence of social media and social news sites. Social media is typically defined as “internet-based applications built on the ideological and technological foundations of Web 2.0” (Kaplan & Haenlein, 2010). Typically, social media involves users generating content and sharing it with other users (Linke & Zerfass, 2013). Social media e-exchange became enormously popular. In 2018, 77% of the US population had a social media account; there are estimated 2.34 billion users worldwide (Statista, 2018). Facebook, WhatsApp and Youtube are the largest platforms with more than a billion accounts each. There are a handful of other platforms as well from Twitter to LinkedIn for professional networking to Twitch Pulse for interactions around gaming streaming, Pinterest for pictures and a blast-from-the-past revived Myspace for musicians and many others. They all have the ability to create content and share it with others on the platform. They can also interact with other platforms via tools like Hootsuite.

The power of these social media-exchanges cannot be overstated. The Internet and social media are credited, for example, with being a factor in the so-called “Arab Spring” set of uprisings in Muslim countries of 2011 as protesters organized, mobilized and advocated for their cause (George, 2017). Images like those of Mohamed Bouazizi setting himself on fire to protest the policies of the government inflamed and inspired the activists and their followers.

Sites like Reddit and even more so, 4chan with their archaic build harkening back to the early forums modeled after BBS and Usenet groups, emphasis on the community instead of individual (Reddit) and complete anonymity (4chan) have a special place as information e-exchanges.

Another interesting separate case are the collectives of massively multiplayer online role-playing game (MMORPG) players where players often interact and relate to one another in a highly involved fashion that apparently crosses out into the real life. So, one of the authors had a student who found a spouse while playing World of Warcraft.

The scale and the ability to mobilize and organize large collectives of people over these e-exchanges lends them features of a virtual organization, either stand alone or mapped on a large organization. As an additional example of power of such structure, 2-channel in Japan has been characterized as

“This single site has more influence on Japanese popular opinion than the prime minister, the emperor and the traditional media combined. On one level, it serves as a fun, informative place for people to read product reviews, download software and compare everything from the size of their poop to quiz show answers. But conversations hosted here have also influenced stock prices, rallied support for philanthropic causes, organized massive synchronized dance routines, prevented terrorism and driven people to their deathbeds.”(Katayama, 2007).

The power of groups enabled by the e-exchange could be seen in multiple coordinated activities, such as, for example Distributed Denials of Service (DDOS; DDOS attacks overwhelm and thus disable the host network of the victim organization.) attacks by the Anonymous which brought about particular negative attention to the 4chan site. Later the Anonymous executed Project Chanology where they took down sites of Church of Scientology, influenced Google search to have Church of Scientology come up as #1 result on search of a

“dangerous cult”, showed up in groups of thousands wearing Guy Fawkes masks, etc. While Project Chanology started with hacking, as time progressed it was moving into more and more peaceful, legal protest (Chandler, 2013).

Much of the time, such e-exchange virtual organizations have no hierarchy. Various network gatekeeping mechanisms that control who gets access to what information play a critical role in how they are managed (Leavitt & Robinson, 2017). However, as these organizations grow bigger and more powerful, mechanisms that control other organizations start influencing the paths of the virtual organizations as well. So, many people demand that the e-exchange space providers such as Facebook or even the government provide increasing oversight of the social media to weed out potentially dangerous behaviors. The developments in the field of the artificial intelligence make such oversight quite possible. For example, Facebook has been publicizing their monitoring of users for signs of pending suicide.

SOCIAL RESPONSIBILITY AND SOCIAL AUDITS

Social responsibility of an organization (Corporate Social Responsibility: CSR) goes beyond the traditional notions of profit-driven organizations (Natale & Ford, 1994). This idea has greatly evolved over the last 30 years to the point where it is typically expected and most companies are involved in it (Stohl, Etter, Banghart & Woo, 2017).

The idea of CSR is intertwined with that of stakeholders (Clarkson, 1995) since stakeholders are the *raison d'être* of corporate social responsibility (Taran, 2013). The responsibility is essentially to the stakeholders. Stakeholders' pressure influences CSR initiatives (van Halderen, Bhatt, Berens & Brown, 2016). The stakeholders of a social media virtual organization are typically the participants of the e-exchange, everybody else involved in this issue (for example, in a case with teenage bullying, the school, the parents, the pediatricians), and oftentimes, society at large (Banghart & Stohl, 2018; Bertolotti & Magnani, 2013).

Expectations of CSR evolve over time (Bhimani, Silvola & Sivabalan, 2016). In an effort to keep up, many companies are introducing a position of a CSR officer into their staff. (Taran, 2013). While thousands of academic and practitioner articles have been devoted to CSR among formal organizations, precious few articles address the responsibility of virtual organizations of the e-exchanges, except some of its aspects such as cyberbullying. Considerable academic scrutiny of CSR of traditional organizations can be evidenced by thousands of results of search on “CSR” keywords on ProQuest. Very little if anything of that massive stream of research has been devoted to the CSR of the virtual organizations rising through the e-exchange (Betts & Taran, 2003; and not much has changed since 2003).

As more and more companies are heeding the societal mandate for CSR, efforts to somehow measure the efforts and their effects mount up. For example, MSIS maintains IVA database in which they provide rankings of CSR performance of thousands of corporations (Taran, 2013). Obviously, such a ranking effort was enabled by a clear set of comparison criteria. Such criteria set is currently absent for e-exchange virtual organizations. Social audits (Henriques, 2000) and a variety of systematic efforts to conduct social and ethical accounting auditing and reporting (Raynard, 1998) have been gaining popularity as companies are mounting systematic efforts to plan, execute and measure their CSR activities.

We are going to look at the CSR of the virtual organizations enabled through e-exchange by considering the economic, legal, ethical and discretionary responsibility of the organization

(Barney & Griffin, 1992; Carroll, 1991; Anderson, 1986). Carroll's four-factor model is well known and widely used in literature (Barney & Griffin, 1992).

CSR in organizations in general is largely shaped by social mechanisms such as discourse, mimesis, normative learning and coercion that promote institutionalizing some paths and locking others (Bise, 2017).

ECONOMIC RESPONSIBILITY

The economic responsibility of an organization is the most basic level, failing which, it cannot continue to exist: it is to meet the economic needs of its participants (Betts & Taran, 2003; Anderson, 1986). In this regard, C2C virtual organizations somewhat differ from other e-exchange organizations in that goods and services change hands, buyers buy and sell, making the issue of economics rather straightforward. C2C organizations on the surface are characterized by the presence of a multitude of sellers and buyers none of whom can impact market price and are thus price-takers, no concentration - in other words, the features of textbook-pure market competition. However, pure market competition implies perfect information which is often absent in these virtual organizations. The parties are unable to see each other or the product which may lead to problems of moral hazard and adverse selection (Huston & Spencer, 2002). To some extent, potential negative effect on any given buyer or seller may be somewhat lessened by the free entry and exit from the market.

The problem of adverse selection in C2C arena has brought about efforts to ameliorate it. One of the biggest tools of dealing with the asymmetry of information is seller ratings and buyer feedback. Such systems are not without their own flaws and over the years efforts have been put in place to deal with them. For example, there is a problem of non-buyers leaving "fake" reviews. Many ecommerce and C2C sites have resorted to banning customers with no record of purchase from leaving feedback. Of course that prevents people who bought that item elsewhere from leaving feedback as well. Amazon lets anybody post whatever they please to much delight of the crowds looking for entertainment; for example "Unfortunately I already had this exact picture tattooed on my chest, but this shirt is very useful in colder weather" as a review on Three Wolf Moon t-shirt. As a matter of fact, Amazon aggregates these funny reviews (Amazon, 2018b); however, Amazon at the same time has a "verified buyer" badge to separate those who did from those who did not buy the product.

There are also other problems with reviews. For example, for a while, eBay sellers would hold off their feedback until they see the buyer's feedback and give their feedback based on that, forcing the buyers essentially to trade for feedback. Yet despite all their flaws, systems of seller and often buyer ratings have not found a better system that could replace them in ameliorating the asymmetry of information problem.

The economic responsibility of the P2P systems and even more so, the social media users is a different item altogether. The users are just "renting" the space they are interacting with each other. It would stand to reason that it would be against their interest to have the medium go bankrupt and close down much like it is against the interest of sightseers to see their favorite park close down. That bears closer examination since oftentimes an argument is made that the responsibility for the park should be handled collectively by the society as a whole. At some future point in time, a similar argument might emerge based on the realities of that future. However right now, the health of each social media platform does not appear to warrant the

society shouldering its wellbeing. Therefore, it stands to reason that the users of these platforms have a collective responsibility to keep them economically thriving.

Even though rather begrudgingly, the social media users seem to somewhat acquiesce to the idea of needing to support Facebook's, Youtube's and others' efforts to monetize their social interactions and shared content as evidenced by lack of mass exodus of users with the advent of ads on Youtube (Jackson, 2011). Perhaps as better and better targeting algorithms start bringing up better more relevant ads, the e-exchange participants would mind even less.

While there is this economic responsibility to ensure that the platform indeed survives and is healthy, an expectation that they would bring unreasonable riches to the companies seem without merit.

LEGAL RESPONSIBILITY

Legal responsibility deals with the responsibility of the organization to obey the laws (Carroll, 1991). The C2C "bazaar" poses a few challenges at the legal level of responsibility. Due to the lacking and asymmetric information issues, there is a possibility for fraudulent and inappropriate behavior. Concerned parties filed tens of thousands of complaints related to online auction transactions with the Federal Trade Commission (Barliant, 2000). Unfortunately governmental authorities often do not pursue even blatant cases of fraud (Taran, Vicari & Betts, 2002). How much if any of this responsibility should be carried by the provider/organizer of the marketplace? Many participants of online auctions who found themselves victims of fraudulent or inappropriate sales sued the hosting sites, believing that it was the provider's legal responsibility. (Lansing & Hubbard, 2002; Le Menestrel, Hunter & de Bettignies, 2002). As the providers of the e-exchange space grow they develop mechanisms to help fight - or attempt to fight the problem fraud on their sites. For example, eBay-owned PayPal will refund the buyer and at times even freeze their assets upon a complaint from the seller.

P2P arena with its facilitation of sharing copyrighted information faces multiple challenges in the area of legal responsibility. Concerns about intellectual property rights and other issues brought on lawsuits, successful and unsuccessful efforts to close the sites down and much vitriol from the RIAA. As there are fewer people who illegally download and share (NPD, 2012), such concerns are becoming somewhat less pointed. Interestingly, more recent times brought up new frontiers in the copyright quagmire: scientific publications and predatory practices.

Virtual organizations facilitated by e-exchanges are spanning across national borders. That presents an additional set of challenges. On the global arena, laws differ (George, 2018). "Gay propaganda" is illegal in Russia and offending religious feelings is a punishable offense in many countries. Freedom of speech is not equally valued across the globe. In some countries the state controls access to the internet and therefore is able to censor content and control the flow of information (Tang & Huhe, 2020).

Activists attempting to organize for certain goals (for example, green activists criticizing BP) are not only subject to governmental scrutiny but also legal action from the corporate entities they are trying to take on (Uldam, 2018). In their efforts to enact what they feel is positive change, they run the risk of violating the law.

Activities of the Anonymous have been largely criticized mostly on two fronts: their "hacktivism" especially distributed denial of service (DDOS) hacking attacks on businesses and organizations, which they admit to, and their alleged support of child molestation, which they

have vocally and publicly denied. Whatever the case may be, they are well known for jokes in a very poor taste.

ETHICAL RESPONSIBILITY

Ethical level of responsibility deals with conducting business in a fair and just way beyond what is required by law; in particular, not causing harm through its actions (Carroll, 1991). Comparison standards regarding ethical level of responsibility are still somewhat lacking (Lawson, 2002; Shneiderman, 2000). That makes it somewhat difficult to evaluate CSR in the virtual organizations at the ethical level.

Unequal participation remains a concern. In the early days of the e-exchange, the disparity among people with different with race, gender and income were a big factor in the likelihood of participation in the e-exchange (Hoffman, Novak & Peralta 1999). By 2018, participation in the e-exchange equalized by race and gender and even to an extent, age; but income is still a factor. The biggest disparity in the US is currently between the rural areas and the urban areas (Pew Research Center, 2018)

Among the multiple ethical issues that social exchanges and C2C/P2P networks are facing are the facts that these entities operate globally. What is considered obvious and good in the US might not considered obvious and good elsewhere. Much protests were heard, for example, regarding the decision of some communications companies to comply with the law in China. (George 2017). Efforts to evaluate and monitor performance of companies like Google, Facebook, etc with regards to human rights and privacy will likely translate into efforts guiding the user collective in that direction.

E-exchange enables the participants of the virtual organizations to amass a great deal of power and mobilize quickly. At times the line between legitimate self-policing activities and illegitimate vigilantism is blurred (Taran, Vicari & Betts 2002; Badaracco & Useem 1997).

Sometimes, such efforts to right perceived wrongs are quite significant and large in scale. For example, the controversial Anonymous have led successful efforts to identify and oust criminals and child molesters on multiple occasions (Dewey, 2014). Some of the well known cases of mobilizing people against perceived wrong include the outrage against the dentist who hunted and killed Cecil the lion (Bever, 2015); outrage and online campaign that led to the firing of Justine Sacco for her apparently racist tweet which she claimed was sarcastic as well as similar campaigns against other people (Robinson, 2015).

Sometimes, social media users can cause great harm. For example, cyber-bullying among adolescents can cause lasting ill effects for the victims. Children and adolescents are especially vulnerable since their brains apparently are not fully developed yet with all that follows. (Cohen-Almagor, 2018). Providers are duly concerned with this issue. For example, Facebook has built an Anti-bullying Hub and boosted its reporting tools. Many collectives adopt extreme “no criticism” policies altogether and anybody posting anything even remotely critical that goes against the group vision is branded a “troll” and often banned.

As so often happens with efforts to curtail wide-spread behaviors, efforts to curtail cyber bullying has the potential of negative consequences from stifling the dialogue and reinforcing group-think to downright tyranny. Worse yet, there are indications of new anti-bullying and anti-harassment policies hastily drawn by a variety of organizations in terrifyingly vague ways in part due to the perceived communal pressure of the mobilized e-exchange.

In their effort not to cause harm and prevent user collectives from causing harm, providers establish rules curtailing behaviors they deem offensive and can control. For example, Facebook will immediately remove what they deem pictures of nudity. This policy helps protect users from exposure to distasteful material. This policy also penalizes groups advocating breastfeeding, medical/biology/science groups as well as those studying fine art.

The consequences of incivility in e-exchange can be daunting. Combined with the echo chamber effect where each person is exposed to mostly the opinions of people like himself and that opinion gets amplified to an “everybody thinks this way”, incivility online multiply exacerbates the political divisions that already existed in society. “Do social media threaten democracy?” asks an article in *The Economist* in their “Scandal, outrage and politics” section; and answers in the extreme affirmative (Anonymous, 2017).

“The fundamental principle of social responsibility rests on the duty to make humanity itself our end. The way to do this is by promoting the ends that autonomous human beings freely choose as long as they do not harm others Responsibility and accountability should be shared by all involved” (Cohen-Almagor, 2018)

E-exchanges have always facilitated marginal voices, often exhibiting extreme rhetoric and questionable reasoning and evidence. Thirty years ago Sherlock Holmes fans or people who believe that the Earth is flat could find like minds, but it was limited to those with the technology, like 300 baud modems, and the access and savvy to use the telnet. Nowadays the new forms of informational e-exchange allow faster dissemination and an appearance of legitimacy.

DISCRETIONARY RESPONSIBILITY

At the discretionary level of responsibility the C2C and P2P markets were grossly different. Whereas the P2P markets always had some activities that fit the category of discretionary social responsibility, the C2C market was initially devoid of such activities. This is no longer true. Societal expectations and the desire to address social need drove providers to create schemes to facilitate discretionary social responsibility by the participants. For example, Amazon will donate 0.5% of the purchase price of eligible products to a charity of the user’s choice if transactions are made via Amazon Smile (smile.amazon.com); as of May 2018, \$89,030,554.80 was donated to all charities. It will also show the amount generated by the user (Amazon, 2018). In its turn, eBay for Charity offers a set of tools to “sell for charity”, set up and monitor donations (eBay, 2018) the latter much facilitated by their ownership of PayPal.

Many P2P virtual organizations as well as the social media e-exchange participants have been advocating and rallying for causes such as, for example, animal rights, environment, feminism, as well as various other political and social causes since the inception of the platforms. For example, when neo-Nazi items were offered for sale on Yahoo! auctions, outraged French activists mobilized and took the company to court (Le Menestrel et. al., 2002). At times it is difficult to decide if the means that some of these group use are legitimate (Taran, Vicari & Betts, 2002, Badaracco & Useem, 1997). As a matter of fact, concerns arise that at times the activities of the virtual organizations cause more harm than good even as they are doing their best to enact good to society by, say, getting people who espouse harmful, in their opinion, political views fired and ostracized (Robinson, 2015). Hopefully, the virtual organizations will

be able to arrive at the middle ground between “self-tyranny” that runs any slightest non-conforming participant out on a rail and anarchy/everything goes.

To accommodate the public wish for helping causes, Facebook introduced its fundraising tool in 2017. Now rallying people and getting them to contribute to your charity is extremely easy. Anybody can create a fundraiser. They are especially popular around the user’s birthday which is also when they are at their most effective. Even somebody who has not seen anything from a particular user in a year will get a notification of that user’s birthday. And then if they click on it – and anecdotally, a great number of users do – they will see the fundraiser. “Today is my birthday and I want for you to help me fight Word Hunger” on your friends’ wall will be accompanied by a little slider telling you exactly how successful the efforts were. Facilitating websites like ActionSprout add tools to the e-exchange to facilitate coordinating campaigns for charitable causes.

PATHS OF REGULATION

Whose responsibility is it? E-exchange involves several kinds of actors: the individual members of these virtual organizations themselves and their representatives such as moderators and group admins; company owners of the virtual meeting space such as Facebook; company providers of the cable and other connection; various community groups outside of the actual e-exchange; and governmental organizations. In addition, owners of physical spaces where the Internet can be accessed have been on occasion “taken to task”. For example, the Enough Is Enough group has been successfully rallying to get Starbucks to block access to pornography in their stores (Taylor, 2018).

The same Enough Is Enough and other groups also rally for making Facebook and other companies police its pages better. These calls parallel the attitudes of customers of traditional large companies. One of the authors of this paper witnessed TV coverage of a Black Friday stampede at a Walmart store a number of years ago, where all the interviewed participants in the stampede that left one person dead and a few injured blamed Walmart for lack of security, not even mentioning the fact that some of the blame was with the people themselves. Here, the paths already locked for physical companies start influencing the paths that the new businesses follow.

CONCLUSIONS

E-exchanges facilitate emergence of virtual organizations that can mobilize large numbers of people and resources. As such, they have the social responsibility to individual people and society. Such responsibility can be analyzed on the economic, legal, ethical and discretionary levels.

On the economic level, issues of asymmetric information and resulting opportunities for fraudulent activities create some hurdles for the meeting of the social responsibility in the C2C e-exchanges. At the same time, the P2P and social media virtual organizations need to at the very least ensure that the platforms they are using survive. On the legal level, some concerns include mobilizing the virtual organizations for illegal activities from violent actions to copyright violation. C2C organizations need to meet the regular legal standards of commercial activities.

On the ethical level, these organizations can cause harm to society by perpetuating unethical practices, bullying and other harmful activities. As is the case with the legal level, these obligations are somewhat conflicting partially due to the global nature of these organizations but

also due to inherently multifaceted nature of ethical issues where tackling one of the aspects with too much vigor and strength creates problems for other aspects. On the discretionary level, there are great strides in acting toward becoming better citizens. Still, standards and safeguards need to be further developed to ensure that good causes are pursued to reasonably good net effects.

Further research directions include more detailed investigation involving empirical data, starting with the perceptions of the participants as to the extent and nature of their responsibility as members of the e-exchange virtual organizations.

There is a great potential for these virtual organizations to exert their power to do great things that benefit society. But there is also potential to cause great harm. Through combined efforts of self-policing virtual organizations and the structures and mechanisms implemented by the providers of the e-exchange space hopefully the energy of these powerful organizations can be channeled into making the world a better place. Such channeling will be greatly facilitated by a measure of self-restraint exercised by all participants. We advocate concerted persuasion efforts to that effect.

The implications of this paper for practitioners are in helping to identify the dependencies and factors that shape the expectations that stakeholders have of their business. Practitioners need to be aware of opportunities for illegal activities that can originate in a virtual community from copyright infringement to fraud based on issues of asymmetric information. They also will be influenced by the expectation of stakeholders to respond to pressure from social media to behave in a social responsible manner.

The implications for academics are that it provides a framework for approaching CSR within the e-exchanges which as of now remained a glaring gap in CSR discussions. As organizations such as Facebook and Uber become more prevalent in the news, and much of the discussion revolves around ethics and corporate responsibility, the more important it is to examine CSR in e-exchanges.

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AN EXAMINATION OF MARKETING PERFORMANCE BY RETAIL CHAIN SIZE AND BRAND ORIGIN IN THE KUWAIT COFFEE SHOP MARKET

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ABSTRACT

The purpose of this study is to investigate, in Kuwait western-style coffee shops, the effects of brand size and brand origin (domestic versus foreign) on marketing-related performance measures. It is shown that small and medium sized enterprises (SMEs) are more likely than expected to be domestic companies and very large enterprises (VLEs) are more likely to be foreign in origin. Based on surveys collected from 700 respondents in the Kuwait market, it is also found that VLEs exhibit significantly greater marketing performance as measured by number of users, retention, satisfaction, preference, penetration, and share. Additionally, it is shown that, in comparison to domestic brands, foreign brands also exhibit superior marketing performance. The paper significantly contributes to the body of research on the relationship between firm size, country of origin, and marketing performance in the Middle Eastern market.

INTRODUCTION

Profits and growth are the twin objectives of every business. Every firm aspires to achieve both, but of course, profits come first, though the two intertwine. More profits can lead to growth in size, while growth can engender more profits. Size can increase profits too as it results in economies of scale, lower cost, and hence more profits. Economies of scale increase the competitiveness of a firm and allow it to recognize more sales and thereby more profits. Growth in size affects the firm's organizational structure and activities in general. Needless to say, it is not size per se that leads to success, as management quality, competitive rivalry, and strategy also make a difference.

The purpose of this paper is to examine, in the Kuwait market, the relationship between firm size, brand origin (domestic or foreign), and a variety of performance concepts from the marketing perspective. Size affects financial performance at the bottom line. However, to achieve financial performance targets, it has been suggested that strategies must be implemented that lead to relatively high levels of performance on marketing outcome variables such as penetration, customer retention, customer satisfaction, preference, number of users, and market share (Heiens, Pleshko, and Ahmed, 2019). Little research is available on the marketing performance of different-sized firms or of domestic versus foreign firms operating in the MENA (Middle East and North Africa) region. Since the early 2000s, Middle Eastern markets have continued to experience positive economic growth (Samargandi, 2018). Kuwait itself has a population of over 4 million people and retail sales are expected to grow at a steady annual rate

in the coming years (Riebe, 2016). Therefore, this study is important for both academics and practitioners alike.

SMES AND VLES

Organizational size is a characteristic of the firm representing how large or small a firm might be. It is measured in a variety of ways depending on the industry under study, including the total sales, number of employees, or asset-holdings of firms (Calof, 1993; Dalton et al., 1980; Joaquin and Khanna, 2001). Size is an important research variable as it often exhibits an association with the major characteristic descriptors of decision making outcomes: organizational structure, strategy, and performance (Taymaz, 2005). To begin with, growth in size affects the firm's organization structure and design. In general, firms start small and with a simple organizational structure: no specializations, no departmentalization, and no formalization. As the firm grows it morphs into a functional structure at first, and then into a bureaucracy, a divisional structure and ultimately into a matrix structure (Robbins and Judge, 2009). In particular, it is widely accepted nowadays that small and large firms differ in many ways, not limited to the availability of funds for activities and management styles and objectives (Beaver 2003).

These differences may result in divergent paths to success or failure in many industries. The literature points to firm size as a determinant of company strategy, as indicated by distinctive group membership, but with no clear conclusions as to which is better. Size appears to have some influence on activity and strategy, but there is a question as to whether it is more advantageous to be a very large enterprise (VLE) or a small to medium-sized enterprise (SME) (Bilkey, 1987; Birch, 1988; Calof, 1993; Edmund and Sarkis, 1986; Ekanem, 2000; Joaquin and Khanna, 2001; Moini, 1995; Wolff and Pett, 2000). The findings from other studies suggest no relationship between size and strategy (Francis and Collins-Dodd, 2000; Leonidou and Katsikeas, 1996). This may be due to the presence or absence of other important variables, such as, for example, experience or market knowledge or skill-levels of management (Edmund and Sarkis 1986). Ali and Swiercz (1991) claim that mid-sized firms offer the greatest potential response for increasing export performance. Smith et al. (1986) have found that size is important showing that defenders outperform analyzers and prospectors as small firms, while prospectors perform better than defenders and analyzers as medium to large size firms, and analyzers perform better as very large firms. Even productivity seems to be influenced by firm size, with small firms outgrowing large firms in most cases (Van Biesenbroeck 2005; Sleuwaegen and Goedhuy, 2002).

The management of a firm does seem to differ between small and large firms. In a study of financial services in the USA, Pleshko and Nickerson (2007) found very large firms (VLEs) to be more structurally integrated, centralized, complex, market-oriented, and generally more aggressive than small and medium sized (SMEs) firms. Similarly, Dunning (1992) found that larger firms integrate their operations over larger areas than smaller firms. Moreover, Ronen and Shenker (1985) argued that larger firms were more structured, centralized and used non-personal forms of control. In the loan process, Cole et al. (2004) found that larger banks relied more on

standard procedures and financial data while smaller banks relied on the borrower's character. This use of softer information, rather than more concrete data, along with policies and procedures commonly distinguishes the SME from the VLE (Berger et al., 2005; Berger and Udell, 2002).

A number of studies have investigated the management aspects in small firms and generally found them to be wanting (Deshpande and Golhar, 1994; Flynn et al., 2015). Jennings and Beaver (1997) argued that the management process in small firms is unique and cannot be considered to be the same as the professional management in larger organizations. The multiplicity of roles expected of the owner-manager as the principal stakeholder often causes dissonance, which enhances the probability of poor decision-making and, along with the lack of attention to strategic issues, is one of the root causes of poor performance by smaller businesses. Carland et al. (1984), suggest differentiating between entrepreneurship and small businesses, and that while there is an overlap, they are different entities. Birely and Norburn (1985) and Carland et al. (1984) suggest that small businesses, entrepreneurs, and large firms differ in a variety of areas and should be treated as separate types of entities.

FIRM SIZE AND MARKETING

Dean et al. (1998) found small businesses to possess resources that allow them to overcome certain barriers that oftentimes create great difficulties for their larger counterparts. With these abilities, small businesses may be able to exploit opportunities more readily than larger ones. In the area of R&D and innovation, Acs and Auderetsch (1988) found that fewer innovations are produced in more concentrated industries. Thus, as summarized by Crum (2019), small size seems to be associated with an increase in innovation or entrepreneurship. Ahire and Golhar (1996) and Stewart et al. (1999) found no differences on size or business type regarding achievement, motivation, risk-taking, preference for innovation, and TQM implementations. Therefore, it may be possible for small businesses to be competitive with their larger company counterparts, if only in certain areas and under ideal conditions.

The mind-set of the respective SME's CEO, along with his/her personal characteristics, are hypothesized to allow even smaller companies to compete internationally with larger firms (Ruzzeir et al., 2006; Kyvik et al., 2013; Rodwell and Shadur, 1997). Pelham and Wilson (1996) believe that a small firm's cohesive culture and simple structure enhances the small firm's ability to fully exploit a market-oriented culture. Pelham (2000) found a significant impact of size on the outcomes of market-orientation. Narver and Slater (1990) went further and indicated that larger businesses may be the last to adopt a market-oriented culture, allowing smaller firms a unique opportunity to seek a competitive advantage through a market-oriented strategy. Therefore, SMEs may outperform larger VLEs in some areas related to marketing and its outcomes. Specifically, it would appear that SMEs, with an appropriate marketing culture, have some advantages in the areas of innovation, possibly due to the ability to innovate in a less bureaucratic environment. Additionally, smaller firms may have advantages in understanding a domestic market, leading to possible longer-term advantages in dealing with and satisfying customers.

On the other hand, McCartan et al. (2003) stated that small businesses are generally thought of as having inherent weaknesses with respect to capitalization and marketing. These limitations are suggested to impact the relatively higher failure rates of small businesses. As suggested before by Jennings and Beaver (1997), it appears that many classical management concepts are not suitable for application in small firms. Instead, a divide may exist between marketing education and the skill requirements of SME managers (Shohan and Paun, 1993). Therefore, for a variety of reasons, SMEs may have potential disadvantages in many areas of marketing.

Reijonen (2016) argued that marketing thought and practice varies according to the size and type of market, concluding that small businesses focused on consumers perceived 'marketing' to be advertising, while those smaller businesses focusing on other businesses had a more developed idea of 'marketing'. Walsh and Lipinski (2009), on the other hand, studied 100 SMEs in the USA and concluded that the marketing function is not as well developed or as influential in SMEs as it is in VLEs. Therefore, the perceptions and implementation of marketing and related activities in SMEs, along with lesser marketing skills, may limit what can be achieved. This may be even more evident as firm size gets smaller. Thus, VLEs may have advantages over SMEs on a variety of marketing-related factors and outcomes including having more developed management systems, higher levels of marketing thought and, of course, better resources.

BRAND ORIGIN

The word “brand” has various definitions. The American Marketing Association defines it as “a name, term, design, symbol or a combination of them intended to identify the goods and services of one seller or a group of sellers and to differentiate them from competition”. In this study, we are interested in a “brand” as the identity of a product or service business and whether it is of domestic or foreign origin, as pertaining to the Kuwait coffee shops market. In other words, “brand origin” is a representation of the country of origin; either domestic or foreign.

Aaker and Keller (1990) argue that the interest in the brand concept, while around for a long time, has grown since the 1980s. They point to the cost of introducing a brand into a new market as becoming expensive, possibly reaching a hundred million dollars. Therefore, maintaining and growing an existing brand name may be more efficient (and effective) than developing a new brand. Introducing a new brand of product or service internationally into a foreign market like Kuwait may be even more challenging and expensive. Therefore, it may be more preferential to offer an existing brand name into foreign markets, thereby eliminating many of the costs of building brand names in differing geographical markets.

To begin with, foreign brands in Kuwait could suffer from and must overcome what Peng and Meyer (2010, p. 12) call the “the liability of outsidership”, or the inherent disadvantage outsiders experience in a new environment due to their lack of familiarity with the market in terms of how to operate. For the foreign brand, gaining acceptability and penetrating markets entails another challenge. For any new brand to succeed in the Middle East, that brand must create a conversation amongst customers and service them in a way that is familiar for their

culture while staying loyal to its roots. Domestic cafes are developed with these cultural roots ingrained in their business. However, foreign coffee brands differ from domestic ones in many ways, from the architecture of the café to the type of coffee served, the style of service, and reasons for patronage in the first place.

Alternatively, foreign brands are not without their strong points. For example, they already have a brand that succeeded in their own country-market and possibly other international markets. The challenge for them is leveraging an already established brand in one market to enter a new market. In addition, they are not without resources. In fact, foreign brands probably have access to funds, other resources, and skilled personnel at levels generally unavailable to domestic brands. Also, having possibly succeeded in other geographical markets, the international brand must have learned how to appeal to different cultures. Another point in favor of foreign brands in relation to domestic brands is the country-of-origin image. Many consumers in developing see developed countries (and brands) as more advanced, efficient, and creative than their own country. Relatedly, many studies have provided evidence on what is referred to as the “country-of-origin-effect” (COOE). Presently, with most international service franchises originating from more developed countries, the consumer may prefer to patronize these brands more than domestic brands.

HYPOTHESES

Dean et al. (1998), in a study of differences in responses to environmental constraints between large firms and small firms, found small businesses to possess certain resources that allow them to overcome barriers that create difficulties for their larger counterparts. The flexibility of small-firms may allow for the faster exploitation of industry opportunities. Similarly, Ruzzeir et al. (2006) and Kyvik et al. (2013), among others, suggest that small firms have advantages over larger firms in certain areas, mostly related to adaptation and innovation. Looking at the Kuwait environment, one can see potential advantages to the domestic companies over foreign brand companies in given industries where familiarity with the local culture or environment and/or barriers to entry are evident. However, in the case of coffee shops, any advantages evident for domestic firms do not appear to be strong enough or maybe not utilized for advantage. As suggested by Kronborg and Thomsen (2009), when considering all the brands in a given product-market, those brands with foreign operations (mostly international brands) have longer survival rates than other firms (mostly domestic firms). Therefore, in the coffee shop market in Kuwait, one might expect that foreign brands would outperform domestic brands and therefore be larger, given few strategic competitive advantages of the domestic brands. Hence, the following research hypothesis is presented.

H_{R1}: The number of SMEs and VLEs will differ by Brand Origin.

Moreover, adding (generally) larger international brands to the local mix places these global firms with greater resources into a smaller local competitive services environment. Unlike with product companies, where economies of scale are readily attainable with production

learning scales, services rarely offer this long-term advantage. Advantages in the services areas can be gained through franchising, with economies of scale and experience garnered in that manner. Therefore, those service firms (such as coffee shops) with the knowledge, abilities, experience, and resources most likely will enter an environment where they will be much larger or skilled than domestic firms.

Reijonen (2010) investigated how SMEs perceive and practice marketing and whether these differed accordingly by industry and size within the SMEs. The study concluded that, like larger firms, SMEs are also interested in creating and maintaining customer relationships and that the aim of marketing is to create sales. Nonetheless, Reijonen (2010) concluded that marketing thoughts and practices cannot be regarded as being uniform within SMEs. Dunn et al (1986) studied manufacturing firms in the USA to determine whether small firms do not market and, as a corollary, that larger ones do, and found the marketing concept is practiced as much in smaller firms as in larger ones. However, the orientation towards the management of the 4Ps in smaller firms is different from large firms, they conclude. Dunn et al. (1986) found smaller firms to be more concerned with the short run operational issues of credit, quality, and inventory control rather than the wider issues associated with customer philosophy or strategic orientation. More recently, Walsh and Lipinski (2009) examined the marketing function in small and medium sized enterprises, its role as a driver of competitive advantage, and its impact on the company's performance. In their study in the US mid-Atlantic region, they found the marketing concept to be not as well developed or influential in SMEs as it is in large corporations. Supposedly, two environmental factors, type of market (the consumer) and organizational type (hierarchical), facilitate the marketing functions within the firm, they add.

The above discussion presented findings and assumptions pertaining to smaller and larger brands, as well as to domestic and foreign brands. Those items, along with the notion that marketing skills will most likely be more evident/developed in larger firms than in smaller ones, leads us to the conclusion that most marketing outcome variables should favor either foreign (rather than domestic) or larger (rather than smaller) brands. Hence, the following research hypotheses are offered.

H_{R2}: VLEs and SMEs will differ across a variety of marketing performance variables.

H_{R3}: Domestic and foreign firms will differ across a variety of marketing performance variables.

STUDY DATA COLLECTION AND SETTING

Data for the project were gathered in a series of steps. First, a literature search was undertaken to gain general information about coffee shops and the population in Kuwait. Company websites were included in the search. Second, interviewers contacted managers to obtain information about the individual western-style coffee shops and their customers. Third, interviewers contacted consumers of the western-style coffee shops to obtain information about their coffee consumption habits. At the time of the study, thirty-nine coffee shop brands/retailers

(i.e., Costa Coffee, Caribou Coffee, Starbucks) were operating in Kuwait. This list of coffee shop brands was derived from the Kuwait Chamber of Commerce, from leisure-time websites, and from questionnaires on coffee patronage. Most of these coffee shop brands had multiple locations throughout the city of Kuwait, operating approximately two hundred and fifty coffee shop outlets.

There were also two hundred and forty-three Arabic/other coffee shops in Kuwait. Therefore, the thirty-nine western-style coffee shop brands in the study accounted for approximately fifty-one percent of the total coffee shop market based on number of locations/outlets. Additionally, derived from macro-statistics on Kuwait coffee consumption (in kilograms), these western-style coffee shops make up approximately sixty percent of the total market for all coffee shops and approximately twelve percent of all coffee consumed in Kuwait (e.g., CIA World Factbook).

Interviews were conducted with the home-office marketing managers of each brand. Each interviewer was assigned the task of gathering information from 4-5 company representatives on a variety of details including: date of entry into the Kuwait market, number of customers per day, amount of coffee per serving, and the number of outlets. In each case, contact was made with either a marketing manager or head office manager.

Regarding the consumer interviews, the authors selected two descriptors, age and gender, to provide guidelines for selecting the sample. Secondary data sources provided age and gender statistics, which were used as guidelines for the percentages of adults to be included in each age/gender category (CIA World Fact book, 2019; Kuwait Public Authority for Civil Information). A target of seven hundred coffee shop users was established, with hopes of a final sample size of around six hundred. Approximately seventy graduate students, each of whom had been previously trained in the process of personal interviewing, were used to conduct the seven hundred personal interviews. In all, seven hundred people were contacted and interviewed. About eighty were discarded for various reasons resulting in six hundred and eighteen respondents who were included in the study. A test of the expected versus sample frequencies revealed no significant differences in age or gender between the sample and the population as a whole ($X^2=2.03$, ' p '=0.37).

MEASUREMENT AND DATA

The study included a variety of constructs pertaining to markets or marketing, as well as the control concepts of firm size and brand origin. Consistent with Heiens, Pleshko, and Ahmed (2109), seven marketing performance items were included: (1) the number of current users of a brand (USERS), (2) the percentage penetration of a brand into the market (PEN), (3) the percentage retention of customers after trial (RET), (4) the average preference ranking for the brand (PREF), (5) the average satisfaction rating for the brand by current users (SAT), (6) the time since entering the Kuwait market (TIME), and (7) the market share of visits to coffee shop outlets per year. The number of outlets operated by each coffee shop brand was used to measure firm size (SIZE). Finally, the brand origin, referred to as (ORIGIN), was included to represent the domestic versus foreign dichotomy of the coffee shop brands.

It is important to note that, for this project, which focuses on brand-level analyses rather than customer-level, all of the analyses in the study were done at the aggregate-level. In other words, the six hundred and eighteen consumer responses were aggregated into an average (or a percentage, or a total) pertaining to the variables for each of the thirty-nine coffee shop brands. The respondents were aggregated based on whether they were considered current users of a brand or not. This method of aggregation best reflects the natural world, where it is possible for one customer to be using multiple brands over time.

As noted previously, brand SIZE refers to the number of outlets operated by a given brand. A main point of interest in this study was to compare large organizations (VLEs) to smaller and medium size firms (SMEs). The number of outlets was found for each brand either through the management interview or from company websites. Table 1 reveals the frequency or number of outlets for the thirty-nine coffee shop brands. Note that the thirty-nine brands average 6.41 outlets each with a standard error of 1.8, a median of three, and a mode of one. If we look at the “cumulative % brands” column in Table 1, it appears that there is a natural split at twelve outlets per brand. Those coffee brands with less than twelve outlets appear to be much smaller than the other brands. Therefore, the brands were divided into two groups based on the number of outlets, with a cutoff point at twelve outlets. Brands with twelve or more outlets were considered large firms (VLEs) while those with eleven or less outlets were considered smaller or medium sized firms (SMEs). This division results in thirty-three SMEs and six VLEs. The VLEs represent 15.4% of the brands and 60.8% of the outlets, while the SMEs represent 84.6% of the brands and 39.2% of the outlets.

Brand origin, ORIGIN, is a representation of brand origin (domestic versus foreign). The interest in this study is whether the brands are domestic or international in origin. This information was found on websites or, when in question, was gathered from management interviews. Therefore, the brands were assigned to one of two groups: domestic or foreign. There were nineteen domestic firms (48.7%) and twenty foreign firms (51.3%) in the study.

Size and origin were tested against the seven marketing performance indicators: (1) the number of current users of a brand (USERS), (2) the percentage penetration of a brand into the market (PEN), (3) the percentage retention of customers after trial (RET), (4) the average preference ranking for the brand (PREF), (5) the average satisfaction rating for the brand by current users (SAT), (6) the time since entering the Kuwait market (TIME), and (7) the market share of visits (MSHARE) to coffee shop outlets per year.

The number of current users, USERS, represents if a respondent is currently using a given brand or not. A respondent was defined as a current user for a specific brand if the respondent had visited any of the outlets of a specific coffee shop brand in Kuwait within the past three months. This information was gathered by asking the respondents to indicate approximately how many times they had visited each of the coffee shop restaurants in that time period. As it is possible for a customer to be currently using more than one brand, the six hundred and eighteen respondents resulted in the total number of current users to be 5606. This equates to an average of 9.06 brands per respondent, or an average of 143.74 respondents per brand, with a standard error of the mean of 23.62 respondents per brand. This indicates that the average brand had 23.26 percent ($143.74/618=23.26\%$) of the respondent population as current

users. The range of current users for the brands was from 11 (1.8% of respondents) to 567 (91.7% of respondents) current users.

Table 1 OUTLET FREQUENCIES FOR COFFEE SHOPS						
Outlets per Brand	# Brands	% Brands	Cum. % Brands	Total # Outlets	% Outlets	Cum. % Outlets
1	9	23.1	23.1	9	3.6	3.6
2	6	15.4	38.5	12	4.8	8.4
3	7	17.9	56.4	21	8.4	16.8
4	5	12.8	69.2	20	8	24.8
5	4	10.3	79.5	20	8	32.8
8	2	5.1	84.6	16	6.4	39.2
12	2	5.1	89.7	24	9.6	48.8
13	1	2.6	92.3	13	5.2	54
14	1	2.6	94.9	14	5.6	59.6
40	1	2.6	97.4	40	16	75.6
61	1	2.6	100	61	24.4	100
TOTAL	39	100		250	100	

The penetration percentage, PEN, refers to the percentage of respondents who have tried each of the brands. Penetration percent is defined for each brand as the number of respondents who have tried the brand divided by the number of respondents. The average penetration for the thirty-nine brands was 28.7%, with a range from 2.9% to 94.7% and a standard error of the mean of 4.1%. The retention percentage, RET, was defined for each brand as the number of respondents who are current users of the brand divided by the number respondents who have tried the brand. The average retention for the thirty-nine brands was 68.4%, with a range from 42.5% to 95.9% and a standard error of the mean of 2.2%. The average preference rank, PREF, was defined for each brand as the average of the ranking given to the brand regarding preference. The average preference ranking for the thirty-nine brands was 0.377, with a range from 0.011 to 3.003 and a standard error of the mean of 0.092. The average satisfaction rating, SAT, was defined for each brand as the average general satisfaction, for current users only, measured on a semantic differential scale for one (terrible) to ten (excellent). The average satisfaction for the thirty-nine brands was 6.56, with a range from 5.15 to 8.20 and a standard error of the mean of 0.12.

The time since entering the Kuwait market, TIME, indicates how long each brand has been in Kuwait and reflects the entry timing strategy of the brand. This data was obtained either through the management interviews or the company websites. The average time-in-market for the thirty-nine brands was 94.97 months, with a range from 2 to 366 and a standard error of the mean of 12.56 months. Finally, the market share of customer visits per year, MSHARE, was defined for each brand by customer visits. The average market share in customer visits for the thirty-nine brands was 0.026, with a range from 0.001 to 0.328 and a standard error of the mean of 0.009.

ANALYSES

In order to test the proffered hypotheses, a number of statistical tests were performed. The results are shown in Tables two through five. Hypothesis H_{R1} suggests that the distribution of brand Size will differ by brand Origin. In other words, SMEs and VLEs will not be equally distributed between domestic and foreign brands. The expectation was that the larger resourced foreign firms are more likely to be VLEs. The results of the Chi-square test are shown in Table two. As noted, the statistical test is significant ($p=0.02$) and offers support for H_{R1}. It appears that foreign firms are more likely than expected to be VLEs while domestic firms are more likely than expected to be SMEs.

Table 2 CROSS-TABULATION OF SIZE AND BRAND ORIGIN				
Origin		SMEs	VLEs	Total
Domestic	n	19	0	19
	Expected n	16.1	2.9	
Foreign	n	14	6	20
	Expected n	16.9	3.1	
Total				
	n	33	6	39
$X^2 = 6.736$, $p' = 0.009$, Fisher's Exact Test: $p' = 0.020$				

Note that Table three reveals the averages of the marketing variables for Size, Origin, and combinations of Size and Origin.

Table 3 ORIGIN AND SIZE MEANS								
Brand Origin	Outlet Category	USERS Mean	PEN Mean	RET Mean	PREF Mean	SAT Mean	TIME Mean	MSHARE Mean
Domestic	SMEs	63.8	0.1384	0.6178	0.163	6.38	95.84	0.0096
	VLEs	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Total	63.8	0.1384	0.6178	0.163	6.38	95.84	0.0096
Foreign	SMEs	165.9	0.3391	0.7168	0.33	6.58	83.07	0.0147
	VLEs	345	0.6377	0.8157	1.161	7.09	120	0.1022
	Total	219.7	0.4287	0.7464	0.579	6.74	94.15	0.0409
Total	SMEs	107.2	0.2235	0.6598	0.234	6.47	90.42	0.0117
	VLEs	345	0.6377	0.8157	1.161	7.09	120	0.1022
	Total	143.7	0.2872	0.6838	0.377	6.56	94.97	0.0256

The expectations for hypotheses H_{R2} regarding brand Size were that, for penetration, retention, preference ranking, time-in-market, and market share, the VLEs will be greater. The null hypothesis (unstated) was that there are no differences regarding the indicators by brand size. In addition, the expectations for satisfaction were that the SMEs will be greater. These proposition(s) were tested using simple *t*-tests. The results for H_{R2} are shown in Table four. As

noted, for current users, penetration, retention, satisfaction, and market share, the VLEs were in fact significantly greater than the SMEs at a cutoff of 'p'=0.05 level, while the same is true for preferences at a cutoff of 'p'=0.10 level. No differences were found for months in the market between SMEs and VLEs. Therefore, support is mostly offered for H_{R2}.

Table 4							
DESCRIPTIVE STATISTICS AND T-TESTS: SMEs VS. VLEs							
Variables		N	Mean	t	d.f.	'p'	Finding
USERS	SMEs	33	107.15	4.44	37	0.000	VLEs > SMEs
	VLEs	6	345				
PEN	SMEs	33	142.06	4.37	37	0.000	VLEs > SMEs
	VLEs	6	400.83				
RET	SMEs	33	0.66	2.71	37	0.010	VLEs > SMEs
	VLEs	6	0.82				
PREF	SMEs	33	0.23	2.27	5.19	0.070	VLEs > SMEs *
	VLEs	6	1.16				
SAT	SMEs	33	6.47	2.04	37	0.048	VLEs > SMEs
	VLEs	6	7.09				
TIME	SMEs	33	90.42	0.85	37	0.403	none
	VLEs	6	120				
MSHARE	SMEs	33	0.014	3.71	37	0.001	VLEs > SMEs
	VLEs	6	0.091				
* Significant at 'p'=0.10							

The expectations for hypotheses H_{R3} regarding brand origin were that for current users, penetration, retention, preference ranking, and market share, the foreign brands will be greater. The null hypothesis (unstated) is that there are no differences regarding the indicators by brand origin. The expectations for satisfaction and time-in-market were that the domestic firms will be greater. This was tested using simple t-tests. The results for H_{R3} are shown in Table five. As noted, significant differences exist for five of the seven variables, where, in each, the foreign brands are significantly greater than the domestic brands. Therefore, support is offered for H_{R3}. The results were mostly as expected, especially regarding foreign brands.

DISCUSSION AND CONCLUSIONS

One can look to Gray and Mobey's (2005) study of European large and small companies where the large ones are, firstly, more competitive because they prepare their management to be competitive globally and, secondly, have a better strategic approach. As such, the larger brands outperform the domestic brands when venturing abroad into their markets. Take, for example, the Kuwait fast food sector, where foreign companies have relegated Hungry Bunny, Al Batrig, and Naif Chicken chains (domestic brands) to the peripheries, even though those domestic firms were the first in the market.

Table 5 DESCRIPTIVE STATISTICS AND T-TESTS: DOMESTIC VS. FOREIGN							
Variables	Group	N	Mean	<i>t</i>	d.f.	' <i>p</i> '	Finding
USERS	DOM	19	63.84	3.89	32.74	0.000	Int'l > Domestic
	INT	20	219.65				
PEN	DOM	19	0.138	4.24	33.49	0.000	Int'l > Domestic
	INT	20	0.429				
RET	DOM	19	0.618	3.19	37	0.003	Int'l > Domestic
	INT	20	0.746				
PREF	DOM	19	0.163	2.39	37	0.022	Int'l > Domestic
	INT	20	0.579				
SAT	DOM	19	6.38	1.56	37	0.126	none
	INT	20	6.74				
TIME	DOM	19	95.84	0.07	37	0.947	none
	INT	20	94.15				
MSHARE	DOM	19	0.008	2.11	37	0.042	Int'l > Domestic
	INT	20	0.043				

The purpose of this study was an exploratory investigation into the effects of brand size (VLEs versus SMEs) and brand origin (domestic versus foreign) on a variety of marketing-related performance measures in a Middle Eastern market. The outcomes or marketing performance indicators under study were number of customers, penetration into the market, retention of customers, preference of customers, satisfaction, and market share. Also included was timing of entry, as measured by months-in-the-market, an indicator of entry strategy. Both brand origin and brand size are related to the marketing performance measures in most of the seven items, suggestive of the relevance of firm size and country-of-origin to strategy and competition.

Regarding firm size, the results show that VLEs are better performers than SMEs on the number of customers, penetration into the market, retention of customers, preference of customers, satisfaction, and market share, but not time-in-market. Smaller firms did not outperform larger firms on any of the seven measures. This appears to support the idea that larger firms have competitive advantages over smaller firms, possibly due to better resources and management systems or even a better implementation of marketing thought.

Regarding brand origin, the results show that foreign firms are better than domestic firms on the number of customers, penetration into the market, retention of customers, preference of customers, and market share, but not customer satisfaction or time-in-market. Domestic brands did not outperform foreign brands on any of the seven measures. This appears to support the idea that international firms have competitive advantages over domestic firms, possibly due again to these better resources and management systems or even a better implementation of marketing. It may be that a popularity effect is relevant here, where the foreign brands are more well-known and possibly better perceived than the domestic brands.

Additionally, it was also shown that foreign firms are more likely to be VLEs, while domestic firms are more likely to be SMEs. Therefore, in this market, foreign firms are generally larger and exhibit similar advantages to those of the VLEs. As was noted, VLEs seem

to outperform SMEs, foreign firms outperform domestic firms, and foreign firms are more likely to be VLEs. To this we venture to add that these small domestic firms are more likely to be traditional coffee shops with a local flavor, while the larger foreign firms are likely to be modern franchised coffee shops. This raises the question as to how they differ.

For one thing, they differ in the function they serve, as well as the clientele. We suspect the domestic coffee shops are most likely frequented by the older generations of both genders who go there to pass the time in their traditional daily afternoon outings, to meet their friends, and generally to socialize. It is not a reach to suggest that the younger generations are more likely to frequent the newer-style, modern, mostly foreign cafes. These younger consumers are more affluent and more demanding than their parents at the same age, and have money to spend outside the home on coffee nearly every day if they so choose. In addition, with the population of Kuwait under the age of thirty now comprising approximately two-thirds of the entire population, the fact that the large younger generation prefers international franchises could partly explain why foreign brands are shown to outperform domestic brands.

Another point is that the product lines often differ between the mostly smaller domestic cafes and the larger international cafes. Domestic brand coffee shops serve mostly a limited number of hot drinks, while foreign brands have a broader product line. This larger assortment offering by internationals may include desserts, foodstuffs, candy, and pastry across the board, too. The availability of internet services, as well as places to gather for studying or meetings, are most often available at foreign coffee shops, but rarely at local ones. In addition, the lower prices often offered in domestic coffee shops may actually be a disadvantage given the image conscious Kuwaiti consumer.

It is also possible that foreign firms are more likely to be VLEs because the internationalization process itself is a stage in the growth of firms; a stage not yet reached by the smaller domestic firms. As the domestic brands have not yet grown to the point of saturating the domestic market, there is still time before (and if) the domestic coffee shops will look outside the Kuwait borders for more geographical markets and growth. Whereas, the foreign firms have already passed that stage.

In summary, the statistical tests revealed some general pieces of information. First, VLEs are more likely to be foreign firms rather than domestic firms in the coffee shop business. It seems likely that the route to VLE-status is that an already large international brand sees an opportunity and enters later, since no first-mover differences appear between VLEs and SMEs. The idea that first-mover domestic firms continually innovate and focus on customers to grow into VLEs does not appear to hold in this sector.

Second, VLEs exhibit greater marketing performance than SMEs in nearly all marketing performance items. SMEs appear to have few to no advantages in marketing performance over VLEs. Larger firms may use their competitive advantages and greater resources to take actions to develop and manage customer relationships in ways that smaller firms cannot. Larger firms seem to penetrate the market better. Better penetration is then met with higher satisfaction, which combines with marketing tactics to result in greater customer retention. Better retention then leads to a larger customer base that has higher preferences and loyalties than do the

customers of smaller firms. In the end, these advantages and actions lead to better performance in the area of market share.

Third, foreign firms appear to have nearly as large an advantage over domestic firms on the marketing performance indicators as do VLEs over SMEs. Specifically, the number of users, penetration rates, retention rates, preferences, and market share are greater for foreign firms. Greater brand preference in international-brand customers may be due to investment in brand image over a longer brand life. International brand images spill into even far away markets nowadays due to the prevalence of the internet and international television and global radio stations, all of which carry advertising and publicity related to companies around the globe. Market share advantages of foreign brands may be due to a popularity effect, where potential customers in social consumption situations for products or services are likely to buy a famous or well-known brand to reduce any perceived social or economic risk.

Regarding the time/months in the market outcome, the assumption that successful domestic brands would have entered the market prior to foreign brands was not found to be true. It may be in the case of Kuwait that, rather than see domestic firms develop and grow a market and then the global firms enter and take advantage of the opportunities, both domestic and foreign firms saw the opportunities and entered as they saw fit. The same might be assumed with smaller and larger firms.

Also, the assumption that domestic companies may have better local market knowledge and be able to offer more-tailored products and services does not appear to hold in this sector of the market. No differences were found between domestic and foreign brands, suggesting domestic firms have no advantages in this area. Additionally, large firms exhibited higher satisfaction levels and, even though no differences on satisfaction were evident between domestic and foreign firms, since most large firms were foreign, one can only assume that there is some competitive advantage for large international firms leading to better customer satisfaction. Better design or popularity may be possible explanations.

Although the study provides interesting detail on the characteristics of the Kuwait retail market environment, there are several limitations on the findings of this study. First, coffee shops are only a single service category in retailing. Investigations into other categories, both in services and products, would greatly improve the confidence in our findings. Second, the study is limited to a relatively small number of firms. Industries with a larger number of competitors should be studied. Third, external validity is limited by focusing only on Kuwait, albeit an important geographical market in this region. Future studies should include other countries in this region and other countries and regions in general. Finally, the absence of any domestic VLEs has eliminated the possibility of studying interactions between firm size and country-of-origin.

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THE INCONGRUENT INFLUENCE OF CONTEXTUAL FACTORS ON THE RELATIONSHIP BETWEEN EMPOWERING LEADERSHIP AND EMPLOYEE CREATIVITY

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ABSTRACT

In today's competitive environment, businesses must rely on innovative ideas to build their core competencies and gain a competitive advantage, or suffer great market share losses. It is for this reason that many studies have explored employee creativity and empowering leadership. Previous studies have focused on empowering leadership as a managerial behavior that fosters employee creativity. However, since such studies implicitly assumed that work environments are congruent with employee creativity, they overlooked contextual factors that are not necessarily ideal for employee creativity. This study theoretically examines how contextual factors, specifically those that potentially hinder employee creativity, affect the relationship between empowering leadership and creative process engagement, with the help of the interactionist perspective and the social information processing theory. Following the theoretical review, we provide a theoretical model that implies that beyond well-meaning empowering efforts by leaders, there are other factors, such as social effects and mismatches between management's messages and their behaviors, that impede employee creativity. This, in effect, implies that managers should not only look to empowering leadership as a sure way to improve employee creativity within the organization, but that they must also evaluate employee perceptions about the contextual factors toward the efforts of their supervisors.

INTRODUCTION

To accommodate rapidly changing markets, many firms now need to continually develop new products or services. In such a business climate, many firms regard employee creativity as one of the most critical managerial resources (Anderson, Potočník, & Zhou, 2014). Employee creativity refers to “the production of novel and useful ideas by an individual or small group of individuals working together” (Amabile, 1988, p.126). Therefore, the demand for employee creativity is no longer limited to businesses or workplaces that are typically innovation-intensive, such as product development departments or corporate planning offices; there is a growing need for management strategies that foster employee creativity in areas that did not require it before.

Reflecting these practical demands, employee creativity has also attracted attention among academic studies (Mumford, Hester, & Robledo, 2012). In particular, employee creativity has been portrayed as the first step to innovation (Amabile, 1988) and many studies have continuously explored mechanisms through which employee creativity is encouraged and factors that influence employee creativity (Anderson et al., 2014). For instance, some of these factors include individual personalities, job characteristics, and supervisory styles (Oldham & Cummings, 1996). Among them, the influence of leadership on employee creativity has been the

focus in recent years (Shalley & Gilson, 2004; Wu, McMullen, Neubert, & Yi, 2008; Zhou & Shalley, 2003). While prior studies have presented the impact of various leadership behaviors (Zhou & Pan, 2015), above all, empowering leadership (cf. Kirkman & Rosen, 1999; Li, Chiaburu, & Kirkman, 2014) has been underscored as a vital managerial behavior for encouraging employee creativity (Zhang & Bartol, 2010; Zhang & Zhou, 2014).

The concept of empowering leadership considers employee autonomy as one of the key aspects of leadership¹. Employees that are empowered in this manner are thought to be motivated to produce novel and useful ideas; thus, many efforts have been undertaken to comprehend the connection between empowering leadership and employee creativity in detail (Zhang & Bartol, 2010; Zhang & Zhou, 2014). More specifically, studies have been conducted to review processes that explain the relationship between the two, including the inherent intervening variables, as well as to examine the contextual factors (e.g., perceived organizational support; cf. Harris, Li, Boswell, Zhang, & Xie, 2014) that influence such processes (Woodman & Schoenfeldt, 1989; Woodman, Sawyer, & Griffin, 1993).

However, the studies mentioned above were based on one implicit assumption: that the workplace environment either already promotes employee creativity or has a culture of encouraging new ideas. This implicit assumption has resulted in research that discuss creativity management only in the context of creativity-friendly environments. Consequently, this underlying assumption has caused a lack of research (Zhou & Pan, 2015) that investigates the impact of implementing creativity management in workplaces where either idea generation has not been celebrated or employees hesitate to propose new ideas (cf. Staw, 1995). In other words, analysis based on that implicit assumption remains unable to adequately explain corporate efforts that adopt creativity management as a competitive strategy in the current business climate.

To address this issue, this research examines the relationship between empowering leadership and employee creativity in cases where the managers' intent to promote employee creativity among the subordinates is incongruent with the workplace environment, including the level of acceptance or understanding of employee creativity. More specifically, this study will employ the concepts of interactionist perspective (cf. Woodman & Schoenfeldt, 1989; Woodman et al., 1993) and social information processing theory (Salancik & Pfeffer, 1978) to examine the relationship between empowering leadership and employee creativity.

This research is structured as follows: In the first section, we review prior studies and describe this study's focus on creative process engagement to comprehend employee creativity. Then, we organize existing studies according to the relationship between empowering leadership and creative process engagement. Through this process, we point out the overlooked issue that contextual factors could potentially hinder employee creativity. In the next section, we discuss how these contextual factors affect the relationship between empowering leadership and psychological empowerment, as well as the relationship between psychological empowerment and creative process engagement. The last section describes the implications and limitations of this study and discusses future outlooks.

LITERATURE REVIEW

In creativity studies, employee creativity is defined as "the production of novel and useful ideas by an individual or small group of individuals working together" (Amabile, 1988, p.126) and is treated as one of the most critical factors for a company's survival (Anderson et al., 2014). Especially in recent years, creative process engagement (cf. Henker, Sonnentag, & Unger, 2015;

Zhang & Bartol, 2010), which has been gaining attention, comprises three behaviors, namely: problem identification, information searching and encoding, and idea generation. Existing studies focused on employee behaviors that are specifically relevant to the development of novel and useful ideas and examined the factors that foster such behaviors. In terms of managerial behavior, the research mainly involved identifying leadership styles that significantly contribute to promoting creative process engagement. Based on this, the following section will highlight empowering leadership as a managerial behavior that inspires employee creativity and closely examine its relationship with employee creativity.

The Influence Process of Empowering Leadership on Employee Creativity

This section describes the mechanism through which empowering leadership influences employee creativity. This study defines empowering leadership as “the process through which leaders share power with employees by providing additional responsibility and decision-making authority over work and resources, as well as the support needed to handle the additional responsibility effectively” (Martin, Liao, & Campbell, 2013, p. 1375). Since existing papers focus on an individual’s psychological state to analyze the mechanism behind the relationship between empowering leadership and employee creativity (Amabile, 1988; Zhang & Bartol, 2010), we will review an individual’s psychological process in relation to empowering leadership and employee creativity.

The study by Zhang and Bartol (2010) is one of the most seminal work that identified the process through which empowering leadership influences employee creativity, specifically highlighting individual motivation and creative process engagement². According to the authors’ model, employee motivation plays a key role in how empowering leadership influences employee creativity (Amabile, 1988; Anderson et al., 2014; Rosso, 2014; Shalley, Zhou, & Oldham, 2004). Thus, the next section will focus on employee motivation, to examine the relationship between empowering leadership and psychological empowerment.

Regarding empowerment by leaders, psychological empowerment (cf. Conger & Kanungo, 1988; Thomas & Velthouse, 1990) has been notably spotlighted among other motivations (Kirkman & Rosen, 1999; Li et al., 2014). Psychological empowerment is defined as “a process of enhancing feelings of self-efficacy among organizational members” (Conger & Kanungo, 1988, p. 474). In other words, psychological empowerment is a factor relevant to an individual’s cognitive motivation and is thought to have a strong connection to personal intrinsic motivation (Thomas & Velthouse, 1990).

Existing research on empowering leadership indicated that empowering leadership promotes the subordinates’ psychological empowerment (Chen, Sharma, Edinger, Shapiro, & Farh, 2011; Cheong, Spain, Yammarino, & Yun, 2016; Seibert, Wang, & Courtright, 2011). This is because empowering leadership encourages employees’ initiative in decision-making or delegation (Lorinkova, Pearsall, & Sims, 2013) while also enhancing job autonomy (Zhang & Bartol, 2010). As a result of boosted autonomy and self-determination, subordinates are enabled to engage in creative processes and demonstrate employee creativity (Amabile, 1988; Zhang & Bartol, 2010).

Based on the aforementioned mechanism presented by Zhang and Bartol (2010), existing studies that focused on personal motivation have refined the process through which empowering leadership affects employee creativity (Harris et al., 2014; Sharma & Kirkman, 2015). Several studies involved in this refinement indicated that not only personal factors but also contextual

factors affect the mechanism, and showed the need to incorporate contextual factors in research (Woodman & Schoenfeldt, 1989; Woodman et al., 1993; Zhou & Hoever, 2014). In other words, existing studies have examined how contextual factors interact with the processes through which employee creativity is influenced, as well as how they interact with empowering leadership, which is mediated by personal factors (i.e., motivation) as indicated by Zhang and Bartol (2010).

Still, these studies that examined the interaction between the contextual factors and empowering leadership's influence process on employee creativity were based on one implicit assumption: they presumed that contextual factors promoted employee creativity. In other words, the existing studies tended to illustrate the contextual factors as situations congruent with employee creativity. However, it has been pointed out by studies on employee creativity that contextual factors sometimes have a hindering effect, alongside an enhancing effect (e.g., Baer & Oldham, 2006; Gilson, Mathieu, Shalley, & Ruddy, 2005; Roskes, 2015; Rosso, 2014; Sagiv, Arieli, Goldenberg, & Goldschmidt, 2010; Zhang & Zhou, 2014).

Since contextual factors may either enhance or hinder employee creativity, it is essential to discuss the influence process in cases where contextual factors impede employee creativity (cf. Staw, 1995) and examine the relationship between empowering leadership and employee creativity (Zhou & Pan, 2015). This study employs the concepts of interactionist perspective (cf. Woodman & Schoenfeldt, 1989; Woodman et al., 1993) and social information processing theory (Salancik & Pfeffer, 1978) to discuss the influence process exerted by contextual factors. Then, this study examines how these contextual factors may interact with the influence process of empowering leadership and employee creativity.

The Contextual Influences: Interactionist Perspective and Social Information Processing Theory

This section employs the interactionist perspective and the social information processing theory to explore the contextual influences on the relationship between empowering leadership and employee creativity. These theories are similar in the way that they examine how the context influences an individual; still, they differ in the scope of the contextual influences in question. Thus, we will first review the claims of both theories and then explore the possible effects that context may have on the process of influencing employee creativity.

The interactionist perspective views employee creativity as a product of complex interactions between contextual factors (e.g., perceived organizational support; cf. Harris et al., 2014) and personal factors such as cognitive style (Woodman & Schoenfeldt, 1989; Woodman et al., 1993). More specifically, the interactionist perspective does not regard employee creativity as solely characterized by either personal ability, leadership, organizational culture, or other individual factors. Instead, it considers the interaction between said factors as prompting the individual to demonstrate employee creativity. With the rise of the interactionist perspective, which emphasizes the interaction between personal and contextual factors, it has become possible to adopt a more integrated approach to analyze the effects of both factors (Woodman & Schoenfeldt, 1989).

Some existing studies discussed ways to promote employee creativity (e.g., Oldham & Cummings, 1996; Harris et al., 2014) and team creativity (e.g., Somech & Drach-Zahavy, 2013) based on the interactionist perspective. Those studies are similar in the way that they assume that contextual factors promote employee creativity, thus basing their interactionist perspective

application only on specific aspects of interaction. However, as mentioned above, contextual factors do not always work in favor of employee creativity (cf. Rosso, 2014).

In contrast, this study highlights the social information processing theory to illustrate how contextual factors can be counterproductive for employee creativity. Before doing so, we will clarify the differences between the social information processing theory and the interactionist perspective. While the two share a common focus on the relationship between employee creativity and the contextual factors, the context that they presume is not the same. The context assumed in the interactionist perspective includes interactions among factors such as personal traits, relationships with managers, and organizational culture; the perspective is characterized by its focus on the interaction itself. On the other hand, the context of the social information processing theory is not made of interactions between factors but is rather socially constructed based on an individual's relationships with others. In consideration of these differences, the following part will further discuss the social information processing theory.

The social information processing theory introduced by Salancik and Pfeffer (1978) is a concept based on the premise that social effects exist in an individual's perception of reality within an organization (Pfeffer, 1981). According to Pfeffer (1981), social effects are defined as "the processes by which individual attitudes and perceptions are impacted by others in the environment" (p. 9). In other words, the reality which an individual perceives within an organization is influenced by others and is socially constructed.

Based on the concepts above, Salancik and Pfeffer (1978; also see Salancik & Pfeffer, 1977) argue that the dimensions of jobs and perception of content are also impacted by social effects, namely the influence of others. More specifically, Pfeffer (1981) notes the four kinds of such influences (also see Thomas & Griffin, 1983):

First, the individual's social environment may provide cues as to which dimensions might be used to characterize the work environment...Second, the social environment may provide information concerning how the individual should weight the various dimensions...Third, the social context provides cues concerning how others have come to evaluate the work environment on each of the selected dimensions...And fourth, it is possible that the social context provides direct evaluation of the work setting along positive or negative dimensions, leaving it to the individual to construct a rational to make sense of the generally shared affective reaction. (p. 10)

Those four social effects suggest that an individual's psychological mechanism cannot be fully detached from their social environment and that it is closely intertwined with social cues (Salancik & Pfeffer, 1978). As examples of social cues, Salancik and Pfeffer (1978) mentioned social norms or expectations, actions, jobs, and task environments. Social cues, such as social norms or expectations, are thought to influence an individual's attitude and needs. However, the significance here is that such influence as a determinant of job attitudes may include "... the individuals' past behaviors and how these behaviors come to be attributed to the environment" (Salancik & Pfeffer, 1978, p. 230). In other words, an individual's perception of reality within an organization (i.e., work environment) is subject to social effects, and an individual's perception could be affected by not only the current situation but also their past behaviors or environments.

The discussion above suggests that there could be cases where behaviors or environments from the past are incongruent with those of the present. For example, Staw (1995) remarked that

“most people do not follow a life pattern similar to that of the creative” (p. 163) and pointed out that organizations often do not welcome creativity or innovation. What Staw (1995) and Slancik and Pfeffer (1978) suggest is that when originally uncreative firms try to be creative, employees remain hesitant to be creative, or worse, they may even reject the organizations’ efforts.

These examples imply two things: First, as inherent in the social information processing theory, social effects could impact employee attitudes (Zhou & Pan, 2015); Second, in regard to employee creativity, social cues (e.g., group norms) and other social cues in a firm (i.e., a focal organization) do not always promote employee creativity. This relates to the fact that in some cases, social cues may negatively affect individuals, even those who try to be creative (Staw, 1995).

So far, we have overviewed the arguments of the two theories: the interactionist perspective and social information processing theory. These theories argue that, in addition to personal factors, employee creativity may be affected by contextual factors, as well as the interactions between the two. Hence, this study will build on both an interactionist perspective and social information processing theory to explore how the contextual factors, which could potentially impede employee creativity, may affect the relationship between empowering leadership and employee creativity.

DISCUSSION

In this section, we examine how contextual factors, as discussed in the previous section, could influence the relationship between empowering leadership and employee creativity. We first discuss how contextual factors that hinder employee creativity affect the relationship between empowering leadership and psychological empowerment. Then, we will argue how those contextual factors could impact the relationship between psychological empowerment and creative process engagement. Following these discussions, we will examine the processes by which contextual factors influence the relationship between empowering leadership and employee creativity, with examples of factors that discourage employee creativity.

The Impact of Contextual Factors on the Relationship Between Empowering Leadership and Psychological Empowerment

First, we review the influence that empowering leadership has on employee creativity. Studies have shown that managers’ empowering leadership practices encourage creative process engagement through subordinates’ psychological empowerment (Zhang & Bartol, 2010; Zhang & Zhou, 2014). This is because empowering leadership focuses on the employees’ initiative in decision-making, and subordinates are thus empowered with higher senses of self-determination and competence, and driven to engage more in creative behaviors such as idea generation.

The question now arises: How do contextual factors affect the mechanisms through which leadership promotes employee creativity? To examine the question, we begin by focusing on and theoretically examining the impact of the relationship between empowering leadership and psychological empowerment. We will then discuss how contextual factors could influence the process between employees’ motivational state (i.e., psychological empowerment) and their creativity.

As discussed above, previous studies implicitly assumed contextual factors that promote employee creativity; such factors can be exemplified by organizational cultures that expect

members to be creative or management practices that enhance subordinates' intrinsic motivation. However, in real-world operations, there are organizational cultures that allow little self-determination or employ monetary rewards to motivate extrinsically, and such contextual factors that hinder employee creativity could also coexist. Furthermore, the transformation of such management practices is not instantly achievable, but instead, takes time (Salancik & Pfeffer, 1978). Negative factors that discourage employee creativity and the impact that such factors have over time, could impede the leadership mechanism. To clarify this, we employ the two perspectives mentioned in the previous section (interactionist perspective and social information processing theory) to discuss how the contextual factors that hinder employee creativity could affect the relationship between empowering leadership and psychological empowerment.

What the interactionist perspective suggests is that managers' empowering leadership practices do not always promote subordinates' creative process engagement through psychological empowerment. According to the interactionist perspective, employee creativity is not solely influenced by leadership, but rather is impacted by the interaction between various factors. In other words, it is essential to include interaction with contextual factors in our theoretical scope in order to accurately comprehend the effect empowering leadership has on psychological empowerment. To address this, the study will focus on contextual factors that impede employee creativity, to examine the impacts that emerged from the interactions.

Now, how do contextual factors that hinder employee creativity affect managers' leadership? According to the social information processing theory, the reality perceived by the subordinate is socially constructed under the influence of others (Salancik & Pfeffer, 1978). While managers are one of the significant factors in the formation of reality perception, peers similarly have an impact on the formation of social realities that cannot be ignored (Porter, Lawler, & Hackman, 1975). Thus, the managers' empowering leadership may not always be received as intended; instead, the subordinate may not even recognize the managers' empowering leadership as something that encourages their initiative. For instance, Zhou and Pan (2015) argue that subordinates use managers' behaviors as cues to decode what type of behaviors are expected from them. This indicates that superficial empowerment, in which words and actions are inconsistent, may not change subordinates' behaviors, as they do not see it as a cue for the intended behaviors.

In addition, the misalignment between the managers' behaviors (i.e., empowering leadership behaviors) and group norms should not be overlooked. More specifically, when managers' behaviors transform from something of a very different nature (e.g., directive leadership style) into a style more oriented to the subordinates' initiatives (i.e., empowering leadership style), the managers' behaviors may not be able to change the subordinates' norms, and will likely be affected by the negative effects of the group norms established before. Even in workplaces where employee creativity is encouraged, it is difficult for the empowering leadership to have sufficient impact on the subordinates if the manager is not influential enough (Hollander, 1958). The reason for this is that if the manager lacks influential power, the subordinates will not be empowered by the manager, even if the manager shares authority or support with them. In this sense, if empowerment has not been commonplace in the workplace, superficially altering the management approach in an attempt to encourage employee creativity will not work; this approach will not be able to successfully change conventional behavioral norms and be free of influence from the negative effects (i.e., hampering employee creativity) exerted by the preceding traditional management practices.

As seen above, this section took the premises of interactionist perspective and social information processing theory to examine how contextual factors that impede employee creativity could affect the relationship between empowering leadership and psychological empowerment. As a result, it has been indicated that empowering leadership does not solely impact psychological empowerment (i.e., the interactionist perspective) and its influence may vary due to contextual factors that hinder employee creativity (i.e., social information processing theory).

The Impact Contextual Factors Have on the Influence Processes of Psychological Empowerment and Creative Process Engagement

Continuing from the last section, we now examine the influences that contextual factors have on the relationship between psychological empowerment and creative process engagement. Prior studies have highlighted intrinsic motivation as a key concept to encouraging employee creativity, and have continuously indicated its significance (Amabile, 1988; Oldham & Cummings, 1996). In fact, studies on empowering leadership have long stated that psychological empowerment promotes creative process engagement. However, as has been discussed, since such prior works implicitly assumed that the relevant contextual factors were all creativity-affirming, this section discusses how the contextual factors impeditive to employee creativity could affect the relationship between psychological empowerment and creative process engagement, using the interactionist perspective and social information processing theories.

The interactionist perspective argues that subordinates' engagement in the creative process is not solely induced by their motivation, but is rather driven by the interaction between various contextual factors. This indicates that even boosted psychological empowerment may not directly result in the subordinates' engagement in the creative process. Therefore, depending on the context, even if the subordinate's intrinsic motivation (i.e., psychological empowerment) is enhanced by management's empowering leadership, it may still not induce creative behaviors.

How, then, do the contextual factors that hinder employee creativity affect psychological empowerment and employee creativity? According to the social information processing theory, the context the subordinates are situated in provides cues regarding appropriate behaviors that are expected of them. It can thus be expected that, even in a situation where employees are intrinsically motivated, they are likely to avoid demonstrating employee creativity if the context sends messages, in the form of social cues, that creative behaviors are not welcomed.

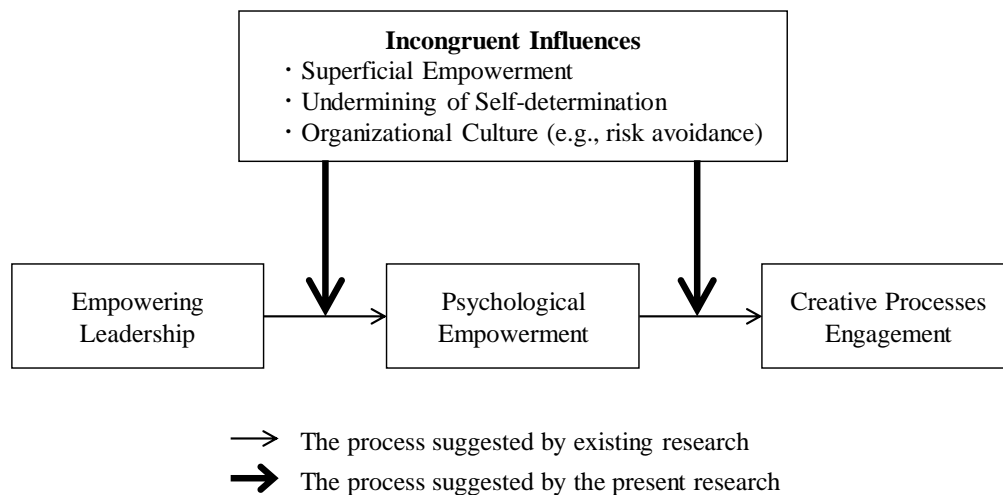
For instance, if an organizational culture does not necessarily promote new challenges, or its reward system does not acknowledge risk-taking actions, the subordinates' autonomy will shrink, and intrinsic motivation will be weakened (Deci, 1975; Gagné & Deci, 2005). In addition, it has been indicated that if a corporate culture does not support employee creativity, the impact of intrinsic motivation itself declines (Gagné & Deci, 2005). Furthermore, studies have shown that in cases where the subordinates' tasks were not interesting or challenging, their intrinsic motivation would not be as influential as anticipated, even if the managers encouraged subordinates' initiatives (Mossholder, 1980; Oldham & Cummings, 1996). In other words, these existing studies implied that if contextual factors that impede employee creativity are in place, creative process engagement may still decrease, even with enhanced psychological empowerment. The significance here is that such contextual factors have an undermining effect on intrinsic motivation, which plays a vital role in creative process engagement (Deci, 1975, 1980).

As seen above, this section examined how the contextual factors that hinder employee creativity could affect the relationship between psychological empowerment and creative process engagement. As a result, we have indicated that psychological empowerment is not the sole factor in creative process engagement (i.e., the interactionist perspective) and that its influence may vary due to creativity-impeding contextual factors (i.e., social information processing theory).

Proposed Theoretical Framework

Figure 1 shows a thematic framework that conceptually illustrates the points made in this section thus far. The conceptual factors listed in Figure 1 are factors that could weaken the impact of empowering leadership and psychological empowerment (i.e., intrinsic motivation) grounded in concepts from the interactionist perspective and social information processing theory. However, this does not mean that the creativity-impeding contextual factors listed in Figure 1 are exhaustive. Needless to say, factors not covered in this study may also exert a negative impact on the influence process. For this reason, the contextual factors listed in Figure 1 are limited to those we anticipated based on this study's foundational concepts, the interactionist perspective, and the social information processing theories.

Figure 1 Thematic Framework about Incongruent Influences



A significant implication of Figure 1 is that there are some cases where contextual factors are incongruent with the influence process of empowering leadership, in contrast to the conditions assumed by existing studies. Existing studies have repeatedly examined contextual factors (e.g., psychological climate; cf. Zhou & Pan, 2015), which are congruent with the subordinates' creative process engagement. However, in a real-life organization, there are cases where the influence of contextual factors is incongruent, and empowering leadership does not always enhance the employee's engagement in the creative process as anticipated. To address this, this study examined contextual factors that could be incongruent, and the impact they exert as a result of incongruency.

IMPLICATIONS AND LIMITATIONS

This study theoretically examined how contextual factors could affect the relationship between empowering leadership and employee creativity. More specifically, we critically reviewed existing studies that implicitly assumed contextual factors that have a positive influence on employee creativity. Conversely, this study indicated that negative contextual factors also exist in real-life management practices. The study employed two perspectives: the interactionist perspective and the social information processing theory to identify how contextual factors impeditive to employee creativity could exert negative effects on 1. the influence which the empowering leadership has on psychological empowerment, and 2. the influence which the psychological empowerment has on creative process engagement.

Furthermore, this study identified the need for further study of managers' influence (i.e., leadership) over creative behaviors. Existing studies in the area of empowering leadership concluded that empowering leadership enhances psychological empowerment and thus promotes subordinates' creative behaviors. However, as indicated in this study, subordinates' creative behaviors are not solely determined by managers' behaviors. For this reason, the leaders' impact on employee creativity should be reviewed in light of both parties' contextual factors. This suggestion is also applicable to creativity studies. For instance, existing studies have positioned intrinsic motivation as a key factor in encouraging employee creativity. However, the implications of this study show that contextual factors may weaken the relationship between intrinsic motivation (e.g., psychological empowerment) and employee creativity (e.g., creative process engagement). Thus, the psychological factors on employee creativity should also be revisited, considering their interaction with contextual factors.

In addition to the theoretical implications mentioned above, two limitations of this study can be noted: first, the creativity examined in this study is limited to an individual level. Recent studies have shown that creativity may arise not only at an individual level but also at a team or organizational level (Anderson et al., 2014; Leonard & Swap, 1999). However, the scope of this study is limited to the creative behaviors of an individual. Thus, future research should analyze the impact of contextual factors on the creativity of a team or an organization. Another limitation is that only empowering leadership was highlighted in the discussion about the types of leadership that affect employee creativity. This study focused on empowering leadership as a leadership style that impacts employees' creative process engagement. However, it has been indicated by existing studies that transformational leadership and other leadership styles could also influence employee creativity (Zhou & Pan, 2015). Therefore, other leadership styles and their relationship with contextual factors should be discussed in future research.

ENDNOTES

- 1 Some studies position empowering leadership as one of the leadership styles that contribute to employee development (e.g., Amundsen & Martinsen, 2014; Pearce & Sims, 2002). For the sake of a clearer discussion, this study presumed empowering leadership to be a leadership style based on a micro approach (cf. Lorinkova, Pearsall, & Sims, 2013).
- 2 In discussions about the process of influencing creativity, some moderating factors (e.g., employee empowerment, role identity, leader's encouragement on creativity) have also been pointed out.

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MANUFACTURING COMPLEXITY – HOW EXTERNAL COMPLEXITY INFLUENCES THE EFFECTS OF INTERNAL COMPLEXITY

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ABSTRACT

This effort extends our previous research into the elements of the design of manufacturing systems and seeks to separate the effects for the internal elements (those due to system design) from the basic elements of external complexity – order variation (frequency and size). Simulation experiments were conducted that included two levels of the external complexity to determine the significance and effect of ten elements of complexity resulting from managerial decisions relative to the design of the manufacturing system. The results show that the external complexity elements dominate the cause of system unpredictability. We also confirm the findings from our previous research while discovering the difference in effects of the internal complexity factors based upon the amount of variation in the order arrival rate.

INTRODUCTION

Even small production systems are complicated necessitating active management to ensure achieving quality and delivery promises that satisfy customers while ensuring profitability. How a firm designs its manufacturing system is based upon its understanding of market demand and the firm's competitive strategy. There are many aspects of a system's design that must be established prior to starting production. Additionally, a system's design may need to change over time. These design decisions will likely affect the "complicatedness" of the production system, which, in turn, affects the performance of the system and the firm.

Complexity is a notion synonymous with something being complicated. It can be a result of the number of things (Lofgren, 1977; Klir, 1985; Flood 1987), e.g. machines and products. It could also be the number and types of relationships between items in the system (Pippenger, 1978; Simon, 1962). We recognize manufacturing systems are complex by these notions. The general effect of complexity is unpredictability (Casti, 1979). For manufacturing systems, this might be seen, for example, in the inaccuracy of promised dates. The variety of products in the system, which changes from one period to another, and the different product flows for these products, are part of the complexity that leads to unpredictability. Management often employs time-tested interventions like forecasting, holding inventories, or overstating lead times to hedge against this unpredictability.

Hence, an understanding of how the choices made in the key elements of a system's design affects complexity is relevant. It is important for managers to recognize the lasting impact their decisions can have on performance so they can make the best decisions about the design as well as incorporate other management actions needed to achieve the desired performance that satisfies their customers. The results of this study will have practical and theoretical value. We

hope to elucidate the magnitude of the key structural decisions in the design and management of a manufacturing system. By understanding these determinants of complexity, managers can better design systems and make critical operational decisions. Theoretically, the results may point to factors that are consequential to incorporate in the burgeoning study of supply chain management.

In this research, we examine the effects of several elements of a manufacturing system's design in the context of two forms of external complexity. We do this using a simulation of a batch manufacturing system. Following is a brief theoretical background followed by a description of the simulation design, the statistical analysis, and concluding with a discussion of the results.

BACKGROUND

In our previous research, eight different elements of internal complexity related to the design of a manufacturing system were studied. These elements, listed in Table 1, were identified from research literature as developed in Gabriel (2013). Generally, past research identifies these complexity attributes individually, but little has been done to study their effect on performance with more than one at a time. Recent examples include Park and Kremer (2015) who studied the complexity caused by product variants, Wan et al. (2012) researching the impact of the product variety, and Smunt and Ghose (2016) who evaluated the effects routing commonality.

We again study the effects of the eight elements that we previously tested and include two additional internal manufacturing complexity items – unit run-time differences and set-up time (see Tables 1 & 2). We do this, in part, because, in our previous effort, the effect of the number of work centers in a system was significant, but appeared to function the reverse of what was anticipated. It was hypothesized that a batch manufacturing system with more work would have a greater amount of routings to be managed, making the system more susceptible to having greater variation in flow time, thus greater variation in order lateness and tardiness. This unpredictability would be considered the negative effect of the added complexity due to having to manage the additional work centers and the greater variety of routings through the system. We fathom that the reversed effect could be due to other factors including the extent of the difference in run times among the various items produced in the system as well as how significant the amount of set-up time is compared to the unit run time. We, therefore, add two additional system factors – set-up time and the differences in part-processing times.

In practice, set-up time has received the particular focus of those espousing Just-in-Time and lean manufacturing principles. As a recent example, Phan and Matsui (2010) found correlation between set-up time reduction and performance factors like on-time delivery, manufacturing cost and flexibility, depending on the national context. Set-up time has also been a variable commonly included when studying manufacturing systems because it consumes capacity and occurs intermittently thereby disrupting process flow. Two recent examples are Djassemi (2005) and Garavelli (2001). In his study of cellular manufacturing, Djassemi (2005) recognized the potential impact of set-up times by using three levels of set-up times depending on product similarity. Garavelli (2001), in his study simulating a batch production system, incorporated a ratio-based set-up time (0 or 30% of processing time). He found that the benefits

from system flexibility are significantly different depending on the length of set-up times. Systems with high set-up times benefitted less from having additional flexibility. Since we see that the size of the set-up time is a relevant factor that can affect system performance, we incorporate set-up time ratio in this study to further our investigation into the results found in our previous study. The Set-up Time Ratio (STR), similar to Garavelli (2001), is the amount of set-up time for a batch of a manufactured item as a ratio to the unit run time for that item. We do this because it may be possible that the predictability of flows is different when set-up time is large relative to unit run time than when set-up time is short relative to the unit run time. This may also contribute to the unexpected effect on the number of work centers shown in our prior study.

Table 1
Elements of Internal Manufacturing Complexity with Definitions

Internal Complexity Element	Definition
Product Mix	The number of end-products produced in a manufacturing system.
Product Mix Ratio	The proportion of production volume attributed to the largest volume end-product.
Product Structure Depth	The number of levels in a product structure for an end-product.
Product Structure Breadth	The maximum number of manufactured items at a single level in an end-product's product structure.
Component Commonality	A measure of the shared use of components.
Number of Routing Steps	Number of distinct manufacturing operations that items require based upon their manufacturing routing.
Number of Work Centers	The number of work centers in a manufacturing system.
Routing Commonality	A measure of the degree of similarity of routing sequences among manufactured items in a system.
Run Time Difference	The difference in per unit run time between one manufactured item to a different manufactured item. This simply means that one item will consume more work center capacity than a different item.
Set-up Time Ratio	The amount of set-up time for a batch of a manufactured item as a ratio to the unit run time for that item.

The second internal complexity factor that has been added to this study is the variation in part-processing times between the different items processed in the system. Jarrahi and Abdul-Kader (2015) found that differences in processing times among products as a key contributor of variability in a production system when modeling a production line. Likewise, when developing

formulae to estimate production throughput on production lines, Dhouib et al. (2008) also incorporate processing time differences among products because they have been shown to cause starving and blocking in such systems thereby affecting throughput rate. Similarly, we have included Run Time Difference (RTD) - the difference in per unit run time between one manufactured item and a different manufactured item. In conjunction with the reasoning of Jarrahi and Abdul-Kader (2015) and Dhouib et al. (2008), we conjecture that when run times are similar, then the flow of goods may be less complex, that is, more predictable, because flow times may be more similar. Because we did not control for this in our previous study, these differences in run times may have added noise to the effect of the number of work centers, thus confounding the effects.

Table 2
Elements of Internal Manufacturing Complexity with References

Internal Complexity Element	Literature Source
Product Mix	Park & Kremer (2015), Wan et al. (2012), Huang & Inman (2010), Bozarth, Warsing, Flynn & Flynn (2009)
Product Mix Ratio	Kotha and Orne (1989)
Product Structure Depth	Orfi, Terpenney, & Sahin-Sariisik (2011), Fry, Oliff, Minor, & Leong (1989), Benton, W. C. and R. Srivastava (1985, 1993);
Product Structure Breadth	Orfi, Terpenney, & Sahin-Sariisik (2011), Fry, Oliff, Minor, & Leong (1989), Benton, W. C. and R. Srivastava (1985, 1993);
Component Commonality	Huang & Inman (2010), Song & Zhao (2009), Wacker & Miller (2000), Vakharia, Pamenter, & Sanchez (1996)
Number of Routing Steps	Deshmukh, Talavage and Barash (1998)
Number of Work Centers	Deshmukh, Talavage & Barash (1998), Calinescu et al. (1998), Frizelle & Woodcock (1995)
Routing Commonality	Smunt & Ghose (2016), Orfi, Terpenney, & Sahin-Sariisik (2011), Monahan & Smunt (1999), Bozarth & Edwards (1997)
Run Time Difference	Jarrahi and Abdul-Kader (2015), Dhouib, Gharbi & Ayed (2008)
Set-up Time Ratio	Phan and Matsui (2010), Djassemi (2005), Garavelli (2001)

Additionally, we introduce two forms of external complexity associated with the variation related to customer ordering – order arrival rate variation and order size variation.

These are included in this study to explore how they might influence the effects that the elements of internal complexity have on production system performance. The variation in order arrival rate and the variation in order size is considered external complexity because is not under the direct control of the management of a manufacturing operation, but these may change how the system design elements affect system performance. In recent literature, we see the relevance of arrival rate variation. Disney et al. (2006), as they study their proposed inventory ordering policy, recognize that reducing the order variability will enable a supplier to be able to offer shorter lead-times. This is because the factory can better plan the utilization of its resources from period to period. Balakrishnan et al. (2004) develop and test supply chain policies predicated on the deleterious effect that customer order variability has on supplier costs where they suppose that buffer capacity is required to avoid extended lead times or substantial safety stock holding costs. When studying the productivity of manufacturing systems, van Ooijen (2003) recognizes that changes in the order arrival rate generally lead to a change in throughput where increased arrival rates equate to increased throughput. In their study of the impact of order decisions in a two-echelon supply chain, Boute et al. (2007) concluded that a smooth order pattern leads to shorter and less variable lead times.

The variation in order size is not only a reality that manufacturers encounter, but, logically, will also affect system performance by changing the capacity demanded to fill the orders. System capacity is inflexible in the short-term, so when a series of higher than average orders arrive, throughput will be reduced as utilization of capacity approaches or exceeds its design capacity. We recognize that supply chain interactions with consumer demand can lead to substantial variation in customer-to-supplier order sizes, as demonstrated in the bullwhip effect. Therefore, it was logical to also include this factor in our study.

METHODOLOGY

A simulation of the same generic batch-type manufacturing operations as in our prior research was used to obtain a sample of data on system performance when the experimental factors were altered. It was believed that batch shops would be more likely to experience a wider range of the complexity elements that were being investigated.

In this situation, there were 12 experimental factors. Since our goals were to determine if the internal manufacturing complexity elements have an effect when the two external complexity factors changed, we used only two levels for all factors. Even by limiting the design to two levels for each factor, this would have required 4096 experiments to have a full factorial analysis. Since this was not practical to conduct, a fractional factorial experiment was undertaken. The result was a design requiring 256 experiments. Each experiment was replicated 15 times using the batch means method to obtain independent samples (Schmeiser, 1982; Pritsker, 1986).

To measure systems performance, the same five measures were used as in the previous effort (see Gabriel, 2013). These were the means of lateness and tardiness and the standard deviations of flow time, lateness and tardiness. Using mean lateness and tardiness captures a firm's concerns about completing orders too early or late (lateness), and the customer's desire

not to have late orders (tardiness). The measures involving standard deviation cope with the general notion that complexity causes unpredictability (Casti, 1979).

Table 3 summarizes the levels used for each experimental factor. The same settings were used for those complexity elements included from the previous research. Products, manufactured items, and their associated product structures and routings were generated to achieve the system experimental parameters. Refer to Gabriel (2013) for details. Figure 1 presents three product structures as examples of the setting for product structure breadth and depth.

In the case of run time difference (RTD), a uniform distribution with the mean unit run time of 0.20 hours was used. For the “low” complexity, the distribution had endpoints of 0.15 and 0.25 hours. For the “high” complexity situations, the endpoints were 0.05 and 0.35 hours. The set-up time ratio (STR) for the “low” complexity cases was set to 0.40 hours, being only twice the average per unit run time. The STR high complexity setting was to be 10 time the average unit run time, resulting in a 2 hour set-up time.

As for the external complexity factors, the customer orders arrival rate variation was set at two substantially different coefficients of variation, 0.10 and 1.00. The prior study used the exponential distribution, but this may have induced large variation that inhibited the analysis from detecting variation caused by the experimental factors. In this study, the arrival rate was based on a truncated normal distribution (truncated to prohibit negative times). Since the arrival rate for each experiment needed to be set “fairly”, the mean arrival rate was set for each experiment such that, after conducting pre-trial runs, each had a bottleneck work center with an average utilization of 95%.

Order size variation was set such that there was no variation at the “low” complexity setting. In these runs, the order size was always 200 units. For the “high” setting, the target for the mean order size was 200 with a standard deviation of 35 using a truncated normal distribution (where 0 would be the minimum). Then, the order quantity for each product varied based on the number of products (P) and the product mix ratio (PMR) to achieve a coefficient of variation of 0.175 (35/200) for the entire order.

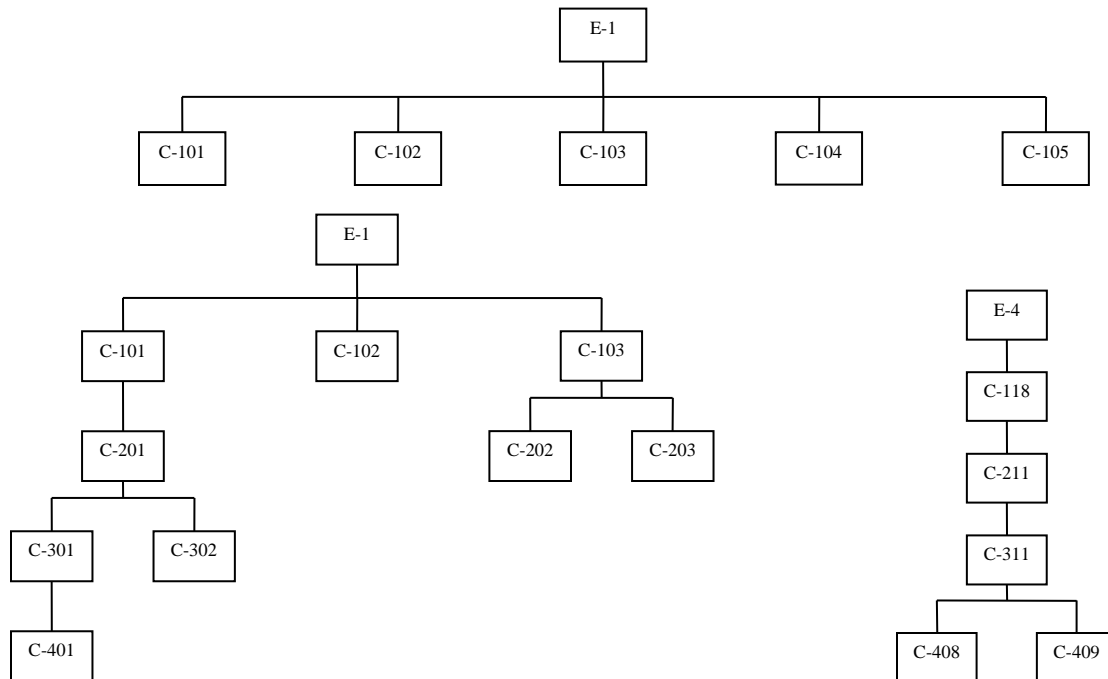
Table 3
Experimental Levels for the Complexity Factors

Complexity Factor	Levels	
	High Setting	Low Setting
Products – (P)	5	2
Product Mix Ratio (PMR)	All equal	1 Dominant/Others equal
Product Structure Depth (D)	5	2
Product Structure Breadth (B)	5	2
Component Commonality (CC)	0 %	~30 %
Number of Routing Steps (RS)	10	4
Number of Work Centers (WC)	10	4
Routing Commonality (RC)	0 %	~50 %
Run-time Difference (RTD)	Max. = 0.2 hrs/unit	Max. = 0.1 hrs/unit
Set-up Time Ratio (STR)	10:1	2:1
Order Arrival Rate Variation (ARV)	cv = 1.0	cv = 0.10
Order Size Variation (OSV)	cv = 0.175	None – Constant Order Size

One non-experimental factor that could influence system performance was the due date tightness factor, because it will affect the amount of lateness and tardiness produced by a system. Due dates were set using TWKCP, total work content for the critical path, which incorporates a due date tightness factor, k . TWKCP is the sum of all the operation times in the longest chain of the product structure. The due date tightness factor, k , was established in trial runs for the manufacturing system in the experiment that was deemed to be the “simplest”. The value for k was set such that, after the warm-up period, approximately 30% of the orders were tardy.

For each experimental system to be compared fairly, each end-product was assigned a specific random number stream to be used in all experimental runs. This would maintain the identical order sequence and quantity for each end-product for experiments having the same settings of P and PMR.

Figure 1 Examples of the Simulated Product Structures



The total work content (TWK) method (Goodwin and Goodwin, 1982) was employed to calculate the release dates when each order arrived in the simulation. The order release for the lowest level component on the critical path of a product structure occurred immediately as the order arrived. Parent items in the product structure were released at the time that the last order for the required children items was completed. This gave the manufacturing orders for parent items an opportunity to be released early or late, thus providing clearer evidence of the impact of system complexity on performance.

The earliest order due date (EDD) rule was used for scheduling orders at work centers with ties broken using the order of arrival to the work center (FCFS). EDD was shown to perform well compared to other rules (Fry et al., 1989), and by using EDD, the primary reason for late order completion should be due to the system complexity.

Other important systems parameters included the following. All items in a manufacturing order remained together for each processing step meaning no “batch-splitting” occurred. No loss of product occurred, e.g., quality failures, so that every order was completed for its entire order quantity. Transfer time for moving manufacturing orders between work centers was ignored in the simulation. Each work center contained a single server (i.e. machine). There was an unlimited maximum queue size at a work center.

The fictitious batch manufacturing shop was simulated using AWESIM according to the design attributes just described. This is the same simulation used in the prior study except for the changes to the arrival rate distribution (as stated earlier) and the addition of the new complexity elements.

Data for every order was automatically captured in a database. To determine the number of orders in a replication for all experiments, trial runs were conducted using the “worst case”, or most complex, system. It is a common to establish the replication size as the length of time needed to clear the transient period. This was then converted to the number of orders by multiplying that time by the average orders per hour. In preliminary simulation runs, the average orders per hour were determined in the steady state period. Doing this ensures that the same number of orders was evaluated for every replication in every experimental run. To guarantee a long enough observation period, the replication size was set to 2000 orders. For each experiment, data was collected beginning with order 2001 and ending with order 4000. An interval equal to one replication was left between batches where statistics were not collected to maintain independence of batches. Hence, for orders 4001 to 6000, data was ignored. Data collection resumed beginning at order 6001 through 8000, and so on until 15 replications of data had been obtained for each of the 256 experiments. The statistics were accumulated for 2000 consecutive orders to avoid censoring data (Blackstone et al., 1982). For example, data was recorded for order 4000 even if orders 4001, 4002 and 4003 were completed prior to order 4000.

RESULTS

After completing the 256 experiments, there were 3840 sets of data, each containing 2000 production orders. The performance measures for each order were calculated and analyzed. An initial review of the data revealed that the near normality requirement of ANOVA techniques was not met. Transformation techniques were evaluated for each performance measure. The LOG transformation was deemed the best choice for all measures, individually. Similar to the previous study, the correlations between the five performance measures, with or without transformation, were all very high, all above 0.89. Principle components analysis using SPSS statistical software extracted a single factor from the transformed DVs explaining 93.6% of their variation. As in the prior study, this factor was named MFGPERF, denoting it as a summary measure for total system performance.

Using MFGPERF as the dependent variable, an ANOVA analysis was performed to “screen” the significant effects. Table 4 presents the results. Only three of the complexity elements (CC, RS, and CC) were not statistically significant at 0.05 significance. The effect size was measured using η^2 . Although η^2 may be distorted by not using a full-factorial model, it is still a way to measure relative effect size. In the omnibus model, ARV, arrival rate variation, had the greatest effect (0.902), far more than that of the second highest item, D, depth of product structure, (0.297). OSV (0.264), B (0.224) and WC (0.211) also had appreciable effect sizes. PMR (0.038) and P (0.018) had marginal effect sizes, whereas RTD (0.009) and STR (0.002) had no meaningful effect.

Table 5 displays the results of the ANOVAs for each transformed performance measure excluding the three complexity elements that were not significant in the omnibus test. Universally, ARV has the highest effect size regardless of the dependent variable. RTD, and STR have no practical significance in any case, having η^2 values all below 0.010. Beyond these three, the relative effect size for the other complexity elements varies based on the performance measure. OSV, the second measure of external complexity, has a consistently high effect size for the three performance measures involving variation – the standard deviations of flow time (S_{FT}), of lateness (S_L), and of tardiness (S_T). It had much less effect on mean tardiness (T_{MEAN}) and substantially less on mean lateness (L_{MEAN}).

Table 4
Omnibus ANOVA Results

Source	Type III Sum of Squares	df	Mean Square	F	Significance	η^2	Sig.
Corrected Model	4,377.33	9	486.37	1,129.87	0.000		
Intercept	0.00	1	0.00	0.00	1.000		
P	6.15	1	6.15	71.24	0.000	0.0180	*
D	139.36	1	139.36	1,613.88	0.000	0.2970	*
B	95.16	1	95.16	1,102.04	0.000	0.2240	*
PMR	12.92	1	12.92	149.63	0.000	0.0380	*
CC	0.33	1	0.33	3.82	0.051	0.0010	N. S.
RS	0.33	1	0.33	3.82	0.051	0.0010	N. S.
WC	88.63	1	88.63	1,026.43	0.000	0.2110	*
RC	0.03	1	0.03	0.34	0.561	0.0000	N. S.
RTD	3.13	1	3.13	36.30	0.000	0.0090	*
STR	0.51	1	0.51	5.93	0.015	0.0020	*
ARV	3,043.43	1	3,043.43	35,245.00	0.000	0.9020	*
OSV	118.54	1	118.54	1,372.77	0.000	0.2640	*
Error	330.47	3827	0.09				
Total	3,839	3,840					
Corrected Total	3,839	3,839					

Adjusted R Squared = .914

Lacking results for a full factorial experiment, the effect sizes are difficult to compare fairly. In order to get some idea of the relative effect sizes among the complexity elements, the rank order of effect sizes was made for each performance measure as shown in Table 6. Items in bold denote that η^2 is well below 0.100. One noteworthy generalization from the ranked ordering is that P and PMR rank at or near the bottom for the five performance measures. P never has an η^2 above 0.066. B, D, WC, and PMR have effect sizes very close to each other for T_{MEAN} , ranging from 0.125 to 0.159. Another generalization is that D ranks relatively high for most performance measures – either ranked 2 or 3 with the exception of L_{MEAN} , where it is ranked 4.

The marginal means (see Table 7) for each performance measure were evaluated to better understand the size and the direction of the effects. Combing these results with those in Table 6, we conclude that increased variability in the order arrival rate (ARV) substantially adds to the unpredictability of system outcomes, that is, it increases complexity. This is clearly reflected in

the relative increase in size of all of the measures of variation, S_{FT} , S_L , and S_T . Similarly, we observe that increased variability in order size (OSV), the other external complexity element, leads to greater unpredictability. These were followed by two elements of system design complexity - product structure depth (D) and breadth (B). Systems with product structures that are wider and/or deeper demonstrated poorer performance (in L_{MEAN} and T_{MEAN}) and well as greater unpredictability (in S_{FT} , S_L , and S_T).

Table 6					
Rank Ordering by Effect Size					
Rank	S_{FT}	L_{MEAN}	S_L	T_{MEAN}	S_T
1	ARV	ARV	ARV	ARV	ARV
2	OSV	B	D	B	OSV
3	D	WC	OSV	D	D
4	B	D	WC	WC	WC
5	WC	P	B	PMR	B
6	P	PMR	PMR	OSV	P
7	(none)	OSV	P	P	PMR

Values in bold are occurrences where the direction of the effect is opposite of what was anticipated. As in the case of our prior research, the number of work centers in the system, WC, universally had the opposite effect as would be anticipated. As the number of work centers increased, the unpredictability lessened. Not only did the mean lateness and tardiness improve, there was also smaller variation of flow time, lateness and tardiness. For the number of products, P, there were some mixed results. When there were more products being produced by the system, the variation in flow time and tardiness shrank, yet the variation in lateness increased. However, when there were more end-products, performance worsened (in L_{MEAN} and T_{MEAN}) as anticipated. For PMR, it also showed having an opposite effect on S_{FT} . Based upon the prior analysis of the effect size using η^2 , the difference for PMR is considered not practically significant.

Table 7
Marginal Means by Performance Measures

Factor	Setting	Performance Measure				
		S _{FT}	L _{MEAN}	S _L	T _{MEAN}	S _T
P	Few	2,106	1,983	2,015	2,046	1,982
	Many	1,927	2,065	1,868	2,070	1,864
D	Shallow	1,431	1,451	1,397	1,483	1,382
	Deep	2,602	2,597	2,486	2,633	2,465
B	Narrow	1,563	1,435	1,484	1,484	1,460
	Broad	2,470	2,613	2,399	2,632	2,386
PMR	Dominant Product	2,038	2,009	1,913	2,010	1,912
	Equal volumes	1,995	2,039	1,970	2,107	1,934
WC	Few	2,498	2,605	2,432	2,630	2,417
	Many	1,535	1,443	1,450	1,486	1,430
RTD	Small	1,996	1,974	1,920	2,013	1,901
	Large	2,037	2,073	1,962	2,103	1,946
STR	Short	1,964	1,970	1,887	2,003	1,869
	Long	2,069	2,078	1,996	2,113	1,977
ARV	Small	305	167	180	223	157
	Large	3,729	3,881	3,702	3,893	3,690
OSV	none	1,849	1,987	1,849	2,028	1,833
	Some	2,184	2,061	2,034	2,088	2,014

One of the key questions to be addressed was the impact of the external complexity elements, arrival rate variation (ARV) and order size variation (OSV). To do this, ANOVAs were analyzed when these factors were excluded and the adjusted R^2 were then compared. Table 8 reports the results of the different combination of models with and without each external complexity element. When no external complexity is included in the model, the internal complexity factors only explain 8.8% of variation in MFGPERF as compared to 91.4% when both ARV and ORV are included. This indicates that external complexity plays an extremely large role in system performance and unpredictability. If only ORV is included, adjusted R^2 increased to 0.119, explaining only 3% more variation than the internal complexity factors. Introducing ARV without ORV into the model increased adjusted R^2 to 0.883, explaining over 79% more variation in MFGPERF. This is a clear indication that the arrival pattern of customer orders can have a considerable impact on system performance.

Table 8
Model Comparisons

Model	Significance	Adjusted R ²
Model without Ext. Complexity Factors	< 0.001	0.088
Model with Order Size Variation only	< 0.001	0.119
Model with Arrival Rate Variation only	< 0.001	0.883
Full model	< 0.001	0.914

Finally, since ARV had such a huge effect, we wanted to discover how it might influence the way the other complexity elements affect performance and unpredictability. Table 9 displays the effects from ANOVA models when the results for high ARV were split from the results for low ARV. Interpretation of these results must also be guarded because the experiment was fractional factorial. Yet, we believe there is value in making some observations at this point. Note that based upon adjusted R², the models explain close to the same amount of variation in MFGPERF. The largest change observed is for ORV. When variation in arrival rate was low, order size variation has a very large effect on performance, both relative to the other factors and relative to when ARV is high. When ARV is high, P, the number of end-products, had no effect on performance, but a low amount ($\eta^2 = 0.103$) when ARV is low. This occurs similarly for RTD, the routing time differences from item to item, but the effect size is small ($\eta^2 = 0.033$) when ARV is low. Likewise, the product mix ratio, PMR showed a greater and substantially more sizeable effect ($\eta^2 = 0.208$) at the low level for ARV than at the high level where it had no meaningful effect on performance. However, when there was greater variation in arrival rate of orders, the product structure elements – breadth (B) and depth (D) – as well the number work centers (WC), had a substantial increase in their effect on performance.

Table 9
Effects of Complexity Factors when Arrival Rate Variation is Held Constant

Factor	Effect (η^2 - upper/p-value - lower)		Change in Effect
	ARR Rate CV Low	ARR Rate CV High	
P	0.103 (0.000)	n. s. (0.067)	↓
D	0.393 (0.000)	0.487 (0.000)	↑
B	0.258 (0.000)	0.455 (0.000)	↑
PMR	0.208 (0.000)	0.008 (0.000)	↓
WC	0.234 (0.000)	0.451 (0.000)	↑
RTD	0.033 (0.000)	0.003 (0.020)	↓
STR	n. s. (0.710)	0.014 (0.000)	↑
OSV	0.640 (0.000)	0.002 (0.089)	↓
Adjusted R ²	0.777	0.724	

DISCUSSION

The purpose of this research was to discover how the complexity elements related to a manufacturing system's design affect system performance in the context of differing levels of external complexity. First and foremost, we find that external complexity in the form of the variation in customer order arrival rate (ARV) and order size (OSV) dominates the explanation of manufacturing performance and system unpredictability. Arrival rate variation had, by far, the largest effect. When systems cannot anticipate the timing of new orders, the manufacturing system's innate ability to cope with this variation is low, thus affecting predictability of outcomes. Additionally, when order sizes vary, this leads to more unpredictability in the results. The results from changes in the amount of variation for either (or both) of these showed increased lateness and tardiness. We also see more unpredictability as measured by the standard deviation of lateness and tardiness. When a firm experiences more variation in lateness, they can be excessively delinquent in their delivery to customers or end up frequently holding finished goods in inventory until the contracted ship date. When orders complete early, in essence, they had used system capacity at a time that was sooner than necessary, possibly preventing other items from utilizing resources when needed so that those orders could complete on time. Alternatively, it may mean that there is excess capacity that has to exist in order to cope with the

unpredictability caused by customer order rates and sizes. For practicing managers, in order to moderate the impact of this external complexity, they must employ other management interventions like expediting, holding inventories, or using safety stock, all of which increase a firm's costs. Here is the value for adopting top-tier ERP systems that incorporate sophisticated algorithms, which are now accommodated by the availability of affordable modern computing power. In addition, the results regarding external complexity lend credence to the continuation of research into order planning, order release, scheduling, and batch-sizing. Further study of how these effects can be mitigated through integrated supply chain planning is also justified by our results because suppliers will need to be prepared to cope with the same unpredictability that is due to the external complexity because that will naturally flow to them.

Additionally, when controlling for external complexity, we confirmed which of these system complexity elements influence performance. The main things for managers of firms to consider are the depth and breadth of their product structures, and to a much lesser degree, the number of products they offer and the mix of products. This concurs with our previous results. The depth of a product structure is a result of the amount of backward integration a firm commits to do. The negative impact to performance of the local system by producing items deep into the end item's product structure (backward integration) may justify outsourcing. In this research, we did not study the affect that supplier deliveries might have, but an alternative to backward integration is to outsource to external suppliers. It also confirms to managers that there is a tradeoff. Backward integration grants more control of supply to a firm, but may require firms to invest in "buffer" capacity as the additional complexity necessitates this extra capacity in order to maintain lead times and meet delivery promises. This comes at additional costs.

As far as the breadth of the product structure, again, this is problematic when a firm is committed to produce such a number and variety of items internally that eventually get assembled into their end items. Outsourcing some manufactured items can reduce the effects to performance that results from having so many items competing for system resources. We also observed that the potential for product structure breadth and depth to negatively affect performance and increase unpredictability is exasperated by variability in order arrival rates. Meaning that managers cannot neglect to consider this aspect of customer demand when making insource/outsource decisions. This is also something for researchers to consider as they study areas related to system design.

In addition, component commonality and routing commonality showed no meaningful effect on system performance. This is also in-line with our previous research, now confirmed after accounting for external complexity.

This research sought to identify attributes of a system that management controls that have an impact on system performance excluding most common interventions by management. We excluded using forecasting, holding inventory, including safety stock or safety lead time, as well as advanced methods to schedule orders. Clearly, the purpose of these is to allow a system to cope with external (and internal) sources of variation to lessen their effect on performance, especially as experienced from customers. These must be employed to operate viably in a competitive environment.

Even after this second research into the system elements of complexity, there is no obvious reason for the effect observed for the number of work centers. Having a greater variety of work centers for processing the variety of manufactured items, while attempting to hold utilization constant, seemed like something that would lead to more variation in performance. It was expected that the standard deviations of flow time, lateness or tardiness would increase when greater variety of work centers existed. It did not function as expected even when controlling for the external complexity items (order arrival rate and order size variation) and for routing time differences (RTD) and set-up time ratio (STR). Recall, these were included, in part, to try to account for this unexpected result. That did not occur. In fact, routing time differences and set-up time ratio has no practical effect while the number of work center has a sizeable effect on performance in the opposite direction. No obvious explanation is available for this.

From these results, we have now identified, through confirmation, the primary strategic and tactical elements in manufacturing systems that affect performance to the customer through longer lead times or late deliveries. At the same time, we noted items that appear to have little impact (for batch-type manufacturing systems). This gives direction as research continues in strategic supply decisions like insourcing versus outsourcing by the effects demonstrated especially by the breadth and depth of products structures.

CONCLUSION

A study was conducted to investigate the proposed elements of internal manufacturing complexity under two levels for two attributes of external complexity – variation in order arrival rate and variation in order size. The results indicate that the amount of variation in the order arrival rate has the largest effect on the performance measures included in this research. The variation in order size also played a very significant role in system performance and unpredictability. Additionally, the findings from the prior research effort regarding the relevant elements of internal complexity were confirmed. The breadth and depth of the product structure are important concerns for a firm to reflect upon when evaluating causes of performance variation.

The generalization of the findings, of course, is limited by the research design. A batch-type system was simulated, so these conclusions might not be true for assembling line or machine shop type of systems. Additionally, only two levels of each factor were simulated because it was impractical to be able to perform all possible permutation of experiments even by confining the study to having two levels for each. Also, the high settings for number of products was relatively low. Yet, there was statistical significance. We believe this is an indication that this factor is something important as a firm considers expanding their product line. Another limitation was that a full factorial ANOVA was not used. Due to the extraordinary number of simulations that would have been required, a fractional factorial design was used. Some of the analysis, especially when focused on evaluating numerical effects, is susceptible to error due to lacking a complete set of combinations of factors. It also eliminated the opportunity to evaluate interactions among factors. These are significant limitations that might be addressed in future research.

Further research into the effect of the number of products in a portfolio is recommended, since five was the largest considered herein. It may be that this has a more dramatic effect than was estimated in this research. The interactions among factors, especially with the external complexity factors could be considered. In addition, rooting out the reason for the reverse effect of the number of work centers is of interest.

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MOTIVES MATTER: THE DEVELOPMENT AND CONSEQUENCES OF CORPORATE SOCIAL RESPONSIBILITY AUTHENTICITY

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ABSTRACT

When stakeholders perceive that an organization's corporate social responsibility efforts are a genuine representation of the organization's "true self," these beliefs are known as corporate social responsibility authenticity (CSRa) perceptions. CSRa perceptions are likely to have an impact on relationships between organizations and various stakeholders, including employees. This study integrates the use of attribution theory and social exchange theory to better understand how CSRa perceptions come to form in the minds of employees, as well as how those CSRa perceptions influence employee attitudes and behaviors towards the organization. Specifically, perceived strategic-driven motives and perceived values-driven motives are proposed to contribute to employees' CSRa perceptions. CSRa perceptions are predicted to induce feelings of organizational trust (OT), and employees are expected to exhibit reciprocal behaviors in the form of organizational citizenship behaviors (OCB). It is argued that both motive perceptions will positively influence employee OCBs through mediated paths via CSRa and OT. Utilizing a time-lagged survey design, hypotheses were tested and support was found for values-driven motives influencing OCBs via the predicted mediation path. The results imply that employees may have different "authenticity expectations" than that of other stakeholder groups, namely consumers. This study serves to enrich our understanding of how CSRa can be utilized to enhance employee-organization relationships.

INTRODUCTION

In general, corporate social responsibility (CSR) practices are known to positively affect public opinion of an organization through an enhanced image, reputation, and overall level of credibility (Bhattacharya & Sen, 2004; Pfau, Haigh, Sims, & Wigley, 2008). Given that these are public perceptions that organizations would seek to enjoy, it is no great surprise that we have seen a large number of organizations jump on the CSR bandwagon. While it is vital to understand how CSR enables organizations to have positive relations with their external stakeholders, it is also critical to understand how CSR may enhance organizational relations with internal stakeholders, namely employees. While CSR policies are implemented on behalf of the organization, it is individual employees that ultimately put those policies into practice by campaigning for, complying with, and engaging in CSR (Crilly et al., 2008; Ones and Dilchert, 2012). Therefore, in order for CSR to be successful within organizations, it is crucial that we understand how CSR affects employee-organizational relations.

Aguinis and Glavas (2012) conducted a review of the CSR management literature, and at the time, only 4% of the existing research focused on CSR phenomena at the individual level. Since then, CSR researchers have sought to make significant contributions to our understanding of CSR at the micro level. The spike in micro-CSR research led Rupp and Mallory (2015) to conduct a more recent review of the literature. In that review, the authors explain that all parties

who have an interest in CSR, whether it be from a practitioner or academic perspective, are concerned with overall CSR efficacy (Rupp and Mallory, 2015). Understanding how and why CSR affects certain stakeholders (including employees) begins with discerning the theoretical foundations as to *why* CSR appeals (or fails to appeal) to certain stakeholder groups (Rupp & Mallory, 2015). Previous research has identified a number of these psychological mechanisms, including leader-member exchange (Mallory & Rupp, 2014), organizational identity (Carmeli, Gilat, & Waldman, 2007; De Roeck, Marique, Stinglhamber, & Swaen, 2014; Jones, 2010), organizational pride (Jones, 2010), organizational attraction (Gully, Phillips, Castellano, Han, & Kim, 2013), and perceived person-organization fit (Gully et al., 2013).

One psychological mechanism that has received little attention from the management literature is that of corporate social responsibility authenticity (CSRa), which is the perception that an organization's CSR efforts are a genuine representation of the organization's "true self" (Alhouti, Johnson, & Holloway, 2016). Previous research has indicated that organizations that are perceived as authentic in their CSR efforts are more likely to build trust with stakeholders (Beckman, Colwell, & Cunningham, 2009; Bhattacharya, Korschun, & Sen, 2009). However, if CSR is perceived as inauthentic, it has the potential to hinder the adoption of CSR by employees, as well as external stakeholders (Beckman et al., 2009). While previous research has provided initial evidence that CSRa will likely produce positive outcomes, we still know very little about what contributes to the development of CSRa in the minds of employees and what specific perceptions or actions might be triggered as a result. In order to gain a more holistic view of CSRa, this study examines antecedents and consequences of CSRa perceptions from the perspective of current employees.

Drawing on attribution theory, this study explores and tests how CSRa is established in the minds of employees through investigating two perceived motives for pursuing CSR—*strategic-driven* and *values-driven motives*. Marketing research has found that consumers typically respond positively to both strategic and values-driven motives (Alhouti et al., 2016; Ellen, Webb, & Mohr, 2006), but how these motive perceptions affect employees' perceived CSRa have been relatively unexplored. In the hypothesized model, both sets of motive perceptions are expected to contribute to employees' perceived CSRa.

Under the tenets of social exchange theory (Blau, 1964), as well as the norm of reciprocity (Gouldner, 1960), this study argues that CSRa will serve to mediate the relationship between employees' motive perceptions and their subsequent positive feelings and behaviors directed towards the organization. Namely, feelings of organizational trust (OT) consequently triggering employee engagement in organizational citizenship behaviors (OCBs) are predicted.

The findings of this study provide four important contributions to the micro-CSR literature. First, it serves to identify distinct aspects of the employee-organization relationship that are enhanced through CSRa. Second, this study contributes to filling gaps identified by previous micro-CSR researchers. Third, the relatively understudied area of CSR evaluations is further enriched. And lastly, this study provides a dynamic, multiple-mechanism model for understanding how employee attributions and authenticity judgements lead to positive employee outcomes.

THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

Authenticity

In the age of information transparency and self-awareness, organizations and individuals alike have been in an increased pursuit of attaining authenticity in one form or another. A recent review by Lehman, O'Connor, Kovacs, and Newman (2019) revealed that while some consensus exists around the concept of authenticity, in that it is tied to the idea of being “real” or “genuine” or “true,” there are multiple meanings and approaches that underlie those terms, thereby leading to much less consensus than initially assumed. Lehman et al. (2019) outlined three distinct perspectives of authenticity within existing literature: 1) *consistency* between an entity's internal values and its external expressions, 2) *conformity* of an entity to the norm of its social category, and 3) *connection* between an entity and a person, place, or time as asserted (p. 2). The perspective being adopted within this study falls under the *consistency* category, in that this study explores whether employees perceive their organization is being consistent between its external CSR efforts and its internal priorities/organizational self, and how that perception affects employee relationships with the organization.

Consistency between the “front stage” (what is presented to others) and “back stage” (an entity's ‘true self’) (Goffman, 2002) has proven to be significant in understanding employee reactions to CSR. De Roeck et al. (2014) set out to understand how and under what conditions employee perceptions of CSR affected employees' subsequent levels of organizational identification. The authors identified overall justice perceptions as an important boundary condition and moderator of CSR perceptions on organizational identification. Articles such as Ambrose and Schminke (2009) and Bobocel (2013) explained that employees are more likely to form overall justice perceptions regarding their organizations, as opposed to focusing on specific facets of justice. De Roeck et al. (2014) predicted that employees would react more positively to their organization's CSR efforts when they also held high overall justice perceptions of the organization. According to cue consistency theory (Anderson, 1981; Maheswaran & Chaiken, 1991; Miyazaki et al., 2005), when multiple sources of information about an entity (i.e., the organization) are consistent, those sources of information can be aggregated and averaged to predict attitudes and behaviors of individuals (i.e., employees). On the other hand, when information between sources is incongruent, typical averaging models can no longer predict individual behavior. In fact, when inconsistent information is presented, individuals tend to focus on the negative information, potentially hindering reactions and leading to the development of overall negative responses (Anderson, 1996; Miyazaki et al., 2005; Wagner, Lutz, & Weitz, 2009). De Roeck et al. (2014) tested and confirmed the importance of consistency (i.e., authenticity) in understanding and predicting employee reactions to CSR.

Scheidler, Edinger-Schons, Spanjol, and Wieseke (2019) helped to shed additional light on the importance of authenticity in the form of consistency when it comes to employee reactions to CSR. The authors jointly investigated firms' investments and strategies when it came to external CSR (e.g., philanthropic) and internal CSR (e.g., employee-directed). Results indicated that inconsistent CSR strategies, particularly those that favored external stakeholders over internal stakeholders, triggered employee perceptions of corporate hypocrisy, which subsequently lead to increased emotional exhaustion and turnover (Scheidler et al., 2019). When a lack of consistency exists between the “front stage” and “back stage,” employee reactions to CSR are negatively impacted, leading us to believe that authentic/consistent perceptions of CSR are critical to achieving positive gains when it comes to the employee-organization relationship.

Lee, Park, and Lee (2013). emphasized the importance of consistency in the development of employees' CSR perceptions through their study of perceived cultural fit. Lee et al. (2013) explain that fit is considered high when employees perceive that there is congruence between an organization and a sponsored cause (i.e., CSR), regardless of whether that congruence is derived from mission, products, markets, technologies, attributes, branding, or any other identifiable key association (Bridges, Keller, & Sood, 2000; Park, Milberg, & Lawson, 1991). The authors found that perceived cultural fit positively contributed to employees' perceptions of their organization's CSR activities, which subsequently contributed to employee attachment and performance (Lee et al., 2013).

To understand this study's conceptualization of CSR authenticity and its nomological net, it is important to contrast it with related constructs such as corporate hypocrisy and greenwashing. Drawing from the marketing literature, perceived corporate hypocrisy is defined as "the belief that a firm claims to be something that it is not" (Wagner et al., 2009, p. 79). While it is expected that CSR authenticity and corporate hypocrisy are related, such that when perceptions of CSR authenticity are high, perceptions of corporate hypocrisy would likely be low, throughout the literature, these constructs have been studied and operationalized somewhat differently. Items used to measure corporate hypocrisy generally deal with inconsistencies between observed CSR behaviors and an organization's *statements* about CSR. In other words, hypocrisy is based largely on a disconnect between what the organization does and what it says, or a break between communication and action. In contrast, the definition of CSR authenticity centers on congruence between observed CSR behaviors and the organization's *identity, values and beliefs*, or a fit between what the organization does and "who the organization is." It is based more on a connection between what the organization does and what it values. Consistent with these different operationalizations, corporate hypocrisy has been studied in regard to specific CSR actions and communications (Wagner et al., 2009; Shim & Yang, 2016), while CSR authenticity has been studied in regard to CSR efforts and organizational values/priorities as a whole.

Lyon and Maxwell (2011) define greenwashing as selective, overly positive disclosure about CSR efforts with the intent of boosting corporate image. When stakeholders become skeptical about the nature of an organization's CSR actions, those stakeholders tend to react negatively and may accuse the organization of greenwashing (Mazutis & Slawinski, 2015). While CSR authenticity (or rather, lack thereof) and perceptions of greenwashing are related, they are two distinct constructs. Greenwashing emphasizes the promotion of an over-inflated or, at times, even a false CSR image, whereas inauthentic CSR implies that the CSR does not align with the organization's "true self." The organization may be accurate and transparent in its *promotion* of CSR practices, and yet, those CSR practices may not be authentic to the organization's true self. As a result, it is entirely feasible that an organization could be engaging in *inauthentic* CSR while simultaneously *not* engaging in greenwashing. In sum, greenwashing and CSR authenticity are distinct, with the former focused more on consonance between actions and image and the latter focused more on consonance between actions and true self.

Attribution Theory and Motive Perceptions

Driver (2006) provided a formal introduction of the concept of CSRa into the management CSR literature. Driver (2006) proposed moving past the dichotomy of economic versus ethical models of CSR and reframed the models as no longer being mutually exclusive, but rather that CSR exists on a continuum between illusionary and authentic notions of the

organizational self. Existing CSRa research has indicated that stakeholders generally rely on “cues” to distinguish whether or not an organization is being “true to itself” (i.e., authentic) in its CSR actions (Beckman et al., 2009; McShane & Cunningham, 2012). Perceived motives for CSR engagement potentially serve as “cues” or sensemaking factors that employees can use to discern CSRa. Therefore, these “cues” help employees determine where their organization lies on the authenticity continuum. Following the aforementioned conceptualization of authenticity as consistency, those that perceive CSR cues that are consistent with the organizational self will likely perceive CSR as higher on the authenticity continuum, while those that perceive CSR cues that are inconsistent with the organizational self will likely view the CSR as lower on the authenticity continuum.

According to attribution theory, in order to better understand our surrounding environment, individuals tend to ascribe causal explanations for the behaviors of others, whether that be individuals or organizations (Kelley & Michela, 1980). This process of attributing motives consists of sensemaking, which is the ongoing process that individuals use to give meaning to events and experiences, especially when faced with uncertainty and complexity (Weick, 1995). Aguinis and Glavas (2019) explained that CSR is a model environment for sensemaking, given that it often creates various tensions and social dilemmas.

As organizations continue to adopt various CSR practices and policies, employees encounter CSR by being asked to engage in, donate to, and/or promote their organization’s CSR efforts. This personal confrontation with CSR should trigger employees to engage in a sensemaking process, which will likely involve an attributional search as to *why* the organization is participating in such practices. Gilbert and Malone (1995) explained that individuals care less about *what* organizations are doing as opposed to *why* they are doing it. How the CSR efforts are framed and what benefits the organization emphasizes will likely affect employees’ attributions about CSR motives. For example, if an organization engages in an eco-efficiency or sustainability initiative and the organization highlights the cost savings accrued, then an employee might be more likely to attribute strategic-driven motives to the organization’s CSR engagement. On the other hand, the organization could engage in the same sustainable practices, but place greater emphasis on the organization’s desire to reduce its carbon footprint as a “good corporate citizen” and to have a positive impact on the natural environment at large. The latter emphasis might cultivate more values-driven motive attributions. Of course, organizations can and do place emphasis on a number of benefits derived from CSR efforts, which is likely to result in employees attributing mixed motives for engaging in CSR.

Porter and Kramer (2006), as well as many other academic and practitioner researchers, identify several factors that affect the strategic implementation of CSR, including aligning the CSR with business and corporate culture, as well as with social needs and altruism. Once these factors are satisfied, employees perceive CSR activities more favorably (Lee et al., 2013; Porter & Kramer, 2006). Therefore, it is being proposed that either motive (strategic-driven or values-driven) potentially serves to contribute to employees’ feelings of CSR authenticity. Most employees are likely to recognize that pursuing CSR for strategic or economic reasons is consistent with who the organization is. It is a well-known axiom that organizations are in business to make a profit. Even non-profit organizations have to be concerned with financial stability. Thus, it is likely that employees would see pursuing CSR for strategic or economic reasons as authentic or consistent with “who we are as organization” because of this axiom.

Additionally, in most cases, CSR efforts are explained and endorsed as something the organization values and wants employees to support. Therefore, most employees would *also* likely recognize pursuing CSR for values-driven reasons as consistent with who the organization is and what it values because of this explanation and endorsement—“We are an organization that values CSR and we are pursuing CSR for this reason.” Thus, after arriving at either attribution of motive through sensemaking (based on axiom or explanation/endorsement), the employee would likely perceive CSR to be authentic. The alignment serves as a form of consistency and thereby contributes to authenticity perceptions.

H1: Perceived strategic-driven motives will have a positive effect on employees' perceptions of CSR authenticity.

H2: Perceived values-driven motives will have a positive effect on employees' perceptions of CSR authenticity.

Organizational Trust

Robinson (1996) defined trust as “one’s expectations, assumptions, or beliefs about the likelihood that another’s future actions will be beneficial, favorable, or at least not detrimental to one’s interests” (p. 576). This definition was chosen because it references how another’s actions affect one’s self-interest, implying some conceptual overlap with social exchange theory, which will be drawn upon later.

Existing research on organizational trust has largely focused on the *supervisor*, through research streams such as interpersonal trust (e.g., Cook & Wall, 1980; Schoorman, Mayer, & Davis, 2007), trust in the supervisor (e.g., Deluga, 1995; Lagace, 1991), and trust in top management (e.g., Mayer & Gavin, 2005; McCauley & Kuhnert, 1992). Tan and Tan (2000) argued that *trust in supervisor* and *trust in organization* are related but distinct constructs. These authors defined *trust in supervisor* using Mayer, Davis, and Schoorman’s (1995) definition, describing it as the willingness of an employee to be vulnerable to the actions of his or her supervisor, something over which the employee has no direct control. Mayer et al. (1995) based their definition of *trust in organization* on Gambetta (1988), defining it as the employee’s perceived global evaluation of the organization’s trustworthiness. Given that the constructs of interest for this study focus on employee perceptions regarding organizational motives for engaging in CSR, and organizations’ subsequent levels of perceived CSR authenticity, it is most appropriate to examine employees’ trust as it relates to the organization as a whole. Employee trust is an essential ingredient to any stable employee-organization relationship (Cook & Wall, 1980).

It is proposed that CSR authenticity can positively impact employees’ levels of organizational trust through serving as a form of consistency and predictability. As outlined by Robinson (1996), trust is based on the trustor’s (i.e., the employee’s) expectations regarding the future actions of the trustee (i.e., the organization). When an organization is perceived as authentic in its pursuit of CSR, this indicates that the organization is displaying a form of consistency, which allows employees to feel more confident in their assumptions about the organization’s future behavior or actions, thereby indicating increased organizational trust. Consistency has often been identified as a key determinant of trust (e.g., Butler, 1991; Butler & Cantrell, 1984; Mayer et al., 1995).

Goodman (2006) described CSR as “an approach to business that embodies transparency and ethical behavior, respect for stakeholder groups and a commitment to add economic, social, and environmental value” (p. 6). Employees are constantly monitoring the organizational

environment to assess the trustworthiness of their organization (Carnevale, Gainer, & Meltzer, 1988). If employees maintain perceptions of authentic CSR about their organization, this can contribute to their assessment of the organization's overall trustworthiness by serving as a form of consistency, helping to establish and/or reinforce employees' beliefs that the organization's actions will "be beneficial, favorable, or at least not detrimental" to their interests (Robinson, 1996).

Hypothesis 3: Employees' CSR authenticity perceptions will positively influence employee feelings of trust in the organization.

Previous research has investigated the direct relationship between employees' perceived CSR motives and their subsequent organizational trust. In particular, Vlachos, Theotokis, and Panagopoulos (2010) examined the attitudinal and behavioral outcomes of sales force employees in relation to the organization's CSR practices. The authors proposed that employees' perceived values-driven CSR motives would have a positive impact on organizational trust, in that values-driven motives would serve as a signal to employees that the organization is a caring and benevolent entity. Perceiving the organization as trustworthy, employees would then expect the organization to act in ways that should benefit (or at least not harm) employees. The authors also predicted that perceived strategic-driven CSR motives would have a positive impact on organizational trust, as engaging in CSR for strategic reasons would serve to achieve business goals while simultaneously benefitting the CSR cause. Pursuing CSR for strategic-based reasons would serve to directly benefit employees, and therefore should increase organizational trust. The authors found a significant and positive relationship between values-driven motives and organizational trust, but strategic-driven motives did not appear to significantly influence organizational trust. They explained the latter finding by suggesting that organizations are *expected* to engage in behaviors that yield financial benefits; therefore, strategic-driven motives did not lead to an increased sense of trust. What the Vlachos et al. (2010) study did not examine was whether employees perceived the CSR as authentic, which is being proposed as a critical element in connecting perceived motives (both values-driven and strategic-driven) to employees' organizational trust.

CSR authenticity can serve as a culminating mechanism that fosters organizational trust in employees whether they perceive the organization is engaging in CSR for strategic-based reasons, value-based reasons, or both. CSR authenticity assures employees that the organization is trustworthy through its overall CSR consistency. This alignment of CSR practices with the organizational self allows employees to feel more secure in their understanding of the organization, what it cares about, and ultimately, that they can trust it will act in a predictable and authentic manner.

HYPOTHESIS 4A: *CSR authenticity will mediate the positive relationship between strategic-driven attributions and employees' organizational trust.*

HYPOTHESIS 4B: *CSR authenticity will mediate the positive relationship between values-driven attributions and employees' organizational trust.*

Social Exchange Theory

The successful employment of CSR is dependent upon an organization's ability to establish strong social relationships among multiple stakeholders. One of the tenets of social exchange theory (SET) is that trusting, loyal, and mutually committed relationships are

established when the parties involved abide by certain “rules” of exchange (Cropanzano & Mitchell, 2005). Social exchange theory models have focused on workplace relationships, predicting organizational antecedents that lead to interpersonal connections, known as social exchange relationships (Cropanzano, Byrne, Bobocel, & Rupp, 2001). By engaging in CSR that is viewed as authentic, organizations are likely to come off as genuine and supportive, and therefore more likely to engender positive social exchange relationships.

The most widely known “rule” of social exchange is the norm of reciprocity (Gouldner, 1960). Reciprocity is a universally accepted norm, such that people will feel obligated to repay or reciprocate benefits they receive from another party. When individuals perceive that their interactions with another party (e.g., the organization) are mutually beneficial, they tend to develop positive feelings of trust, loyalty, and obligation toward that other party (Blau, 1964). Therefore, social exchange relationships between organizations and employees are said to advance when the organization “takes care of employees,” thereby inducing positive outcomes (Cropanzano & Mitchell, 2005) through employees’ felt need to reciprocate the positive treatment that they have experienced. It is being predicted that employees will feel that they personally benefit from the organization’s engagement in authentic CSR. When receiving a perceived benefit, employees will likely feel compelled to reciprocate by displaying positive behaviors and attitudes that serve to benefit the organization.

Organizational Citizenship Behaviors

While organizational citizenship behaviors (OCBs) have multiple definitions (e.g., Hoffman, Blair, Meriac, & Woehr, 2007; Organ 1988, 1997), the central tenet is that OCBs are “employee behaviors that, although not critical to the task or job, serve to facilitate organizational functioning” (Lee & Allen, 2002, p. 132). McNeely and Meglino (1994), Organ (1997), and Williams and Anderson (1991) have all advocated that OCBs that are aimed toward individuals (OCBI) and those that are aimed toward the organization (OCBO) should be distinguished from one another. Lee and Allen (2002) explained that, assuming OCBOs are a deliberate attempt to maintain equitable ratios of inputs and outcomes in the employee-organization relationship, OCBOs are likely to be a direct function of the employee’s appraisal of this relationship. Given that this study focuses on the employee-organization relationship utilizing a social exchange framework, OCBO is a relevant behavioral outcome to examine.

An extensive body of research supports the positive relationship between OT and OCBs (e.g., Aryee, Budhwar, & Chen, 2002; Dirks & Ferrin, 2001; Robinson, 1996). Konovsky and Pugh (1994) explained that trust is a manifestation of social exchange, and Rousseau and Parks (1993) detailed that positive social exchange relationships account for employee engagement in OCBs. Under the rules of social exchange, when one party (i.e., the employee) assesses that the exchange relationship with another party (i.e., the organization) is predictable and beneficial (i.e., organizational trust exists), this often results in the display of cooperative behaviors (i.e., OCBOs), which are used to help to maintain the mutually beneficial relationship. Therefore, it is being predicted that the positive relationship between OT and OCBs will hold within the given context.

H5: Employee feelings of perceived organizational support will positively influence their subsequent display of organizational citizenship behaviors targeted at the organization (OCBO).

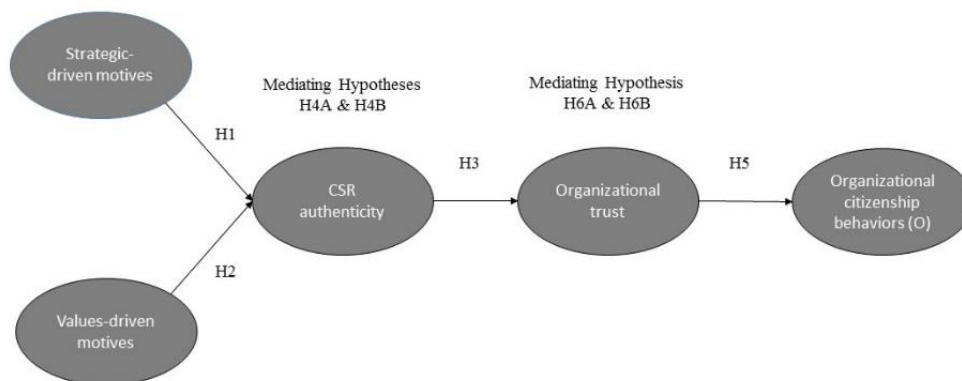
Lastly, given the relationships previously hypothesized, it is predicted that perceived strategic- and values-driven motives will positively contribute to an employee’s engagement in

OCBOs. After employees have attributed values- and strategic-driven motives for their organization's engagement in CSR, and subsequently developed perceptions of authentic CSR, CSRa will likely trigger employee feelings of OT. These feelings result in a social exchange relationship in which employees want to reciprocate to the organization through performing OCBOs. When employees feel they understand *why* the organization is engaging in CSR and those reasons are authentic to "who the organization is," this strengthens their overall assessment of the organization's trustworthiness because it has shown consistency through CSRa. When employees perceive they are working for a trustworthy organization, they are likely to want to respond with positive discretionary behaviors to maintain the positive employee-organization relationship.

H6A: A positive, three-path mediation exists between strategic-driven motives and organizational citizenship behaviors (OCBO) via CSR authenticity and organizational trust.

H6B: A positive, three-path mediation exists between values-driven motives and organizational citizenship behaviors (OCBO) via CSR authenticity and organizational trust.

FIGURE 1: HYPOTHESES



METHODS

Participants were recruited using Qualtrics' panel data services. Data collection websites such as Qualtrics have been cited as a useful resource for industrial-organizational psychology, and social science scholars as a whole (e.g., Brandon, Long, Loraas, Mueller-Phillips, & Vansant, 2013; Landers & Behrend, 2015; Roulin, 2015). Panel participants had to be 18 or older, reside in the United States (verified through a U.S. IP address), and have full-time employment. Given that many employees may not be fully aware of all the CSR efforts their

employing organizations engage in, only full-time employees were recruited simply due to their increased exposure to their respective organizations, thereby increasing the likelihood of participants being exposed to potential CSR programs. Participants were invited to complete two surveys and invitations were sent two weeks apart. A total of 1,686 potential participants attempted to complete the Time 1 survey. Before beginning the Time 1 survey, potential participants were provided a list of CSR efforts that are regularly practiced within organizations. Participants were instructed to select all efforts that applied to their organization or to select “My organization does not engage in any of these practices.” Participants who selected the latter option were screened out and were not permitted to complete the survey. In all, 730 individuals were screened out due to this question. Potential participants were also asked to confirm whether they had full-time employment. Those that indicated they did not have full-time employment were screened out of the survey. A total of 236 individuals were screened out due to lack of full-time employment.

In addition to the preliminary screener questions, two attention check questions were embedded into the survey. Recent studies have shown that attention check questions are effective in screening out inattentive respondents, as well as increasing the overall attention of respondents, thereby increasing the quality of data collected (e.g., Buhrmester, Kwang, & Gosling, 2011; Oppenheimer, Meyvis, & Davidenko, 2009). Those that failed the attention checks were screened out of the survey. From this process, 162 participants were screened out after failing the first attention check and an additional 27 were screened out after failing the second attention check. As a result, 531 participants successfully completed the Time 1 survey.

After two weeks, invitations to participate in the Time 2 survey were emailed to the 531 participants. Attention checks were embedded again that screened out a total of 41 participants. The final sample consisted of 311 participants who successfully completed both the Time 1 and Time 2 surveys. 58% of the participants were female and average participant age was 47.7 years ($SD = 11.46$). 61% of participants reported working for their respective organization for seven or more years. Participants varied greatly in overall level of education, with the majority of participants holding a bachelor's degree as their highest earned degree (44.4%), and the remaining holding high school diplomas (12.9%), vocational/technical certificates (6.8%), associate's degrees (12.5%), master's degrees (17.4%), or doctorate degrees (6.1%).

A time-lagged data collection design was employed in order to create temporal separation between the collection of independent and dependent variables. The use of temporal separation is a recognized and recommended practice for mitigating issues of common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Full data (with the exception of demographic data, which was only collected at Time 1) was collected at Time 1 and Time 2, but for analysis, perceived motives and control data were utilized from Time 1, while CSR authenticity, organizational trust, and organizational citizenship behavior data were utilized from Time 2.

CSR Motive Attributions

The two attribution measures were both adapted from Ellen et al. (2006). The items were adapted to reflect the employee's (rather than consumer's) perspective, as well as to capture a broader view of CSR. In the original study, participants were consumers and were asked to report on the perceived motives behind a *specific* organizational CSR effort, whereas the interest in this study focused on understanding perceived motives for engaging in CSR *as a whole*. Three items from Ellen et al. (2006) were used to represent strategic-driven motives ($\alpha = .82$), including the following sample item: “The organization engages in corporate social

responsibility (CSR) efforts because [stem]:...the organization will get more customers by engaging in CSR efforts” [item]. Three additional items were used to represent values-driven motives ($\alpha = .74$), including the following sample item: “The organization feels morally obligated to help through the CSR efforts.” Scale items for strategic- and values-driven motives were measured using 7-point Likert scales ranging from 1 (highly agree) to 7 (highly disagree).

CSR Authenticity

CSR authenticity was measured using three select items from the Alhouti et al.’s (2016) CSR authenticity scale ($\alpha = .93$). Alhouti et al.’s (2016) eight-item scale was originally created to measure consumer CSR authenticity perceptions, and therefore not all items were relevant from an employee perspective. Items were winnowed down even further to ensure that they mapped closely with how CSRa was conceptualized for this study. As explained earlier, CSRa was conceptualized in terms of how consistent the CSR efforts were perceived to be in relation to the organization’s “true self,” and therefore the following items were included: “The organization’s CSR actions are genuine,” “The organization is being true to itself with its CSR actions,” and “The organization is a socially responsible company.” Additional items from the original scale that appeared to conceptually overlap with other relevant constructs were excluded from analyses. Scale items were measured using 7-point Likert scales ranging from 1 (highly agree) to 7 (highly disagree).

Organizational Trust

Organizational trust was measured using a seven-item scale originally developed by Gabarro and Athos (1976) ($\alpha = .93$) and used by Robinson (1996). Given that organizational trust was conceptualized based on Robinson’s (1996) definition, which is “one’s expectations, assumptions, or beliefs about the likelihood that another’s future actions will be beneficial, favorable, or at least not detrimental to one’s interests,” (p. 576), it was appropriate to use the same scale that Robinson (1996) used to measure the construct. An example item is: “I believe my employer has high integrity.” Scale items were measured using 7-point Likert scales ranging from 1 (highly agree) to 7 (highly disagree).

Organizational Citizenship Behaviors directed at the Organization (OCBO)

Organizational citizenship behaviors directed at the organization were measured using Lee and Allen’s (2002) OCBO scale ($\alpha = .92$). Given that the relationship of interest was between employees and the organization, it was most appropriate to measure OCBs that were directed at the organization itself as opposed to interpersonal citizenship behaviors, or OCBI. A sample item is: “I show pride when representing the organization in public.” Scale items were measured using 7-point Likert scales ranging from 1 (highly agree) to 7 (highly disagree).

Control Variables

Leader-member exchange (LMX) was measured using Graen and Uhl-bien’s (1995) seven-item scale ($\alpha = .94$). LMX data was collected to ensure that employee-supervisor relationships did not account for too much of the variance, as the focus of this study was to examine employee perceptions of CSR authenticity and how those affect employee relationships with the organization as a whole. A sample item is: “I would characterize my working relationship with my supervisor as extremely effective.” Scale items were measured using 7-point Likert scales ranging from 1 (highly agree) to 7 (highly disagree).

Dispositional trust was measured using Schuessler's (1982) five-item scale ($\alpha = .87$). Given that organizational trust was an important outcome and mediator variable, individuals' dispositional trust was controlled for. Dispositional trust accounts for one's general propensity to trust others and is rooted in the trustor's personality as opposed to a careful analysis of the trustee (Mayer et al., 1995). A sample item is: "Most people can be trusted." Scale items were measured using 7-point Likert scales ranging from 1 (highly agree) to 7 (highly disagree).

All scales demonstrated adequate levels of internal consistency. Organizational tenure and demographic data (age, gender, education level) were collected as additional control variables.

Analyses

Table 1 displays the means, standard deviations, and correlations for key variables within the study. As shown, values-driven motives significantly and positively correlated with CSRa ($r = .57, p < .01$), OT ($r = .39, p < .01$), and OCBOs ($r = .45, p < .01$). Contrary to what was predicted, strategic-driven motives had significant, negative correlations with CSRa ($r = -.14, p < .05$) and OT ($r = -.14, p < .05$). There was no significant correlation between strategic-driven motives and OCBOs.

When examining CSRa's relationship with the given control variables, LMX ($r = .59, p < .01$) and DT ($r = .25, p < .01$) positively correlated as expected. Organizational tenure appears to be a significant conditional factor when trying to predict a participant's overall perceptions, as tenure had a significant negative relationship with several constructs of interest: values-driven motives ($r = -.22, p < .01$), CSRa ($r = -.12, p < .05$), and OCBOs ($r = -.18, p < .01$). This suggests that employees appear to view their organization's CSR efforts as less authentic over time. This is not surprising when thinking about (in)authenticity through the framework of (in)consistency, as more tenured employees have greater amounts of information about the organization to inform their CSRa sensemaking process, and thereby, are more likely to find inconsistencies, resulting in views of inauthentic CSR. Correlations also show that older employees are more likely to perceive strategic-driven motives ($r = .14, p < .05$) and less likely to trust the organization ($r = -.11, p < .05$) when compared to younger employees.

TABLE 1: DESCRIPTIVE STATISTICS AND CORRELATIONS

	Total Mean	Total Std. Dev.	Min	Max	1	2	3	4	5	6	7	8	9	10
1. Strategic-driven motives	3.52	1.45	1	7										
2. Values-driven motives	2.30	1.01	1	7	.02									
3. CSR authenticity	2.38	1.21	1	7	-.14*	.57**								
4. Organizational trust	2.74	1.35	1	7	-.14*	.39**	.77**							
5. Organizational citizenship behaviors (O)	2.54	1.13	1	7	-.02	.45**	.66**	.64**						
<i>Control Variables</i>														
6. Leader-member exchange	2.55	1.12	1	7	-.10	.28**	.59**	.65**	.52**					
7. Dispositional trust	3.56	1.21	1	7	-.00	.06	.25**	.37**	.27**	.29**				
8. Age	47.70	11.46	22	75	.14*	-.01	-.11	-.11*	-.05	-.08	-.90			
9. Education	4.65	1.36	1	7	.01	-.08	-.03	.04	-.06	.02	.06	-.24**		
10. Gender	1.58	.50	1	2	.02	-.03	-.03	.04	.04	.03	.13*	.02	-.03	
11. Tenure	4.13	1.27	1	5	.00	-.22**	-.12*	-.01	-.18**	-.12*	-.04	.37**	-.03	.03

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed). Listwise N=309. Gender: male=1, female=2. Education: 1=<High School, 2=High School, 3=Votech, 4=Associate's, 5=Bachelor's, 6=Master's, 7=Doctorate or Professional degree. Tenure: 1=<1 yr, 2=1-3 yrs, 3=3-5 yrs, 4=5-7 yrs, 5=7+ yrs

Following Goodman and Blum (1996), logistic regression was used to test whether or not attrition might have biased the study results. To do so, a dichotomous variable that distinguished “leavers” (those that only participated in Time 1) from “stayers” (those that participated in Time 1 and Time 2) was regressed onto all of the variables of interest, as well as the control variables. This analysis did show significant coefficients for OCBOs ($b = .07$, $p < .05$) and tenure ($b = -.05$, $p < .05$). This suggests that participants who had a higher engagement in OCBs and greater tenure at their organization were more likely to complete the Time 2 survey. The results of this analysis are not all that surprising. Completing a survey about workplace perceptions can be considered indicative of OCB-like behavior, as the survey was completely voluntary and not required by the participants’ organizations. Naturally, participants who tend to “go above and beyond” at work are likely to do the same by completing a follow-up survey about work. More tenured employees also appeared to be more inclined to complete the follow-up survey, which could be because the participants felt that they had the organizational knowledge needed to make accurate assessments about the organization’s CSR efforts.

To assure convergent validity, all factor loadings should be significant and the value of average variance extracted (AVE) should exceed .50 (Fornell & Larcker, 1981). An AVE value of .50 or greater demonstrates that more than 50% of the variance of the construct is due to its corresponding items. The AVE of all constructs of interest exceeded .50, indicating acceptable convergent validity overall.

Table 2 provides a scale analysis that displays intercorrelations and shared variance among the study’s constructs. The cells on the diagonal (underlined) are the constructs’ composite reliability estimates. The values toward the bottom left corner are intercorrelations and the values toward the upper right corner (in bold) are shared variances. AVE values are listed in the far-right column. This scale analysis provides evidence for discriminant validity in that all of the intercorrelations are smaller than the composite reliability estimates (Campbell & Fiske, 1959). Further evidence of discriminant validity is demonstrated in that AVE values of

constructs exceed all combinations of shared variances of corresponding constructs (Straub, 1989).

TABLE 2: SCALE ANALYSIS RESULTS

	Strategic-driven motives	Values-driven motives	CSR authenticity	Organizational trust	Organizational citizenship behaviors (O)	AVE
1. Strategic-driven motives	<u>.86</u>	.00	.02	.02	.00	.67
2. Values-driven motives	.02	<u>.76</u>	.32	.15	.20	.51
3. CSR authenticity	-.14*	.57**	<u>.94</u>	.59	.44	.83
4. Organizational trust	-.14*	.39**	.77**	<u>.93</u>	.41	.61
5. Organizational citizenship behaviors (O)	-.02	.45**	.66**	.64**	<u>.93</u>	.67

Intercorrelations are included in the lower triangle of the matrix. Shared variance in % are included in the upper triangle of the matrix. Composite reliability scores are underlined and positioned in the diagonal.

Confirmatory Factor Analysis

Before conducting hypothesis testing, a confirmatory factor analysis (CFA) was performed. A five-factor CFA was conducted of the measurement model to assess whether the items sufficiently represented their intended latent constructs. The CFA produced the following fit indices: $\chi^2 = 611.86$ ($df = 242$) $p < .001$, RMSEA = .07, CFI = .94, SRMR = .05). With the exception of the chi-square statistic, which is often highly impacted by sample size (e.g., Bentler & Bonett, 1980; Kenny & McCoach, 2003), all fit indices indicated acceptable fit for the measurement model as outlined by Hu and Bentler (1999).

In order to alleviate concerns of common method variance (CMV), Harman's single-factor test and additional CFAs were performed (Podsakoff et al., 2003). For Harman's single-factor test, all items were put into exploratory factor analysis and the unrotated factor solution was examined to determine the number of factors necessary to account for the variance in the variables. Given that no single factor emerged, nor did one factor account for the majority of the variance, it was concluded that there was not a substantial amount of CMV present (e.g. Andersson & Bateman, 1997; Greene & Organ, 1973; Schriesheim, 1979). What was concerning and needed further exploration was the fact that only four factors with an eigenvalue greater than one emerged, as opposed to the expected five factors. In order to assess if the five-factor measurement model did indeed have the best fit, goodness-of-fit indices of alternative measurement models were compared using confirmatory factor analysis (CFA). As can be seen in Table 2, the fit indices worsened with each subsequent alternative model. In addition, the results of the chi-square difference tests showed that the five-factor model fit the data significantly better than any of the alternative models. These results indicate that the predicted five-factor model is the most parsimonious and best-fitting measurement model.

TABLE 3: CONFIRMATORY FACTOR ANALYSIS MODEL COMPARISONS

	5 Factor	4 Factor	4 Factor Alternative Model	3 Factor	2 Factor	1 Factor	$\Delta\chi^2(df)$	p
χ^2	611.86*	732.56*	915.95*	1329.86*	1664.27*	1981.62*		
df	242	246	246	249	251	252		
RMSEA	0.070	0.080	0.094	0.118	0.135	0.149		
CFI	0.935	0.915	0.883	0.811	0.753	0.697		
SRMR	0.052	0.060	0.059	0.079	0.096	0.102		
5 Factor vs. 4 Factor							120.70(4)	<0.001
5 Factor vs. 4 Factor Alternative Model							304.09(4)	<0.001
5 Factor vs. 3 Factor							718(7)	<0.001
5 Factor vs. 2 Factor							1052.41(9)	<0.001
5 Factor vs. 1 Factor							1369.76(10)	<0.001

5 Factor = Hypothesized model. 4 Factor = Strategic-driven motives, (Values-driven motives & CSRa collapsed), OT, OCBO. 4 Factor Alternative Model = Strategic-driven motives, Values-driven motives (CSRa & OT collapsed), OCBO. 3 Factor = Strategic-driven motives, (Values-driven motives & CSRa collapsed), (OT & OCBO collapsed). 2 Factor = (Strategic-driven motives, Values-driven motives & CSRa collapsed), (OT & OCBO collapsed). 1 Factor = All variables collapsed into a single factor.

Results

MPlus was used to test the hypotheses through structural equation modeling (SEM). Hayduk, Cummings, Boadu, Pazderka-Robinson, & Boulianne (2007) noted that the purpose of SEM is to *test theory* by specifying a model that represents predictions (hypotheses) between conceivable latent constructs that are measured with relevant observed variables (Kline, 2015). Given that all the constructs of interest are based on employee beliefs and are not directly observable, SEM is an appropriate analytic approach to the hypotheses and overall theory.

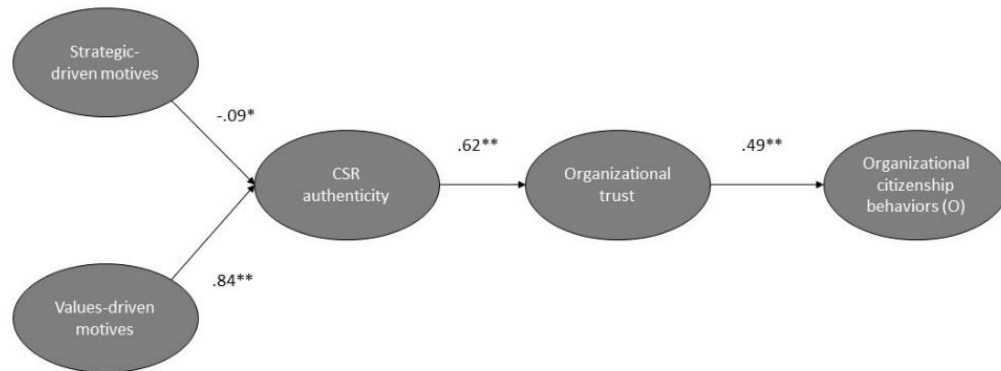
FIGURE 2: STRUCTURAL MODEL & DIRECT EFFECTS

Figure 2 represents the structural model used for testing the hypotheses. The structural model yielded acceptable fit indices: $\chi^2 = 1472.38$ ($df = 689$) $p < .01$, RMSEA = .06, CFI = .91, SRMR = .05). The same structural model was rerun utilizing parametric bootstrapping in order to assess the significance of the indirect causal effects (e.g., Preacher and Selig, 2012; Hancock & Liu, 2012). Mplus was used to simulate 2,000 replications in order to build confidence intervals around the indirect effects. Hypothesis testing results for the main effects are outlined in Figure 2, while hypothesis testing results related to indirect effects are outlined in Table 4.

Hypothesis 1, which predicted that perceived strategic-driven motives would positively contribute to CSRa perceptions, was not supported, and in fact, had a significant negative impact on CSRa perceptions ($b = -.09$, $p < .05$). Hypothesis 2 was supported, as perceived values-driven motives positively and significantly contributed to perceptions of CSRa ($b = .84$, $p < .01$). Hypothesis 3 was supported, such that CSRa positively and significantly contributed to employees' feelings of OT ($b = .80$, $p < .01$). Given that Hypothesis 1 was not supported, the subsequent mediation relationship outlined in Hypothesis 4A, which predicted CSRa as a mediator between strategic-driven motives and employees' feelings of OT, was not supported either. The testing of Hypothesis 4A showed that the confidence interval (CI) for the indirect effect included zero (indirect effect = $-.05$, 95% CI $[-.195, .027]$). Hypothesis 4B, on the other hand, was supported, as the effect was positive and the indirect CI excluded zero (indirect effect = $.52$, 95% CI $[.141, .896]$), which indicates that CSRa effectively mediates the relationship between values-driven motives and employees' feelings of OT. Hypothesis 5, a replication of previous research, found continued support, as OT positively and significantly contributed to employee engagement in OCBOs ($b = .49$, $p < .01$). Hypothesis 6A, which predicted that strategic-driven motives would positively influence OCBOs through CSRa and OT, was not supported, as the indirect CI included zero (indirect effect = $-.03$, 95% CI $[-.069, .016]$). Hypothesis 6B, which indicates that values-driven motives influence OCBOs through CSRa and OT, was supported, as the effect was positive and the indirect CI excluded zero (indirect effect = $.25$, 95% CI $[.008, .499]$).

TABLE 4: INDIRECT EFFECTS

Path	Path Coefficient	95% Confidence Interval	Result
Strategic-driven → CSRa → OT	-.05	-.195, .027	H4A Not supported
Values-driven → CSRa → OT	.52**	.141, .896	H4B Supported
Strategic-driven → CSRa → OT → OCBO	-.03	-.069, .016	H6A Not supported
Values-driven → CSRa → OT → OCBO	.25**	.008, .499	H6B Supported

DISCUSSION & CONCLUSION

Current CSR research has revealed a number of various beneficial employee-related outcomes that positively correlate with organizational CSR engagement, but more work is needed in terms of understanding the mechanisms through which those outcomes occur (Glavas, 2016). In addition to providing a better understanding of *why* these outcomes occur, these mechanisms may provide unique insight into aspects of an employee's work (Glavas, 2016) and the employee's relationship with the organization as a whole (De Roeck & Maon, 2016). Toward this end, this study investigated how CSRa might serve as an underlying mechanism between the attributions employees make for their organizations' CSR engagement, and employees' consequential attitudes and behaviors toward the organization.

Values-driven motives positively contribute to and advance the development of CSRa perceptions, and those authenticity perceptions mediate the relationship between values-driven motives and organizational trust, as well as employees' engagement in organizational citizenship behaviors. Given that CSR is multifaceted and can be driven and impacted by numerous stakeholder interests, perceived CSR motives assist employees in making sense of this complexity. Aguinis and Glavas (2019) define "sensemaking factors" as "variables that influence how individuals give meaning to ongoing experiences" (p. 2). Perceived CSR motives (specifically, values-driven motives) are important sensemaking factors in developing perceived CSRa judgements.

The significant mediation path clearly supports the idea that when employees attribute their organization's CSR to values-driven reasons, they are more likely to perceive the CSR efforts as authentic to the organization. This authentic CSR then fosters feelings of organizational trust. Organizational trust triggers a social exchange relationship between the employee and the organization, in which the employee feels compelled to reciprocate by displaying organizational citizenship behaviors.

The significant negative relationship that was found between perceived strategic-driven motives and CSRa might be explained under the context of value violation and sacred values (Ruttan, 2017). Sacred values are sets of values that individuals are unwilling to compromise, particularly in exchange for more material values, such as profitability or efficiency (Tetlock, 2002; 2003). Common examples of sacred values include environmental protection, equality, fairness, honor, patriotism, and individual health and well-being (Baron & Spranca, 1997; Tetlock, 2003). Tradeoffs, or value violations, between sacred and secular values can vary in degree. Tetlock, Kristel, Elson, Green, and Lerner (2000) described taboo tradeoffs, in which sacred values are clearly sacrificed in favor of secular values (e.g., a hospital opting to save

\$500,000 over saving the life of a young child through organ transplant). These taboo tradeoffs are typically met with moral outrage and a desire to punish the value violator (Ginges & Atran, 2009; Tetlock et al., 2000). Ruttan (2017) detailed and examined a less severe (and likely more common form of) tradeoff, defined as *instrumental use of sacred values*, whereby the sacred value (e.g., CSR) is used for the purposes of self-interest (e.g., strategic-driven purposes) but is not explicitly sacrificed or traded off in the process. Ruttan (2017) argued that when sacred values are used for instrumental purposes, perceivers are likely to hold them less sacred. Extrapolating from Ruttan's (2017) logic, it appears that employees perceive CSR to be less authentic when utilized for strategic-driven purposes.

Theoretical Contributions

This study makes four important contributions that provide a richer picture of the CSR authenticity construct and its impact on outcomes that are important in the employee-organization relationship. McShane and Cunningham (2012) explained that "the extent to which the CSR program is viewed as authentic influences the organizational benefits associated with the CSR program" (p. 84). Those benefits have been shown to include positive employee-organization relations (McShane & Cunningham, 2012). Firstly, this study makes a contribution by identifying specific aspects (i.e., feelings of organizational trust and employee engagement in organizational citizenship behaviors) of the employee-organization relationship that are enriched through fostering CSR that is perceived as authentic in the minds of employees.

Secondly, this study contributes by filling a gap in the micro-CSR literature regarding the perspective of incumbent employees. Glavas (2016) explained: "One of the major gaps is that despite the explosion of research in micro-CSR, little is known about how employees experience CSR. Of the 166 publications that were reviewed, only 28 (or about 1/6) studied incumbent employees and their experience of CSR. Almost as many studies focused on prospective employees (18) as on incumbent employees (28). Although we can learn a lot from prospective employees, more research is needed on incumbent employees" (p. 7). When considering the nature of social exchange relationships, this is a particularly important differentiating factor, as current versus prospective employees will have different expectations regarding the give-and-take relationship they have with the organization. In all likelihood, prospective employees are likely to make motive attributions and authenticity judgements that align closer to that of consumers or other external stakeholders. This is important because it has been suggested that their different vantage points (that of the internal vs. external stakeholder) may inform their attributions (Donia & Sirsly, 2016), and thusly, their views of CSR authenticity. Studies that focus on incumbent employees, such as this one, help to propel the view of CSR beyond the traditional external marketing/communication tool perspective, as they help us to better understand the relationship with an organization's 'internal customers' (i.e., incumbent employees) (Gond, El-Akremiti, Igalens, & Swaen, 2010). Authentic CSR perceptions appear to bolster positive employee-organizational relationships. Therefore, this study contributes to a more nuanced understanding of employee-organization relationships by suggesting that alignment between CSR efforts and organizations' altruistic values can provide an additional way to strengthen the relationship that employees have with their current organization.

Thirdly, by examining employees' CSRa perceptions, as well as motives attributed to CSR efforts, this study contributes to a better understanding of authenticity judgements and the relatively understudied area of CSR evaluations. In a recent review of the micro-CSR literature, Gond, El Akremiti, Swaen, & Babu (2017) pointed out that existing research has largely focused

on individual *reactions* to CSR, but very little research has examined individual *evaluations* of CSR. The authors described *evaluations* as “the cognitive and affective processes by which people gather and organize information related to organizations’ CSR initiatives to form judgements about the initiatives, experience emotions resulting from their perceptions, and also attribute reasons to their origin” (p. 231). Gond et al. (2017) explained that exploring these CSR evaluation processes might provide increased understanding into how individuals experience CSR. It is critical that we understand individual CSR experiences because they likely influence when and how CSR produces specific outcomes (Gond et al., 2017). Basu and Palazzo (2008) advised scholars to empirically test CSR perceptions, attributions, and sensemaking processes in order to further our knowledge about the cognitive processes through which employees form their CSR judgements.

Fourth and finally, this study contributes to the micro-CSR literature by providing a more inclusive model which incorporates multiple mechanisms that tie employees’ attributions about CSR motives and perceptions of CSR authenticity to their subsequent attitudes and behaviors toward the organization. Approaches to understanding CSR outcomes have often been simplistic in nature in that scholars have sought to connect CSR to positive employee outcomes without investigating the *how* and *why* (Glavas, 2016). When researchers have attempted to address the black box issue of how and why CSR leads to outcomes, they have typically considered only a single mechanism (Glavas, 2016). A consequence of this trend is that the study of underlying CSR mechanisms has remained fragmented (Gond et al., 2017). The findings of this study suggest that when CSR is perceived to be pursued for values-based reasons in an authentic way, it can instill trust and trigger a social exchange relationship between the employee and the organization.

Managerial Implications

These research findings have implications for practitioners as well. When deciding what CSR efforts to embrace, organizations should select CSR programs that closely align with the organization’s true self. This implies that CSR is not “one size fits all.” It is recommended that before jumping into any given CSR program or effort, management should closely examine whether the effort makes sense with who the organization is. A key challenge in successfully implementing CSR practices is managing stakeholder skepticism (Du, Bhattacharya, & Sen, 2010). In order to effectively implement CSR efforts, organizations may need to work from the inside out. Management should adopt a consultative approach to implementing CSR by discussing proposed efforts with employees first. By engendering in employees a perception that CSR efforts are in line with who the organization is and what it values, negative and unintended consequences of CSR efforts—e.g., employee skepticism or perceptions that CSR is a waste of organizational resources—may be supplanted with positive responses from employees in the form of increased organizational trust and organizational citizenship behaviors. By doing so, organizations are more likely to enjoy the rewards of positive employee attitudes and behaviors.

This study found that employees tend to perceive their organization’s CSR efforts as authentic when they feel that the organization is pursuing those efforts for values-driven, and not strategic-driven, reasons. Therefore, when promoting CSR engagement, organizations should emphasize their desire to be a good corporate citizen in their internal branding and communications to employees. This serves to strengthen CSRa perceptions, thereby improving employee-organization relations, potentially leading to employees serving as “CSR ambassadors.” Boosterism, a well-known OCB, is displayed when employees represent the

organization in a positive light when away from the office and out in public (Coleman & Boreman, 2000). Employees who view CSR as authentic are more likely to engage in behaviors such as boosterism, which would inform external stakeholders of the positive strides the organization is making in terms of CSR. This would allow for external stakeholders to learn about the organization's CSR efforts through employees' positive word of mouth. It is obvious that most organizations would like to enjoy the instrumental benefits of CSR (i.e., improved reputation, increase in customers), and employees who maintain authentic CSR perceptions could be critical in helping organizations realize those highly-desired outcomes.

Limitations and Future Research

In terms of limitations, all the data were collected via self-report. Given that the study focused on individuals' perceptions, as well as their consequential attitudes and behaviors, the use of self-report data was most appropriate. Yet, relying solely on self-report data does bring up potential issues of common method bias (CMB). In an attempt to mitigate potential biasing issues, this study utilized temporal separation between the collection of predictor variable data and the collection of criterion variable data (Podsakoff et al., 2003). Additional analyses were also conducted in order to alleviate concerns regarding CMB.

Self-report data collection can also be challenging in terms of examining attributional processes (Lord & Smith, 1983; Wong & Weiner, 1981). Lord and Smith (1983) explained that simply by way of asking participants attribution-related questions, researchers are potentially priming participants to engage in attributional processes that they might not have otherwise engaged in. Therefore, future CSR attribution research would be enhanced through the employment of additional methodological approaches. These approaches may include probing for attributions through open-ended questions rather than rating causal explanations provided by the researcher (Lord & Smith, 1983) or collecting attribution data as CSR is initially introduced into an organization, allowing researchers to collect "real time" data of employees' attributional and sensemaking processes.

The data for this study were collected over a relatively short, two-week time period. Employees' views regarding their organizations' reasons for engaging in CSR, as well as their CSRa evaluations and subsequent attitudes and behaviors, likely evolved over time. Therefore, longitudinal studies designed to follow how perceived CSR motives and authenticity evaluations change over time, as well as what contextual and environmental factors (e.g., political environment, industries, organizational leadership) might contribute to this evolution, would likely be fruitful avenues for future research.

Although contrary to what was predicted in the model, the significant negative effect of strategic-driven motives on CSRa was interesting, especially because this contrasts with responses that have been reported regarding *external stakeholders'* perceptions. External stakeholders, namely consumers, typically expect and respond positively to perceived strategic-driven motives (e.g., Ellen et al. 2006; Groza, Pronschinske, & Walker, 2011; Kim & Lee, 2012). Thus, it appears that consumers expect organizations to "serve two masters" (Ellen et. al, 2006) while employees, as organizational insiders, may hold their organizations to a more altruistic standard. This unexpected finding brings up interesting questions for the focus of future research. Marketing research tends to endorse the alignment of internal and external CSR branding (Aydon Simmons, 2009), but these results indicate that subtle differences may exist between consumer and employee expectations, interpretations, and reactions to CSR.

This study takes an approach to examining CSRa similar to that of many current justice researchers. Recent advances in the justice literature indicate that employees tend to form global perspectives of their organization's overall level of fairness (i.e., perceived overall justice; Ambrose & Schminke, 2009; Bobocel, 2013), as opposed to focusing on specific facets of justice (i.e., distributive, procedural, informational, and/or interpersonal forms of justice). In the same vein, this study examined employees' global assessments regarding the authentic nature of their organizations' CSR, as opposed to focusing on the authenticity of individual CSR efforts or programs. While studying employee authenticity perceptions regarding specific CSR efforts might prove fruitful to our overall understanding of CSRa and its impact, this is an area for future research and beyond the scope and aims of this study.

Conclusion

In conclusion, it is clear that the perceived *reasons why* an organization engages in CSR can contribute to (or hinder) the development of CSRa perceptions. If organizations are to utilize CSR in their relationship building with key stakeholders, namely employees, it is imperative that employees perceive those efforts as being authentic and true to the organization's self. This research provides evidence that perceived values-driven, but not strategic-driven, motives can contribute to a perception of an organization's authentic CSR efforts within the minds of employees. Those authenticity perceptions serve to bolster feelings of trust in the organization, which reinforce positive social exchange relationships between employees and their organizations. Employees will feel obliged to maintain the positive social exchange relationship through exhibiting organizational citizenship behaviors directed towards the organization. This research not only sheds light on how CSRa can impact employee-organization relations, but it also provides initial evidence on how employees' expectations may vary in terms of CSR as compared to that of other stakeholder groups.

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MANAGERIAL PERCEPTIONS OF STEM WORKFORCE SUPPLY AND DEMAND ISSUES

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ABSTRACT

We investigated managerial perceptions of the STEM workforce by surveying over 1,000 managers and executives across five southeastern states that comprise the Tennessee Valley Corridor. We explored their views on the supply of STEM workers in their states, their predictions regarding the demand for STEM workers 12 months out, and their views on how their organizations would be impacted if they could not fill open positions in the short- and long-term. Using open-ended items and textual analysis, we studied the managers' and executives' views on the challenges affecting their states' supply of STEM workers and on the significant challenges affecting their organizations' recruitment of STEM workers. Lastly, we considered their assessments of their organizations' human resource management practices that relate to securing and maintaining a STEM workforce. Results indicate that our managers and executives are challenged by sustaining a STEM pipeline in their states, including the educational components and the economic factors, such as competitive wages. Certain industries reflected stronger results across the empirical questions. Other implications for sustaining a quality STEM workforce are presented.

INTRODUCTION

A recent *Harvard Business Review* article stated, "Hiring talent remains the number one concern of CEOs" and "...chief executives view the unavailability of talent and skills as the biggest threat to their business" (Cappelli, 2019, p. 50). Given how important securing and maintaining a talented workforce is, it is no surprise for organizations to consider their workforces to be their "most important tangible asset" (Louch, 2014, para. 1). Organizational capabilities and constraints, labor market conditions, time, and other resource limitations make the staffing process challenging for any organization. When organizations seek employees with highly specialized, valuable skills, like those represented by science, technology, engineering, and math (STEM) backgrounds, they may face even more challenges sustaining their workforces.

Depending on where one looks, articles highlighting the shortages in the STEM workforce, as well as publications declaring those shortages to be myths, are readily available. With news headlines such as "STEM Worker Shortage at Crisis, Survey Shows" (Radu, 2018) in the *U.S. News & World Report* and "America's High-Tech STEM Crisis" (Herman, 2018) in *Forbes*, one might assume that shortages persist. However, some scholars argue that the

shortages are myths (e.g., Teitelbaum, 2014) or that they depend on the industry or sector (Camilli & Hira, 2019; Xue & Larson, 2015). To add another twist, some scholars and practitioners propose that perceived shortages are due to the speed with which technology is changing (Deming & Noray, 2018; IBM, 2019), immigration issues (Garg, 2019), or the skills gap in U.S. workers, who need retraining (IBM, 2019). As a result, management researchers and practitioners alike may struggle to understand the status of the STEM workforce in the U.S.

The purpose of this study is to add to the literature by exploring managerial perspectives of the status of the STEM workforce and their organizations' abilities to address any existing and predicted future gaps between supply and demand for STEM workers. We sought insights from managers and executives regarding what their organizations are doing to address the supply and demand challenges they are facing. The next section reviews academic literature and the theoretical foundation for focusing on STEM workers. Research questions, data and methodology, and results and discussion sections follow. Lastly, the implications, conclusions, and future research are discussed.

LITERATURE SUPPORT

Based on their 2017 CEO survey, PricewaterhouseCoopers reported that 53% of U.S. CEOs indicated that STEM skills were very important, and 12% felt that STEM skills were very difficult to recruit (PwC, 2017). Even though some organizational leaders recognize the uniqueness and value of STEM workers along with the challenges of sustaining the STEM workforce, academic research on the STEM workforce in the areas of business and management is scarce. An advanced Google Scholar search reveals around 300 sources when searching for the phrases "science, technology, engineering," and "United States" with business or management in the publication name and with some human resource management phrase in the search (e.g., staffing, human resource, and recruit). Most of the search results were related to gender (e.g., Servon & Visser, 2011), education (e.g., Dynarski, Hyman, and Schanzenbach, 2013), and global efforts (e.g., Hunt, 2014; Lewin & Zhong, 2013).

However, three business/management sources were found that examined the STEM workforce. Christo-Baker, Sindone, and Roper (2017) reported on the skills gap in the seven-county area known as Northwest Indiana and highlighted the shortages of workers with requisite skills, particularly in the largest economic contributors: utilities, manufacturing, construction, and healthcare, all of which rely heavily on STEM workers. Arik and Geho (2017b) surveyed 200 human resource professionals to explore their recruitment and retention strategies for STEM workers. They found that organizations preferred investing in their own employees and recruiting as their top two strategic solutions for STEM skills shortages. Arik and Geho (2017a) used the resource-based view theory to examine the role of the STEM workforce as a source of competitive advantage for organizations and for a geographic region, the state of Tennessee. They concluded that there is an economic impact from a STEM skills gap and that a skilled STEM workforce should be considered a source of sustainable competitive advantage.

We also rely on human capital theory (Becker, 1964) and resource-based view (Barney, 1991) as the foundations for this study. STEM workers clearly have strategic value to their

organizations, and this capital increases with experience and additional training (Becker & Huselid, 1998). Their specialized knowledge, skills, and learned capabilities affect organizational performance (Maley, 2019) by producing the results that organizations rely on for sustainable competitive advantage.

RESEARCH QUESTIONS

Managers usually have the ultimate say in staffing decisions for their areas, and their direct reports reflect approximately 80% of an organization's workforce (Hassan, 2011). We surveyed managers, CEOs, CFOs, presidents, and vice-presidents to explore their perceptions of the challenges related to the supply and demand of STEM workers. The data and methodology are described in the next section. Our research questions included:

1. What changes do you predict in your state's supply and demand for STEM workers?
2. What are the challenges affecting the general supply of STEM workers in your state?
3. How effectively are your human resource management practices securing and maintaining your STEM workforce?

DATA AND METHODOLOGY

We addressed these research questions by studying data that was collected as part of a larger project studying the status of the STEM workforce in five southeastern states: Alabama, Kentucky, North Carolina, Tennessee, and Virginia. These five states make up the Tennessee Valley Corridor (TVC), which is an economic development organization that strives to promote federal science and technology vocations. Based on this emphasis of science and technology, TVC was an appropriate population to study managerial perceptions of the STEM workforce.

As shown in Table 1, STEM workers make up 13.8% of the total workforce in the TVC as of 2017 (Census.gov). For a frame of reference, Massachusetts had the highest percentage of STEM workers in the U.S. at 17.9%. Between 2018-2028, STEM occupations are expected to grow 8.8% in the U.S. compared to 5.0% for non-STEM occupations (BLS, 2020). Educational attainment in STEM fields as a percentage of all higher education degrees was over 26% in all TVC states in 2018, but only one state (North Carolina) exceeded the national average (NSB, 2020). Further, every state exceeded the national average in the percentage of disposable personal income undergraduate students were paying at public, 4-year institutions in 2018 (NSB, 2020).

Table 1 TVC WORKFORCE, EDUCATION, AND FUNDING SNAPSHOT						
	STEM WORK- FORCE 2017 (%)	BACHELOR'S DEGREES IN SCIENCE AND ENGINEERING CONFERRED PER 1,000 INDIVIDUALS 18-24 YEARS OLD 2018	SCIENCE AND ENGINEERING DEGREES AS PERCENTAGE OF HIGHER EDUCATION DEGREES CONFERRED 2018 (%)	POSTSECONDARY DEGREE HOLDERS AMONG INDIVIDUALS 25-44 YEARS OLD 2018 (%)	AVERAGE UNDERGRADUATE CHARGE AT PUBLIC 4-YEAR INSTITUTION AS PERCENTAGE OF DISPOSABLE PERSONAL INCOME 2018 (%)	ACADEMIC R&D PER \$1,000 OF GROSS DOMESTIC PRODUCT 2018 (\$)
Alabama	12.9	20.55	26.0	37.8	51.5	4.83
Kentucky	12.3	16.23	26.6	39.2	54.5	2.86
North Carolina	13.9	20.82	34.6	45.9	42.2	5.66
Tennessee	13.2	16.45	26.1	39.2	44.2	3.54
Virginia	16.5	26.85	32.6	51.7	46.3	3.15
U.S.	13.8	22.99	33.0	45.6	41.7	NA

Source: American Community Survey, Census Bureau, BLS, and NSB

Data were collected over a three-month period using a Qualtrics panel. Respondents include 1,008 managers and executives from manufacturing or professional and business service organizations with 50+ employees across the TVC. Descriptive statistics were used to analyze the quantitative answers, while MineMyText was used to conduct a textual analysis of the open-ended items. The MineMyText application identifies probabilistic thematic coverage by clustering unstructured text into thematic categories using the Latent Dirichlet Allocation (LDA) algorithm. This tool is fully automated and removes the chance of researcher bias impacting textual analysis. MineMyText allows us to discern probabilistic topics that are entirely data driven.

RESULTS AND DISCUSSION

Changes in State's Supply and Demand

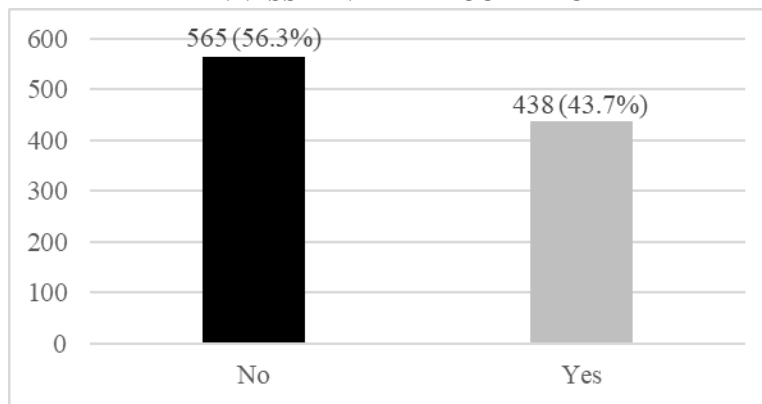
To gain a better understanding of the respondents' views on the supply and demand of STEM workers in their states, we asked three questions. First, we asked if there were enough quality/competitive individuals being produced for STEM jobs in their respective states – yes or no. Next, we asked for respondents' predictions regarding the number of STEM employees they would have in the next 12 months – would that number decrease, remain the same, or increase? Lastly, we asked how their organizations would be impacted if they are unable to fill open positions in the 1-10-year range.

As Figure 1 indicates, 565 respondents, or 56.3%, indicated that no, there are not enough quality workers being produced for STEM occupations in their states. This finding indicates that the STEM pipeline – families, educators, community, industry, and government – still has an important role to play in sustaining the STEM workforce.

A number of factors could explain why a majority of managers and executives perceive an insufficient supply of quality/competitive individuals being produced in their states. Human

resource management (HRM) metrics, such as time to hire, new employee performance, turnover, and salary levels compared to market rates, would all be of concern to managers and executives. If an organization is unable to attract quality applicants for open positions and is unable to hire employees who can perform adequately after the training period, then managers and executives would be concerned, especially if the organization is paying salaries that are competitive in the market. If these managers and executives are also aware of data and trends regarding the workforce in their regions, such as using economic reports from the chambers of commerce in their areas, then they should be well-equipped to assess the supply of quality/competitive STEM workers in their regions.

Figure 1
SUFFICIENT SUPPLY OF QUALITY STEM WORKERS
TENNESSEE VALLEY CORRIDOR



As shown in Figure 2, the proportion of different responses between states varies greatly, which indicates that certain states need more assistance than others with the STEM pipeline. Respondents in Kentucky and Alabama reported the highest numbers of no responses, whereas respondents in Tennessee and North Carolina reported the highest number of yes responses.

Figure 2
SUFFICIENT SUPPLY OF QUALITY STEM WORKERS – STATE LEVEL

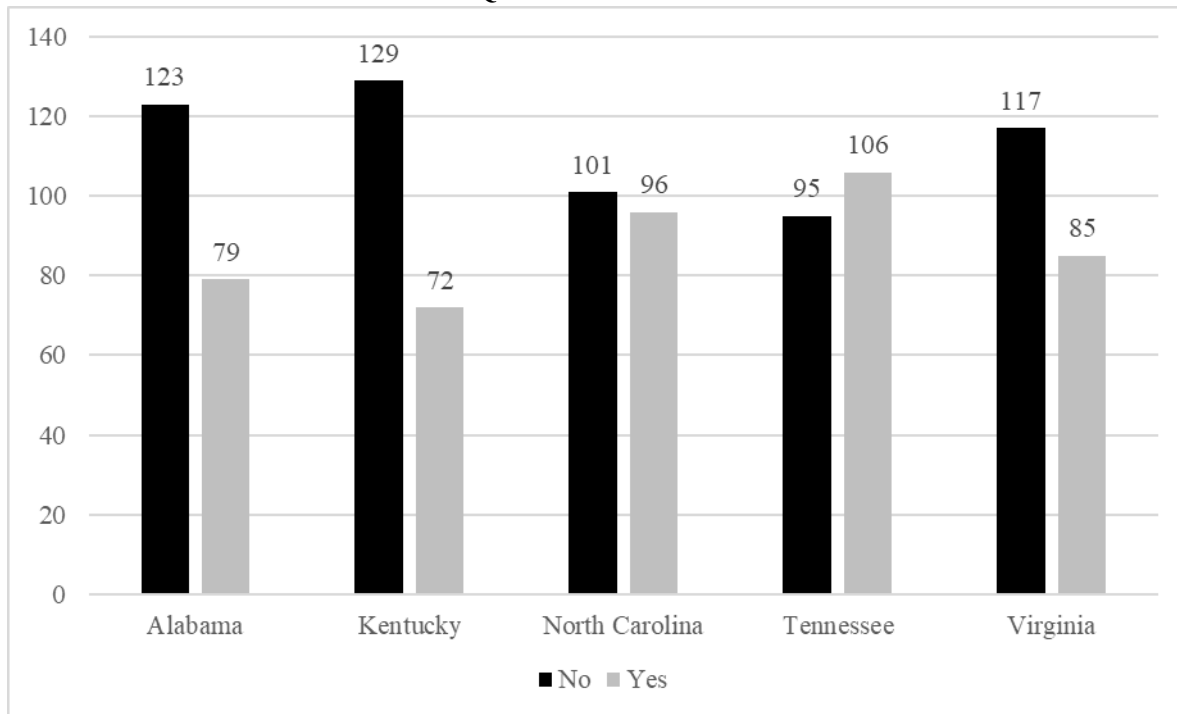


Table 2 provides the percentages of no and yes responses for each state regarding the sufficiency of quality workers being produced for STEM occupations by state. Respondents in all of the TVC states except Tennessee indicated that the quality of the supply of STEM workers was not sufficient. Kentucky had the highest percentage of no responses (64.2%) followed by Alabama (60.9%), indicating that those states may be experiencing more significant problems with their STEM pipeline than the other TVC states.

Table 2 SUFFICIENT SUPPLY OF QUALITY STEM WORKERS PERCENTAGE BY STATE		
STATE	NO	YES
Alabama	60.9%	39.1%
Kentucky	64.2%	35.8%
North Carolina	51.3%	48.7%
Tennessee	47.3%	52.7%
Virginia	57.9%	42.1%

Table 3 provides the responses by industry. The industry-level data shared throughout this paper describes collective responses from a larger study, which included the TVC states

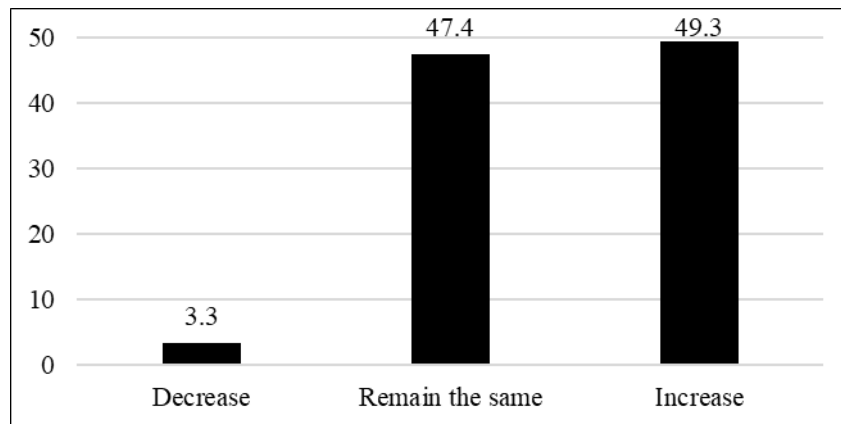
addressed in the present study. Managers and executives in two industries appear to perceive the availability of quality/competitive individuals being produced for STEM jobs as sufficient: energy technologies and transportation, logistics, and distribution services. The industry with the highest perceived shortage in available quality/competitive workers for STEM jobs was the state and local government. This result is not surprising, given that most state and local government workers believe they could earn more by working in the private sector (Bond & Kenneally, 2019). STEM jobs, in particular, are likely to be compensated more competitively in for-profit organizations.

Table 3
SUFFICIENT SUPPLY OF QUALITY STEM WORKERS
BY INDUSTRY

INDUSTRY	NO	YES	NO/YES RATIO	% POINT DIFFERENCE (NO-YES)
Advanced Manufacturing	94	75	1.25	11.24%
Automotive	31	21	1.48	19.23%
Chemical Products and Plastics	18	10	1.80	28.57%
Education	45	18	2.50	42.86%
Energy Technologies	20	31	0.65	-21.57%
Healthcare	133	71	1.87	30.39%
Other (e.g., defense, financial services, food, information technology, and other manufacturing)	62	41	1.51	20.39%
Professional and Business Services	232	230	1.01	0.43%
State and Local Government	28	6	4.67	64.71%
Transportation, Logistics, and Distribution Services	17	23	0.74	-15.00%
GRAND TOTAL	680	526	1.29	12.77%

Next, we asked respondents to predict how the levels of STEM employees in their states would change during the next 12 months – decrease, remain the same, or increase. As shown in Figure 3, a slight majority of respondents (49.3%) indicated that their number of employees would increase while 47.4% of respondents reported that their numbers would remain the same. This data tells us that some organizations expect to need more STEM workers while a similar proportion of organizations expects their employment levels to stay the same.

Figure 3
PROJECTED NUMBER OF STEM EMPLOYEES
TENNESSEE VALLEY CORRIDOR



As shown in Table 4, a substantial majority of respondents across all five states report that the number of STEM workers they expect to have 12 months from now will remain the same or increase. Tennessee had the largest percentage of respondents predicting an increase (58.2%), while Kentucky had the lowest percentage of respondents predicting an increase (42.3%).

Table 4 PROJECTED NUMBER OF STEM EMPLOYEES BY STATE			
STATE	DECREASE	REMAIN THE SAME	INCREASE
Alabama	5.45	43.07	51.49
Kentucky	3.98	53.73	42.29
North Carolina	2.97	46.53	50.50
Tennessee	1.99	39.80	58.21
Virginia	1.98	53.96	44.06

We can see in Table 5 that seven of ten industries expect the number of STEM employees to increase while three of ten industries expect the number of STEM workers to stay the same. Transportation, logistics, and distribution services was the strongest number (67.5%) to predict the number of STEM employees would stay the same while automotive, professional and business services, and energy technology industries were the strongest numbers (around 52.9-53.9%) to predict an increase in the number of STEM employees.

Table 5 PROJECTED NUMBER OF STEM EMPLOYEES BY INDUSTRY						
INDUSTRY	DECREASE		INCREASE		REMAIN THE SAME	
	Number	%	Number	%	Number	%
Advanced Manufacturing	9	5.33%	81	47.93%	79	46.75%
Automotive	3	5.77%	28	53.85%	21	40.38%
Chemical Products and Plastics	2	7.14%	14	50.00%	12	42.86%
Education	3	4.76%	30	47.62%	30	47.62%
Energy Technologies	0	0.00%	27	52.94%	24	47.06%
Healthcare	9	4.41%	98	48.04%	97	47.55%
Other (e.g., defense, financial services, food, information technology, and other manufacturing)	3	2.91%	51	49.51%	49	47.57%
Professional and Business Services	11	2.38%	247	53.46%	204	44.16%
State and Local Government	2	5.88%	15	44.12%	17	50.00%
Transportation, Logistics, and Distribution Services	0	0.00%	13	32.50%	27	67.50%
GRAND TOTAL	42	3.48%	604	50.08%	560	46.43%

To probe further, we asked respondents how their organizations would be impacted if they are unable to fill open positions in the future. As shown in Figure 4, nearly 52% responded that their organizations would experience a negative impact, while 13.5% indicated they were unsure. Unexpectedly, 22% of respondents indicated that the impact of being unable to fill open positions would be positive. Finally, 12.6% reported that there would be no impact from being unable to fill open positions.

Figure 4
IMPACT OF BEING UNABLE TO FILL OPEN POSITIONS IN THE FUTURE
TENNESSEE VALLEY CORRIDOR

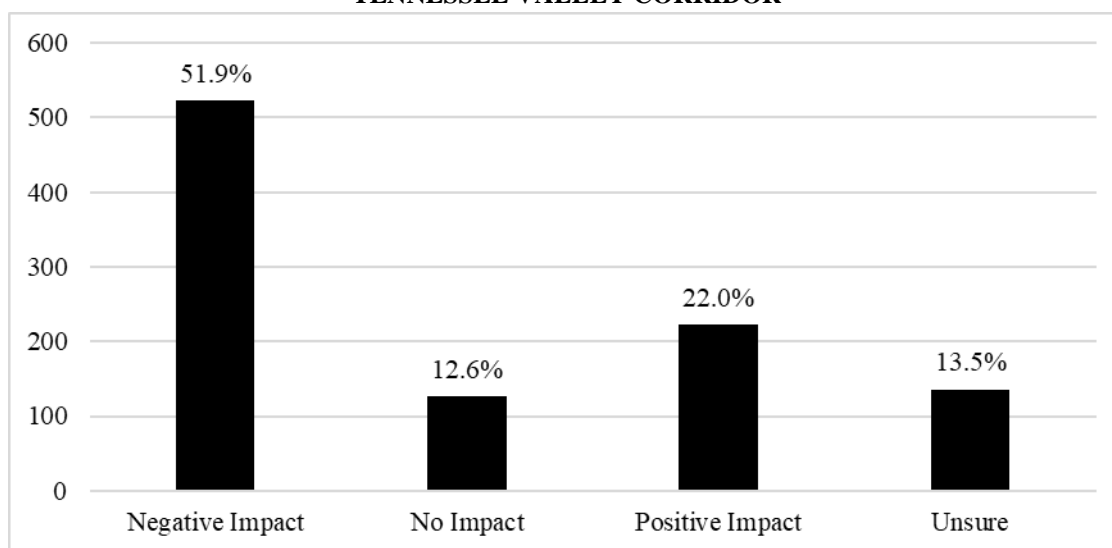


Table 6 provides detailed state responses for each level of impact. The high number of positive impact answers could reflect respondents misreading the question, which stated: How will your business be impacted if you are unable to fill these jobs? However, it is possible that respondents were extrapolating that unfilled jobs would indicate growth and improved organizational performance, hence a good or positive problem. We would need to investigate the individual responses to determine if there are other survey indicators that might explain this result, such as research and development budgets.

Table 6 IMPACT OF BEING UNABLE TO FILL OPEN POSITIONS IN THE FUTURE BY STATE							
IMPACT	ALABAMA	KENTUCKY	NORTH CAROLINA	TENNESSEE	VIRGINIA	TOTAL	%
Negative Impact	94	112	105	99	113	523	51.9
No Impact	26	24	23	26	28	127	12.6
Positive Impact	52	41	42	49	38	222	22.0
Unsure	30	24	32	27	23	136	13.5
GRAND TOTAL	202	201	202	201	202	1008	100

When we consider the respondents' perspectives on impact by industry, as shown in Table 7, we see that the three most negatively impacted industries are education, healthcare, and chemical products and plastics. Energy technologies and transportation, logistics, and distribution services projected the lowest negative impact, which is aligned with managers and executives in those industries reporting that there is a sufficient supply of quality/competitive STEM workers (as previously shown in Table 2).

Table 7 IMPACT OF BEING UNABLE TO FILL OPEN POSITIONS IN THE FUTURE BY STATE					
INDUSTRY	NEGATIVE IMPACT	NO IMPACT	POSITIVE IMPACT	UNSURE	NEGATIVE/ POSITIVE IMPACT RATIO
Advanced Manufacturing	84	20	44	21	1.91
Automotive	28	5	12	7	2.33
Chemical Products and Plastics	17	1	6	4	2.83
Education	42	5	8	8	5.25
Energy Technologies	20	9	18	4	1.11
Healthcare	103	23	35	43	2.94
Other (e.g., defense, financial services, food, information technology, and other manufacturing)	44	20	22	17	2.00
Professional and Business Services	243	68	101	50	2.41
State and Local Government	22	1	10	1	2.20
Transportation, Logistics, and Distribution Services	17	4	14	5	1.21
GRAND TOTAL	620	156	270	160	2.30

Challenges Affecting the Supply of STEM Workers

To explore the respondents' views on the challenges associated with their states' supply of STEM workers, we asked two open-ended questions. First, we asked a broad question: What are the major challenges associated with the factors affecting the supply of a STEM workforce? Second, we asked a more specific question: What are the major challenges your business faces in recruiting a STEM workforce? MineMyText was used to identify the themes found in this qualitative data.

As shown in Table 8, respondents indicated that the major factors affecting the supply of a STEM workforce were a lack of quality education, a lack of interest in STEM and availability, STEM jobs often require experience, and a lack of resources (funding and support) to provide high-quality STEM workers. These factors highlight the important contributions that a strong STEM pipeline plays for communities, regions, and states. Families, educators, community, industry, and the government may strategically address these factors to sustain the supply of quality STEM workers in their states.

Table 8 TOPIC MODELING RESULTS MAJOR FACTORS AFFECTING THE SUPPLY OF STEM WORKFORCE			
TOPIC ID	FIVE MOST FREQUENTLY USED WORDS	EXEMPLARY CONTENT/QUOTES	INTERPRETATION OF THE TOPIC
1	Train Teacher Skill Information Field	"Science and math are taught in a mediocre way to the lowest common denominator of learning. We need to teach high potential students at a high potential level."	Lack of quality education
2	Interest Availability Work Pay Employee	"There is a lack of interest. Also, there is an issue of availability of STEM and encouragement in poorer areas."	Lack of interest and availability
3	Job School Opportunity Quality Qualify	"Companies require experience way too often rather than hiring fresh outs and educating employees with on the job training."	Jobs often require experienced STEM workers
4	Fund Cost Resource Support High	"There are not sufficient resources to support supply of STEM workforce requirements."	Lack of resources to provide high-quality STEM workers

As shown in Table 9, respondents indicated that the major challenges they faced in recruiting a STEM workforce included the supply is not meeting demand, a lack of skilled STEM workers, and the ability to pay competitive wages. These challenges are similar to the recruiting hurdles an organization would face with any occupation that is experiencing high demand. Organizations that are unable to pay competitive wages may have no choice but to hire lesser-qualified workers and provide them with any additional training that is needed to bring their skills to the necessary levels. Otherwise, these organizations' ability to compete effectively will decrease over time.

Table 9 TOPIC MODELING RESULTS MAJOR CHALLENGES IN RECRUITING YOUR STEM WORKFORCE			
TOPIC ID	FIVE MOST FREQUENTLY USED WORDS	EXEMPLARY CONTENT/QUOTES	INTERPRETATION OF THE TOPIC
1	Find Employee Pay Applicant Availability	"Recruiting is difficult as there aren't enough people to fill the number of jobs being offered to the market."	Supply not meeting demand
2	Qualify Fund Candidate Talent Experience	"There are not enough skilled qualified STEM candidates to hire."	Lack of skilled STEM workers
3	Competitive Work Salary Skill Wage	"We are not able to compete with the private sector. We need to provide competitive wages and good benefits in a high demand career field."	Ability to pay competitive wages

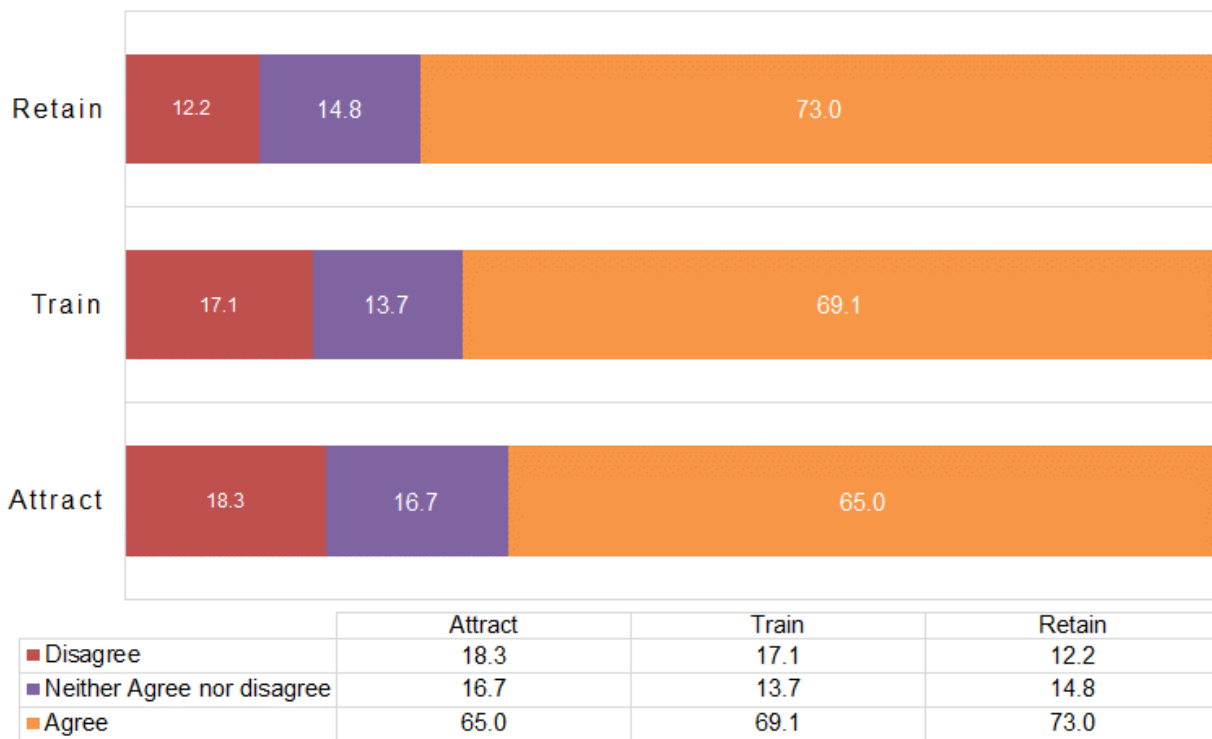
Effectiveness of Human Resource Management Practices

To examine the respondents' perceptions of the effectiveness of their organizations' human resource management (HRM) practices for securing and maintaining their STEM workforce, we asked respondents to rate three questions using a 7-point Likert scale. The three items included:

- A. My organization has the resources to attract highly skilled STEM applicants. (Attract)
- B. My organization has the resources to train new hires who may be underqualified. (Train)
- C. My organization works to retain employees in STEM jobs. (Retain)

As shown in Figure 5, more respondents rated their organization's efforts to *retain* employees more favorably than both the resources to *attract* highly skilled applicants and *train* underqualified new hires. For the retain item, 19.5% of respondents strongly agreed compared to the 14.1% and 14.8% that strongly agreed with the attract and train items, respectively. When looking at the three levels of agreement versus the three levels of disagreement, the results were similar. For the retain item, 73.0% of respondents agreed, while 12.2% disagreed. For the train item, 69.2% of respondents agreed, while 17.2% disagreed. For the attract item, 65.0% of respondents agreed, while 18.4% disagreed. Thus, respondents viewed their organization's resources to attract skilled STEM applicants less favorably than their resources to train underqualified new hires, and both the attract and train items were rated less favorably than the retain item.

Figure 5
EFFECTIVENESS OF HUMAN RESOURCE MANAGEMENT PRACTICES
RESOURCES TO ATTRACT AND TRAIN
AND EFFORTS TO RETAIN STEM WORKERS



To examine these ratings by industry, we created two categories out of the six agree/disagree variations and left the neutral item, neither agree nor disagree. When we review the respondents' assessment of their organization's resources to *attract* highly skilled STEM applicants by industry, as shown in Table 10, we see that respondents in state and local government report the lowest levels of agreement (50.0%) and the highest levels of disagreement (35.3%). This result is not surprising given that workers in this industry believe the private sector

pays more competitively (Bond & Kenneally, 2019), and salary is an integral part of attracting applicants. Conversely, respondents in the energy technologies industry reported the strongest levels of agreement (74.5%) and the lowest levels of disagreement (5.9%). This result mirrors those presented in Table 2 when we asked respondents about their state's ability to produce enough quality/competitive STEM workers, and the energy technologies industry had the strongest positive assessment of their state's supply.

Table 10 RESOURCES TO ATTRACT HIGHLY SKILLED STEM APPLICANTS						
INDUSTRY	AGREE	%	DISAGREE	%	NEITHER AGREE NOR DISAGREE	%
Advanced Manufacturing	120	71.0	26	15.4	23	13.6
Automotive	31	59.6	14	26.9	7	13.5
Chemical Products and Plastics	16	57.1	6	21.4	6	21.4
Education	36	57.1	17	27.0	10	15.9
Energy Technologies	38	74.5	3	5.9	10	19.6
Healthcare	128	62.7	42	20.6	34	16.7
Other (e.g., defense, financial services, food, information technology, and other manufacturing)	56	54.4	27	26.2	20	19.4
Professional and Business Services	322	69.7	66	14.3	74	16.0
State and Local Government	17	50.0	12	35.3	5	14.7
Transportation, Logistics, and Distribution Services	26	65.0	8	20.0	6	15.0
	790	65.5	221	18.3	195	16.2

When we consider the respondents' assessment of their organization's resources to *train* underqualified new hires by industry, as shown in Table 11, we see that respondents in state and local government again report the lowest levels of agreement (44.1%) and the highest levels of disagreement (32.4%). This similar result is likely because limited resources for attracting applicants using competitive salaries also translates to limited resources/low budgets for training.

Table 11						
RESOURCES TO TRAIN UNDERQUALIFIED NEW HIRES						
INDUSTRY	AGREE %		DISAGREE %		NEITHER AGREE NOR DISAGREE %	
Advanced Manufacturing	118	69.8	25	14.8	26	15.4
Automotive	34	65.4	13	25.0	5	9.6
Chemical Products and Plastics	17	60.7	7	25.0	4	14.3
Education	37	58.7	14	22.2	12	19.0
Energy Technologies	36	70.6	5	9.8	10	19.6
Healthcare	141	69.1	38	18.6	25	12.3
Other (e.g., defense, financial services, food, information technology, and other manufacturing)	63	61.2	24	23.3	16	15.5
Professional and Business Services	337	72.9	75	16.2	50	10.8
State and Local Government	15	44.1	11	32.4	8	23.5
Transportation, Logistics, and Distribution Services	31	77.5	1	2.5	8	20.0
Grand Total	829	68.7	213	17.7	164	13.6

When we examine the respondents' assessment of their organization's efforts to *retain* employees in STEM jobs, as shown in Table 12, we see that respondents in the automotive industry report the lowest levels of agreement (59.6%) and the highest levels of disagreement (26.9%). The industry with the highest levels of agreement (81.8%) was professional and business services, which is also the industry with the largest number of respondents (462 or 38.3%).

Table 12						
RESOURCES TO RETAIN EMPLOYEES IN STEM JOBS						
INDUSTRY	AGREE %		DISAGREE %		NEITHER AGREE NOR DISAGREE %	
Advanced Manufacturing	127	75.1	15	8.9	27	16.0
Automotive	31	59.6	14	26.9	7	13.5
Chemical Products and Plastics	20	71.4	5	17.9	3	10.7
Education	44	69.8	11	17.5	8	12.7
Energy Technologies	36	70.6	2	3.9	13	25.5
Healthcare	130	63.7	33	16.2	41	20.1
Other (e.g., defense, financial services, food, information technology, and other manufacturing)	65	63.1	19	18.4	19	18.4
Professional and Business Services	378	81.8	35	7.6	49	10.6
State and Local Government	23	67.6	5	14.7	6	17.6
Transportation, Logistics, and Distribution Services	29	72.5	3	7.5	8	20.0
Grand Total	883	73.2	142	11.8	181	15.0

IMPLICATIONS, CONCLUSIONS, AND FUTURE RESEARCH

"I am convinced that nothing we do is more important than hiring and developing people.

At the end of the day you bet on people, not on strategies."

– Lawrence Bossidy, Former COO of G.E. and Former Chairman of Honeywell

(as cited in Rao, 2017)

STEM workers are the especially valuable human capital that can provide their organizations with a sustainable competitive advantage. While some sources say there is no shortage of STEM workers and other sources say the shortage is due to technological advances and immigration issues, we looked to managers and executives in the Tennessee Valley Corridor (Alabama, Kentucky, North Carolina, Tennessee, and Virginia) to shed light on the STEM workforce in the region. Our purpose was to extend the literature by examining managerial perspectives on the STEM workforce, specifically issues related to the supply and demand for quality STEM workers. We gained insights from over 1,000 organizational leaders in terms of what their organizations are doing to address the STEM workforce challenges they are facing.

First, we examined the managers' and executives' perceptions of the supply of STEM workers in their states, specifically whether or not there was sufficient quality. The majority of respondents (56.3%) said no. Kentucky had the highest percentage of no as the response (60.9%), while Tennessee had the highest number of yes as the response (52.7%). These results indicate that the perceptions of supply are mixed, and some states could be experiencing more problems with their STEM pipeline than others. We recommend exploring the various segments of the pipeline – the family, educators, community, industry, and government – to identify opportunities to improve engagement with and commitment to STEM fields and occupations. We then asked the managers and executives to predict how the demand for STEM employees in their states would change during the next 12 months. The majority said the number would increase (49.3%), while a similar proportion (47.4%) said the number would remain the same. By state, those predictions ranged from 42.3-58.2% for increase, 39.8-54.0% for remain the same, and 2.0-5.5% for decrease. Finally, we asked the managers and executives to indicate how their organizations would be impacted if they were unable to fill open positions in the 1-10+ year range. The majority (51.9%) indicated the impact would be negative, but 22.0% indicated there would be a positive impact. This result makes us wonder if the question was answered correctly or if perhaps respondents perceived having more positions than they can fill to be a positive problem. Considering their role in setting strategic direction and resource allocation, we are pleased that the majority of the leaders recognize that unfilled STEM positions could have a negative impact on their organizations.

Second, we explored the managers' and executives' views on the major challenges of their states' supply of STEM workers using qualitative questions. For the broadly-defined supply of STEM workers topic, our leaders reported that the lack of quality education, a lack of interest in STEM and availability, STEM jobs often require experience, and a lack of resources (funding and support) to provide high-quality STEM workers. These findings underscore the essential contributions that a strong STEM pipeline plays for communities, regions, and states. Again, we

recommend that stakeholders reevaluate every component of the pipeline to ensure that optimal investment and performance are being achieved. For the question specifically addressing their challenges with recruiting a STEM workforce, our leaders identified challenges that are similar to the recruitment of any high demand position. The textual analysis revealed three top issues: supply is not meeting demand, a lack of skilled STEM workers, and the ability to pay competitive wages. Organizations must rely on strategic HRM practices and use robust metrics to ensure that they are as competitive as they can be with their sourcing and recruitment, their new hire training and onboarding, and their total reward packages. They must conduct market analyses at least annually to see how their organizations' pay practices stack up against their competitors. When their pay practices fall out of alignment with their pay strategies, then they must make adjustments.

Third, we surveyed the managers and executives regarding their perceptions of the effectiveness of their organizations' human resource management practices related to recruitment, training, and retention. These three processes are essential to securing and maintain a STEM workforce. Organizational efforts to retain employees in STEM jobs were rated most favorably of the three items, followed by training underqualified new hires, followed by attracting highly-skilled STEM applicants. One concern about these items is that the attract and train items start with "my organization has the resources to..." In hindsight, this wording may have significantly affected the way the items were rated, especially if the leaders perceived their organizations as low on resources, which could be attributed to them personally. Likewise, the retain item, "my organization works to retain employees in STEM jobs," may have been rated higher because the organization's efforts could be a direct reflection on the managers and CEOs. Even so, if these ratings are any indication, organizations must spend more resources attracting skilled applicants if they ever hope to have an opportunity to train or retain them.

We suggest that future research on the STEM workforce includes HRM professionals as an additional category to supplement the perspectives of business leaders and executives. HRM professionals might have different perspectives, which could shed additional light on the factors affecting the supply and demand of STEM workers and especially the challenges organizations are facing with recruiting qualified applicants. Another suggestion for future research in this area is to strive to obtain a representative sample of genders and ages. In the current study, a disproportionate number of respondents were female (59.1%), which is noteworthy given our sample was managerial and executive employees. An additional way to strengthen the utility of this research would be to include more open-ended questions to assess the nature of the positive or negative effect of an organization's inability to fill positions and to understand why respondents perceived varying degrees of strength in the recruiting, training, and retention practices. Finally, future studies should incorporate staffing metrics from the surveyed organizations. Metrics such as time to hire, time to fill, and turnover could allow researchers to develop more meaningful and actionable insights, which would help our stakeholders develop more effective strategies for securing and sustaining a high-quality STEM workforce.

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ANTECEDENTS OF MARKET ORIENTATION IN HIGHER EDUCATION: EMPIRICAL RESULTS FROM FOUR KEY INFORMANT PERSPECTIVES

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ABSTRACT

This study examines the possible impact of selected antecedents (interdepartmental conflict, university administration emphasis, reward system) on individual components (customer orientation, competitor orientation, interfunctional coordination) of market orientation toward students within higher education. Prior research is extended and the variable relationships are examined from four different department chair perspectives (accounting chairs, marketing chairs, males, females).

Intelligence is gathered from survey research using existing scales reworded and validated for higher education. Research objectives and hypotheses are formed and hypotheses are tested using regression analyses to examine the variable relationships for each group of respondents.

Regression results support all hypotheses, with one or more of the selected antecedents shown to significantly impact each of the three market orientation components within each of the four groups that were examined. Regression results were different for each group of key informants.

Results have implications within higher education but also add to existing theory (Kohli and Jaworski 1990), and support concerns by Phillips (1981) and others regarding attentiveness in future research to key informant characteristics such as title and gender.

INTRODUCTION

Market orientation and its positive impact on organizational performance have been explored within the marketing literature, for a variety of business and nonbusiness settings, for decades (Felton, 1959; Kotler and Levy, 1969a; 1969b; Barksdale and Darden, 1971; Lusch and Lacznia, 1987; Hayes, 1989; Miller et al., 1990; Agarwal et al., 2003). The term market orientation refers to the extent that firms achieve the implementation of the marketing concept (McCarthy and Perreault, 1984). From these authors and others, especially Kohli and Jaworski (1990) and Narver and Slater (1990), the marketing concept is described as a philosophy that engenders coordinated organization-wide behaviors and activities aimed at gathering and disseminating information about the marketplace (customers and competitors), then acting on that information. The authors listed above, and others, provide theoretical and empirical support that implementation of the marketing concept leads generally to higher levels of performance for

organizations.

Part of a larger effort, this manuscript builds on previous research within the context of higher education that demonstrates a positive impact of market orientation toward university students on university performance. Note that, importantly, in their efforts toward guiding higher education practitioners toward strategies that lead to higher levels of quality and performance, Baldrige Performance Excellence Program (2019) specifically identifies students as the main customers of higher education (in addition to employers, parents, and others). This research provides an examination of the possible impact of selected antecedents of market orientation (interdepartmental conflict, management emphasis on market orientation, reward system orientation) suggested by Kohli and Jaworski (1990) on each of the three market orientation components (customer orientation, competitor orientation, interfunctional coordination) identified by Narver and Slater (1990). Extending theoretical and empirical research by Kohli and Jaworski (1990), Jaworski and Kohli (1993), and Hammond et al., (2006), the proposed causal relationships are examined within the context of students, within higher education.

Jaworski and Kohli (1993) provide empirical support for the proposed causal relationships in the case of businesses. Hammond et al., (2006) report significant correlations between management emphasis on student market orientation and the student market orientation components in the case of higher education. We seek to extend research into the selected antecedents of market orientation in higher education while also examining differences in perspective between groups of key informants.

Following suggestions from Phillips (1981) and Jaworski et al., (1993), the possible impact of selected key informant (respondent) characteristics on the results is considered within this study. The overall group of department chairs is split by title of the respondent, creating two segments (accounting department chairs and marketing department chairs). The overall group is then split by gender, creating an additional two segments (male department chairs and female department chairs). Acknowledging that each of the segments may exemplify a different perspective on the variables and relationships within the study, descriptive statistics and regression results are reported for each of the four groups, as defined by title and by gender. Phillips also suggests that organizational characteristics may influence results, and previous survey research within higher education business schools has indicated that responses may vary depending on accrediting body affiliation. Accordingly, this manuscript focuses on AACSB university business schools only.

Previous research results are thus revisited and extended to include an analysis of the four key informant perspectives described above regarding the causal relationships surrounding market orientation within higher education. While the primary focus of this research is on those differing perspectives, some of the variables and variable relationships included in this study provide new knowledge as well, not included in earlier research within higher education. We consult t-tests and compare regression results as we consider similarities and differences in judgement of variables and variable relationships between groups of informants.

This research specifically extends theory and findings developed and presented by Phillips (1981), Kohli and Jaworski (1990), and Jaworski et al., (1993). Survey questions are employed that were initially developed and used by Narver and Slater (1990), Jaworski and

Kohli (1993), and Slater and Narver (1994), reworded in the context of university business schools (Hammond et al., 2006). Academic department chairs of AACSB member schools serve as key informants (survey respondents). Department chairs are chosen as the key informants because of their unique position within the higher education hierarchy in most AACSB member business schools. The department chairs have administrative duties that require them to interact with other administrators such as deans and vice-presidents of academic affairs, but unlike these other administrators, most department chairs also teach student classes. Accordingly, due to this combination of roles, department chairs may develop insights toward behaviors and actions of the university that are unique and somewhat different from other faculty members and from other administrators.

LITERATURE REVIEW

Examining literature surrounding the marketing concept and market orientation, and conducting interviews with practitioners and academics, Kohli and Jaworski (1990) describe market orientation in terms of a set of activities and processes that create a “distinct form of sustainable competitive advantage” (p. 17). More specifically, they define market orientation as the extent that organizations incorporate “the organizationwide generation, dissemination, and responsiveness to market intelligence” (p. 3). Kohli and Jaworski (1990) developed a measure of market orientation based on three components (intelligence generation, intelligence dissemination, responsiveness to intelligence), provided an extensive model and propositions surrounding potential antecedents and consequences of market orientation, and followed up with subsequent articles (Jaworski and Kohli, 1993; Kohli et al., 1993) that incorporate their measures and test much of the theory. Jaworski and Kohli (1993) report empirical results that support the hypothesized positive impact of several antecedents (top management emphasis on market orientation, interdepartmental connectedness, reward system orientation toward the market) and the hypothesized negative impact of others (top management risk aversion, interdepartmental conflict, centralization of decision making) on at least one component (intelligence generation, intelligence dissemination, responsiveness) of market orientation. Interestingly, Kohli et al. (1993) note that informant characteristics may influence perception; differences in informants may be important in the measurement of market orientation. They take steps to identify and separate executives in their study, classifying the respondents as either marketing or non-marketing. Results reported in the study demonstrated differences in perception between marketing and non-marketing executives.

Narver and Slater (1990) refer to market orientation as “the organization culture . . . that most effectively and efficiently creates the necessary behaviors for the creation of superior value for buyers and, thus, continuous superior performance” (p. 21). Similarly to Kohli and Jaworski (1990), Narver and Slater built on existing literature and interviews to define market orientation in terms of three behavioral component parts (customer orientation, competitor orientation, interfunctional coordination). They developed scales for each component based on the extent that the organization exhibits certain behaviors and explain that the activities described by Kohli and Jaworski (intelligence generation, intelligence dissemination, responsiveness) are also included

in their scales. Narver and Slater propose those component scales and an overall market orientation scale for use in future research efforts. Several subsequent studies (Narver et al., 1992; Slater and Narver, 1994; Jaworski and Kohli, 1996; Narver et al., 1998; Agarwal et al., 2003) have referenced the Narver and Slater (1990) and Kohli and Jaworski (1990) studies and have employed the measures for further empirical investigation of theory surrounding the marketing concept and market orientation in a variety of contexts.

Importantly, as initially encouraged by Kotler and Levy (1969a; 1969b), researchers and practitioners have expanded the breadth of marketing beyond the limits of business applications. A natural part of that effort is that research and practice continues to test the boundaries of theory surrounding the marketing concept, described by Jaworski and Kohli (1993) as “a cornerstone of marketing thought” (p. 54), expanding the application well beyond business contexts to include a variety of non-profit settings. A firm understanding of the application and benefits of market orientation may be as important today as ever in a wide variety of contexts, given the increasing availability of market data surrounding customers and competitors. An appropriate emphasis within organizations on data analytics and the use of that data to provide greater value to customers and other stakeholders would presumably improve performance for the more market-oriented organizations.

Several authors (Hammond et al., 2006; Hemsley-Brown and Oplatka, 2010; Webster et al., 2010, 2014; Ma and Todorovic, 2011; Arifin, 2016) have extended market orientation research by examining the application within the context of higher education. Hammond et al. (2006) successfully reworded and extended the Narver and Slater (1990) scale to higher education, noting importantly that many of the propositions of the respected Baldrige National Quality Program “Baldrige Education Criteria for Performance Excellence” are encapsulated in the organizational behaviors and activities within the components of the scale. More recently, perhaps in response to the earlier articles, interest in the application of market orientation in higher education has expanded globally to include studies from Lithuania (Carlos and Rodrigues, 2012), India (Baber et al., 2015), Poland and Australia (Rynca and Ziaeeian, 2015), South Africa (Mokoena and Manilall, 2017), and others.

As noted above, this research also continues to expand the study to potential differences in perception (Campbell, 1955; Phillips, 1981) based on informant characteristics such as title or gender. As noted above, Jaworski et al. (1993) highlighted differences in perception based on title. Gender studies have become more mainstream in the academic and practitioner literature as more women have entered the professional workforce in both business and higher education. Gray’s (1992) popular book titled *Men are from Mars and Women are from Venus* may arguably have helped to spark this increased interest in gender studies within business and higher education. Examples of past articles on gender differences include findings by Marz et al. (2003) that gender affects managers’ social orientation. Also, Webster et al. (2004) found differences in expressions of self-confidence in financial analysis, and Brahnham (2005) found gender differences in conflict resolution methods. Additional gender studies include ethical judgments (Marta et al., 2008; Lund, 2008), differences in dealing with competition (Cotton et al., 2015), and differences in male and female decision making (Caprino, 2016).

RESEARCH OBJECTIVES

Two general research objectives are developed, and multiple hypotheses are formed for testing each objective. As introduced above and explained further in the methodology section, the research objectives follow from theory and empirical results published by Kohli and Jaworski (1990), Jaworski and Kohli (1993), and Hammond et al. (2006). The objectives also incorporate results from Phillips (1981) and Jaworski et al. (1993) regarding differences in informant judgements of organizational behavior based on informant characteristics.

Specifically, both objectives and all hypotheses include the examination of the possible impact of selected antecedents (interdepartmental conflict, management emphasis on market orientation, reward system orientation) on market orientation within the context of higher education, focusing on the student market within AACSB-accredited business schools. The Narver and Slater (1990) conceptualization of market orientation is employed with the three market orientation components of customer orientation, competitor orientation, and interfunctional coordination. As outlined in the methodology section, all scales are reworded to apply toward students within higher education (Hammond et al., 2006). Accordingly, each hypothesis formed and described below focuses on one of the three components of student market orientation as the dependent variable and the proposed antecedents as independent variables. The hypotheses are tested with regression analyses.

Objective 1: Splitting the total group of respondents into two groups based on title (accounting department chairs, marketing department chairs), examine the impact of selected antecedents on market orientation toward students within higher education for each of the two groups and then compare results for the two groups.

As noted above, following suggestions by Phillips (1981) and Jaworski et al. (1993), informants are split into two groups based on title (accounting department chairs or marketing department chairs) of the respondents. The university department chair respondents (marketing and accounting) are not a perfect match for the executives (marketing and non-marketing) surveyed in the Jaworski et al. (1993) study, but the title differences may create similarly different judgments of the organizational behaviors and activities. Though background and education vary considerably among department chairs that are responsible for the marketing discipline (usually along with other disciplines in the department), they may arguably be more likely (than accounting department chairs) to be aware of the market directed behaviors under investigation. Relationships between the variables, then, are anticipated to be somewhat different based on differences in title (as empirically demonstrated by Jaworski et al. (1993)).

Each of the hypotheses outlined within this objective includes all of the proposed antecedents (interdepartmental conflict, management emphasis on market orientation, reward system orientation), and focuses on one of the three components of student market orientation for respondents that are either accounting department chairs or marketing department chairs. Impact of each antecedent variable is hypothesized as either positive or negative based on previous research by Kohli and Jaworski (1990), Jaworski and Kohli (1993), and Hammond et al. (2006). The resulting six hypotheses are presented below.

As determined by accounting department chair knowledge and judgement of organizational behaviors and actions within AACSB-accredited business schools,

(H1) The customer orientation component of student market orientation is impacted (a) negatively by interdepartmental conflict within the university business school, (b) positively by university administration emphasis on student market orientation, and (c) positively by reward system orientation toward students.

(H2) The competitor orientation component of student market orientation is impacted (a) negatively by interdepartmental conflict within the university business school, (b) positively by university administration emphasis on student market orientation, and (c) positively by reward system orientation toward students.

(H3) The interfunctional coordination component of student market orientation is impacted (a) negatively by interdepartmental conflict within the university business school, (b) positively by university administration emphasis on student market orientation, and (c) positively by reward system orientation toward students.

As determined by marketing department chair knowledge and judgement of organizational behaviors and actions within AACSB-accredited business schools,

(H4) The customer orientation component of student market orientation is impacted (a) negatively by interdepartmental conflict within the university business school, (b) positively by university administration emphasis on student market orientation, and (c) positively by reward system orientation toward students.

(H5) The competitor orientation component of student market orientation is impacted (a) negatively by interdepartmental conflict within the university business school, (b) positively by university administration emphasis on student market orientation, and (c) positively by reward system orientation toward students.

(H6) The interfunctional coordination component of student market orientation is impacted (a) negatively by interdepartmental conflict within the university business school, (b) positively by university administration emphasis on student market orientation, and (c) positively by reward system orientation toward students.

Objective 2: Splitting the total group of respondents into two groups based on gender (males and females), examine the impact of selected antecedents on market orientation toward students within higher education for each of the two groups and then compare results for the two groups.

As described above, gender is the second key informant characteristic to be examined in this study. As noted above, interest seems to be growing steadily in gender studies and several research efforts demonstrate the influence of gender on perceptions of professionals.

Findings have indicated that gender affects managers' social orientation (Marz et al., 2003), and gender differences exist between expressions of self-confidence in financial analysis (Webster et al., 2004) and methods of conflict resolution (Brahnam, 2005). Additional gender

studies address ethical judgments (Marta et al., 2008; Lund, 2008) and differences in dealing with competition (Cotton et al., 2015).

As determined by male department chair knowledge and judgement of organizational behaviors and actions within AACSB-accredited business schools,

(H7) The customer orientation component of student market orientation is impacted (a) negatively by interdepartmental conflict within the university business school, (b) positively by university administration emphasis on student market orientation, and (c) positively by reward system orientation toward students.

(H8) The competitor orientation component of student market orientation is impacted (a) negatively by interdepartmental conflict within the university business school, (b) positively by university administration emphasis on student market orientation, and (c) positively by reward system orientation toward students.

(H9) The interfunctional coordination component of student market orientation is impacted (a) negatively by interdepartmental conflict within the university business school, (b) positively by university administration emphasis on student market orientation, and (c) positively by reward system orientation toward students.

As determined by female department chair knowledge and judgement of organizational behaviors and actions within AACSB-accredited business schools,

(H10) The customer orientation component of student market orientation is impacted (a) negatively by interdepartmental conflict within the university business school, (b) positively by university administration emphasis on student market orientation, and (c) positively by reward system orientation toward students.

(H11) The competitor orientation component of student market orientation is impacted (a) negatively by interdepartmental conflict within the university business school, (b) positively by university administration emphasis on student market orientation, and (c) positively by reward system orientation toward students.

(H12) The interfunctional coordination component of student market orientation is impacted (a) negatively by interdepartmental conflict within the university business school, (b) positively by university administration emphasis on student market orientation, and (c) positively by reward system orientation toward students.

METHODOLOGY

Data for the study were collected by way of a mailed survey. Surveys were mailed to 1538 department chairs of AACSB member schools located in the United States, with a follow-up mailing a few weeks later. As key informants (Campbell, 1955; Kumar et al., 1993), the department chairs were asked to complete the surveys and return them in business reply envelopes that were provided. Of the total survey instruments mailed, 198 were returned and 195 (13%) were completed sufficiently and included in the analyses by title; 194 (13%) were

included in the analyses by gender. All survey items were measured with a seven-point response scale, ranging from one (1) “not at all” to seven (7) “to an extreme extent.” The survey questions inquired regarding organizational behaviors and activities.

Narver and Slater’s (1990) market orientation (MKTOR) scale (described above) consists of several questions addressing specific behaviors and activities that measure the extent that the organization applies the marketing concept. Three subscales are used in this study to measure the market orientation components (customer orientation, competitor orientation, interfunctional coordination) using questions reworded for university business schools by Hammond et al. (2006). In spite of suggestions by Ma and Todorovic (2011), we choose this scale that envisions students as the primary customers of higher education (as also suggested by Baldrige Performance Excellence Program).

University administration emphasis on student market orientation is measured using the Jaworski and Kohli (1993) top management emphasis scale as reworded for higher education by Hammond et al. (2006). Similarly, the interdepartmental conflict scale items from Jaworski and Kohli (1993) are reworded and employed within this study. We were able to reword and use only four of the original six reward system orientation items from the Jaworski and Kohli (1993) of study. The items used (which describe four aspects of reward systems that are oriented externally, toward the market) describe the extent that the business school exhibits a faculty/staff focus on competition, use of student surveys for evaluating faculty, strength of student

TABLE 1
Reliability Statistics and Confirmatory Factor Analysis Results

Variables / Items	Item-to-Total Corr.	Alpha	CFA Regression Weights and Model Fit
Student Market Orientation			
Customer Orientation Component (Scale)		.779	
Student satisfaction objectives	.392		.450
Measure student satisfaction	.368		.400
Create student value	.611		.700
Student commitment	.676		.780
After-enrollment service	.528		.646
Understand student needs	.613		.688
Competitor Orientation Component (Scale)		.759	
Student recruiters share competitor information	.489		.546
Respond rapidly to competitors’ actions	.642		.776
Administrators discuss competitors’ strategies	.603		.707
Target opportunities for competitive advantage	.495		.654
Interfunctional Coordination Component (Scale)		.756	
Entire institution contributes to student value	.604		.704
Staff and faculty meet with prospective students	.478		.486
Functional integration in strategy	.550		.597
Information shared among functions	.452		.613
Share resources with other units	.528		.644
			df=84, N=194 CMIN/DF=1.845 (p .000)

TABLE 1
Reliability Statistics and Confirmatory Factor Analysis Results

Variables / Items	Item-to-Total Corr.	Alpha	CFA Regression Weights and Model Fit
			SRMR=.0572 TLI=.913, CFI=.931, IFI=.932 RMSEA=.066 (.050-.082)
Interdepartmental Conflict (Scale)		.817	
Most departments get along well (reverse scored)	.669		.823
When members of several depts. get together, tensions frequently run high	.431		.414
People generally dislike interacting with other depts.	.633		.696
Faculty/staff feel that goals of departments are in harmony (reverse scored)	.523		.589
Little or no interdepartmental conflict (reverse scored)	.562		.634
	.541		.504
Protecting departmental turf is a way of life	.552		.542
Department objectives are incompatible with other depts.			df=9, N=194 CMIN/DF=4.612 (p .000) SRMR=.0566 TLI=.838, CFI=.930, IFI=.932 RMSEA=.137 (.096-.180)
Univ. Admin. Emphasis on Student MO (Scale)		.806	
Sensitive to activities of competitors	.604		.711
Gear up now for future needs of students	.722		.867
Serving students is important	.555		.619
Adapting to market trends	.609		.664
			df=2, N=194 CMIN/DF=2.488 SRMR=.0271 TLI=.963, CFI=.988, IFI=.988 RMSEA=.088 (.000-.188)

relationships for evaluating faculty, and use of student assessments to influence administrators' pay. Two of the original reward system items were discarded as inapplicable to the higher education context.

All scales are subjected to reliability analysis and exploratory factor analysis prior to further analysis (Churchill, 1979; Peter, 1979). The four reward system orientation items demonstrate poor scale reliability (Cronbach's Alpha .405 and item-to-total correlations from .117 to .466) and unsatisfactory factor loadings (two items with loadings below .40). All other proposed scales demonstrate strong Cronbach's Alpha scores (Table 1) and satisfactory factor loadings ranging from .40 to .77.

Subsequent calculation and examination of correlation coefficients for the reward system orientation items with the three proposed dependent variables indicate statistically significant correlations (significance .05 or better) for all four items with one or more of the proposed dependent variables. Based on these results and theory from Kohli and Jaworski (1990) and

Jaworski and Kohli (1993), we include the items in the study as individual measures of certain aspects of reward systems that may impact student market orientation within higher education.

We employ SPSS-AMOS (Version 25) for confirmatory factor analyses (Anderson and Gerbing, 1988; Bagozzi and Yi, 1988) of the three remaining scales (student market orientation, interdepartmental conflict, university administration emphasis on student market orientation). Results (Table 1) indicate satisfactory factor loadings and generally acceptable to excellent model fit for the scales (Wheaton et al., 1977; Bentler and Bonett, 1980; Marsh and Hocevar, 1985; Bentler, 1990; Browne and Mels, 1992; Browne and Cudeck, 1993). Standardized regression weights are provided for each item (Table 1), along with relative chi-square (CMIN/DF), the comparative fit index (CFI), Tucker-Lewis Index (TLI), and incremental fit index. We also report the standardized root mean square residual (SRMR) and root mean square error of approximation (RMSEA) with its 90% confidence interval. The student market orientation model was conducted specifying the three components, allowing the components to correlate. The correlation coefficients ranged from .798 to .844, supporting convergent validity for the one-dimensional three component market orientation construct as determined by Narver and Slater (1990) and Hammond et al. (2006).

We proceed to provide descriptive statistics and t-tests as described below and in Table 2, to better understand differences that may exist in responses per informant group. We then address the objectives/hypotheses by calculating and examining regression analyses for twelve models (one for each hypothesis).

RESULTS

Descriptive Statistics and Differences in Variable Means by Informant Group

Descriptive statistics are calculated and provided for all variables (Table 2), for respondents overall and for each of the four segments of respondents (split by title and by gender). Note that the 195 total respondents consist of 101 accounting department chairs and 94 marketing department chairs. Splitting total respondents by gender, the large majority were male (149 male; 46 female). Recall that these response scales range from a low of “1” to a high of “7,” with “4” as the midpoint. Note from the table that the mean responses for two variables (the customer orientation component of student market orientation; reward system use of student surveys for evaluating faculty) are above the midpoint overall and for each segment. Mean responses for all other variables are consistently near or below the midpoint overall and for each segment.

TABLE 2 Descriptive Statistics	
	Mean (N) <i>Std Dev</i>
OVERALL SAMPLE	
Student Market Orientation - Customer Orientation	4.58 (195) .96
Student Market Orientation - Competitor Orientation	3.43 (195) 1.17

TABLE 2
Descriptive Statistics

	Mean (N) <i>Std Dev</i>
Student Market Orientation – Interfunctional Coordination	3.84 (195) 1.12
Interdepartmental Conflict	2.90 (195) 1.16
Univ. Admin. Emphasis on Student Market Orientation	3.66 (195) 1.29
Reward System Orientation toward Students	
- Faculty and Staff Focus on Competition (Q47)	3.44 (195) 1.53
- Use of Student Surveys for Evaluating Faculty (Q53)	5.73 (195) 1.67
- Strength of Student Relationships Used in Evaluating Faculty (Q65)	3.91 (195) 1.58
- Student Assessments Influence Administrators' Pay (Q74)	2.09 (195) 1.61
ACCOUNTING DEPARTMENT CHAIRS	
Student Market Orientation - Customer Orientation	4.44 (101) .98
Student Market Orientation - Competitor Orientation	3.38 (101) 1.28
Student Market Orientation – Interfunctional Coordination	3.70 (101) 1.16
Interdepartmental Conflict	3.03 (101) 1.08
Univ. Admin. Emphasis on Student Market Orientation	3.66 (101) 1.39
Reward System Orientation toward Students	
- Faculty and Staff Focus on Competition (Q47)	3.40 (101) 1.59
- Use of Student Surveys for Evaluating Faculty (Q53)	5.68 (101) 1.64
- Strength of Student Relationships Used in Evaluating Faculty (Q65)	3.81 (101) 1.60
- Student Assessments Influence Administrators' Pay (Q74)	2.04 (101) 1.52
MARKETING DEPARTMENT CHAIRS	
Student Market Orientation - Customer Orientation	4.73 (94) .91
Student Market Orientation - Competitor Orientation	3.48 (94) 1.03
Student Market Orientation – Interfunctional Coordination	3.99 (94) 1.07
Interdepartmental Conflict	2.76 (94) 1.24
Univ. Admin. Emphasis on Student Market Orientation	3.67 (94) 1.18
Reward System Orientation toward Students	
- Faculty and Staff Focus on Competition (Q47)	3.49 (94) 1.46
- Use of Student Surveys for Evaluating Faculty (Q53)	5.78 (94) 1.70
- Strength of Student Relationships Used in Evaluating Faculty (Q65)	4.02 (94) 1.54
- Student Assessments Influence Administrators' Pay (Q74)	2.15 (94) 1.71
MALE DEPARTMENT CHAIRS	
Student Market Orientation - Customer Orientation	4.58 (149) .95
Student Market Orientation - Competitor Orientation	3.41 (149) 1.18
Student Market Orientation – Interfunctional Coordination	3.81 (149) 1.12
Interdepartmental Conflict	2.88 (149) 1.08
Univ. Admin. Emphasis on Student Market Orientation	3.68 (149) 1.31
Reward System Orientation toward Students	
- Faculty and Staff Focus on Competition (Q47)	3.43 (149) 1.53
- Use of Student Surveys for Evaluating Faculty (Q53)	5.79 (149) 1.55
- Strength of Student Relationships Used in Evaluating Faculty (Q65)	3.81 (149) 1.52
- Student Assessments Influence Administrators' Pay (Q74)	2.23 (149) 1.72

TABLE 2
Descriptive Statistics

	Mean (N) <i>Std Dev</i>
FEMALE DEPARTMENT CHAIRS	
Student Market Orientation - Customer Orientation	4.61 (45) .98
Student Market Orientation - Competitor Orientation	3.48 (46) 1.13
Student Market Orientation – Interfunctional Coordination	3.92 (46) 1.14
Interdepartmental Conflict	2.97 (46) 1.41
Univ. Admin. Emphasis on Student Market Orientation	3.62 (46) 1.23
Reward System Orientation toward Students	
- Faculty and Staff Focus on Competition (Q47)	3.48 (46) 1.52
- Use of Student Surveys for Evaluating Faculty (Q53)	5.52 (46) 2.00
- Strength of Student Relationships Used in Evaluating Faculty (Q65)	4.26 (46) 1.72
- Student Assessments Influence Administrators' Pay (Q74)	1.63 (46) 1.08

T-tests are calculated to compare variable means between segments of respondents (accounting department chairs vs. marketing department chairs; males vs. females). The results do represent statistically significant differences (at the .05 level) for two of the variables. Judgements of the customer orientation component are significantly different ($t = 2.134$; sig. .034) when comparing responses from accounting and marketing department chairs, and are significantly different for one of the reward system orientation variables (student assessments affect administrators' pay; $t = 2.838$; sig. .005) when comparing responses from male and female department chairs.

Objective 1: Splitting the total group of respondents into two groups based on title (accounting department chairs, marketing department chairs), examine the impact of selected antecedents on market orientation toward students within higher education for each of the two groups and then compare results for the two groups.

Regression analyses are calculated and reported (Table 3) that address each of the six hypotheses (H1 – H6) specified within this objective (one analysis for each of the three components of student market orientation for accounting department chairs and the same for marketing department chairs). Results of the regression analyses indicate that each of the proposed antecedent variables (interdepartmental conflict, university administration emphasis on market orientation, reward system orientation) impacts one or more components of student market orientation for both groups (accounting department chairs and marketing department chairs). Additionally, all six of the hypotheses included within this objective are at least partially supported by the results of the analyses.

Results for accounting department chairs indicate support for hypotheses 1(a), 1(b), 2(b), 3(a), and 3(b). Only hypothesis 2(a) is not supported. Hypotheses 1(c), 2(c), and 3(c) are partially supported, with three reward system orientation variables shown to affect competitor orientation, only one of the four proposed reward system variables shown to impact student customer orientation, and a different reward system variable shown to impact interfunctional coordination.

Considering results for the marketing department chair group, hypotheses 5(b), 6(a), and 6(b) are supported and hypotheses 4(a), 4(b), and 5(a) are not supported. Hypotheses 4(c), 5(c), and 6(c) are partially supported, with one reward system orientation variable shown to affect all three market orientation components and an additional reward system variable additionally affecting the student customer orientation component. See Tables 3 and 4 for details.

With three proposed dependent variables and six proposed independent antecedent variables, 18 causal relationships were examined for each informant group. Ten of the relationships were supported by analyses of data from the accounting chairs (in full or partial support of eight of the nine hypotheses). Seven of the 18 relationships were supported by analyses from the marketing chairs (in support of only six of the hypotheses).

Comparisons of results for the two groups reveals that they are similar in some regards but very different in others (Tables 3 and 4). Strikingly different from accounting chair results, for example, neither interdepartmental conflict nor university administration emphasis are demonstrated to impact customer orientation in the marketing chair results. In fact, all three statistically significant independent variables in the accounting chair model for customer orientation are different from the two significant independent variables in the marketing chair model. (Recall also from the t-tests comparing judgements by these informant groups that the customer orientation variable is significantly different for the two groups.) Several of the reward

TABLE 3 Tests for Main Effects – Results of Regression Analyses Regression Coefficients (Sign.)			
Independent Variables	Dependent Variables		
	Student MO - Customer Orientation	Student MO - Competitor Orientation	Student MO - Interfunctional Coordination
ACCOUNTING DEPARTMENT CHAIRS	<u>Hypothesis 1</u>	<u>Hypothesis 2</u>	<u>Hypothesis 3</u>
Interdepartmental Conflict	-.279 (.002)	-.082 (.330)	-.337 (.000)
Univ. Admin. Emphasis on Student MO	.414 (.000)	.338 (.000)	.383 (.000)
Reward System Orientation – Student Market			
- Faculty and Staff Focus on Competition	.186 (.041)	.340 (.000)	-.004 (.966)
- Student Surveys for Evaluating Faculty	-.155 (.120)	-.072 (.453)	-.072 (.460)
- Strength of Student Relationships Used in Evaluating Faculty	.173 (.060)	.178 (.047)	.306 (.001)
- Student Assessments Influence Administrators' Pay	.038 (.641)	.178 (.024)	.070 (.378)
F (sign.)	12.44 (.000)	14.31 (.000)	13.04 (.000)
Adjusted R ²	.407	.444	.419
MARKETING DEPARTMENT CHAIRS	<u>Hypothesis 4</u>	<u>Hypothesis 5</u>	<u>Hypothesis 6</u>
Interdepartmental Conflict	-.139 (.151)	-.080 (.399)	-.238 (.013)
Univ. Admin. Emphasis on Student MO	.156 (.128)	.416 (.000)	.364 (.000)
Reward System Orientation – Student Market			
- Faculty and Staff Focus on Competition	.027 (.779)	.142 (.136)	.091 (.334)

TABLE 3 Tests for Main Effects – Results of Regression Analyses Regression Coefficients (Sign.)			
Independent Variables	Dependent Variables		
	Student MO - Customer Orientation	Student MO - Competitor Orientation	Student MO - Interfunctional Coordination
- Student Surveys for Evaluating Faculty	-.077 (.471)	.043 (.680)	.039 (.704)
- Strength of Student Relationships Used in Evaluating Faculty	.364 (.001)	-.042 (.703)	.035 (.748)
- Student Assessments Influence Administrators' Pay	.235 (.016)	.223 (.019)	.186 (.047)
F (sign.)	7.00 (.000)	7.74 (.000)	8.01 (.000)
Adjusted R ²	.281	.303	.312
MALE DEPARTMENT CHAIRS	<u>Hypothesis 7</u>	<u>Hypothesis 8</u>	<u>Hypothesis 9</u>
Interdepartmental Conflict	-3.454 (.001)	-.122 (.116)	-.318 (.000)
Univ. Admin. Emphasis on Student MO	3.517 (.001)	.319 (.000)	.361 (.000)
Reward System Orientation – Student Market			
- Faculty and Staff Focus on Competition	1.623 (.107)	.197 (.017)	.014 (.864)
- Student Surveys for Evaluating Faculty	-1.170 (.244)	-.050 (.543)	-.143 (.073)
- Strength of Student Relationships Used in Evaluating Faculty	3.373 (.001)	.117 (.144)	.246 (.002)
- Student Assessments Influence Administrators' Pay	2.368 (.019)	.207 (.004)	.094 (.182)
F (sign.)	15.99 (.000)	13.63 (.000)	15.40 (.000)
Adjusted R ²	.378	.339	.369
FEMALE DEPARTMENT CHAIRS	<u>Hypothesis 10</u>	<u>Hypothesis 11</u>	<u>Hypothesis 12</u>
Interdepartmental Conflict	-.178 (.859)	-.042 (.704)	-.211 (.077)
Univ. Admin. Emphasis on Student MO	2.991 (.005)	.528 (.000)	.408 (.001)
Reward System Orientation – Student Market			
- Faculty and Staff Focus on Competition	.173 (.864)	.416 (.000)	-.018 (.869)
- Student Surveys for Evaluating Faculty	-.225 (.824)	-.013 (.923)	.433 (.005)
- Strength of Student Relationships Used in Evaluating Faculty	.829 (.412)	-.018 (.892)	-.115 (.413)
- Student Assessments Influence Administrators' Pay	.575 (.568)	.215 (.041)	.220 (.046)
F (sign.)	2.40 (.046)	11.26 (.000)	9.39 (.000)
Adjusted R ²	.160	.578	.528

system variables demonstrate results (in terms of statistical significance) in the regression models for the two groups, though those results are at times different for the two informant groups. Regarding similarities, notably, use of student surveys for evaluating faculty demonstrates no impact on any component of student market orientation for either group. This is the only antecedent variable that behaves consistently the same (across all three dependent

variables) for the two informant groups. See Table 4 for a comparison of the hypotheses results, in terms of support or nonsupport, for the two groups included in this objective.

Objective 2: Splitting the total group of respondents into two groups based on gender (males and females), examine the impact of selected antecedents on market orientation toward students within higher education for each of the two groups and then compare results for the two groups.

As with Objective 1, the hypotheses (H7 – H12) associated with Objective 2 are all at least partially supported by the results of the regression analyses (Tables 3 and 4). Similarities

TABLE 4 Summary of Support / Nonsupport for Hypotheses by Accounting and Marketing Informant Groups			
Independent Variables	Dependent Variables		
	Student MO - Customer Orientation	Student MO - Competitor Orientation	Student MO - Interfunctional Coordination
ACCOUNTING DEPARTMENT CHAIRS	<u>Hypothesis 1</u>	<u>Hypothesis 2</u>	<u>Hypothesis 3</u>
(a) Interdepartmental Conflict	SUPPORT	NONSUPPORT	SUPPORT
(b) Univ. Admin. Emphasis on Student MO	SUPPORT	SUPPORT	SUPPORT
(c) Reward System Orientation – Student Market			
- Faculty and Staff Focus on Competition	SUPPORT	SUPPORT	NONSUPPORT
- Student Surveys for Evaluating Faculty	NONSUPPORT	NONSUPPORT	NONSUPPORT
- Strength of Student Relationships Used in Evaluating Faculty			
- Student Assessments Influence	NONSUPPORT	SUPPORT	SUPPORT
Administrators' Pay	NONSUPPORT	SUPPORT	NONSUPPORT
MARKETING DEPARTMENT CHAIRS	<u>Hypothesis 4</u>	<u>Hypothesis 5</u>	<u>Hypothesis 6</u>
(a) Interdepartmental Conflict	NONSUPPORT	NONSUPPORT	SUPPORT
(b) Univ. Admin. Emphasis on Student MO	NONSUPPORT	SUPPORT	SUPPORT
(c) Reward System Orientation – Student Market			
- Faculty and Staff Focus on Competition	NONSUPPORT	NONSUPPORT	NONSUPPORT
- Student Surveys for Evaluating Faculty	NONSUPPORT	NONSUPPORT	NONSUPPORT
- Strength of Student Relationships Used in Evaluating Faculty			
- Student Assessments Influence	SUPPORT	NONSUPPORT	NONSUPPORT
Administrators' Pay	SUPPORT	SUPPORT	SUPPORT
MALE DEPARTMENT CHAIRS	<u>Hypothesis 7</u>	<u>Hypothesis 8</u>	<u>Hypothesis 9</u>
(a) Interdepartmental Conflict	SUPPORT	NONSUPPORT	SUPPORT
(b) Univ. Admin. Emphasis on Student MO	SUPPORT	SUPPORT	SUPPORT
(c) Reward System Orientation – Student Market			
- Faculty and Staff Focus on Competition	NONSUPPORT	SUPPORT	NONSUPPORT
- Student Surveys for Evaluating Faculty	NONSUPPORT	NONSUPPORT	NONSUPPORT
- Strength of Student Relationships Used in Evaluating Faculty			
- Student Assessments Influence	SUPPORT	NONSUPPORT	SUPPORT

Administrators' Pay	SUPPORT	SUPPORT	NONSUPPORT
FEMALE DEPARTMENT CHAIRS	<u>Hypothesis 10</u>	<u>Hypothesis 11</u>	<u>Hypothesis 12</u>
(a) Interdepartmental Conflict	NONSUPPORT	NONSUPPORT	NONSUPPORT
(b) Univ. Admin. Emphasis on Student MO	SUPPORT	SUPPORT	SUPPORT
(c) Reward System Orientation – Student Market			
- Faculty and Staff Focus on Competition	NONSUPPORT	SUPPORT	NONSUPPORT
- Student Surveys for Evaluating Faculty	NONSUPPORT	NONSUPPORT	SUPPORT
- Strength of Student Relationships Used in Evaluating Faculty	NONSUPPORT	NONSUPPORT	NONSUPPORT
- Student Assessments Influence Administrators' Pay	NONSUPPORT	SUPPORT	SUPPORT

TABLE 5
Respondent Demographics

TOTAL SAMPLE (196)	Mean (N)	Std. Deviation
Years of Experience at this University	15.31 (188)	8.77
Years of Experience as Department Chair	5.15 (190)	4.46
Highest Degree Completed: 1 Bachelor, 18 Master, 175 Doctorate	-	-
Academic Major: 58 Mktg, 76 Acctg, 18 Mgmt, 6 Econ, 5 Fin,	-	-
9 Law/Tax, 12 Other Business or MBA, 11 Nonbusiness	-	-
Gender: 149 Males, 47 Females	-	-

ACCOUNTING DEPT. CHAIRS (102)	Mean (N)	Std. Deviation
Years of Experience at this University	16.14 (99)	8.54
Years of Experience as Department Chair	5.56 (99)	4.75
Highest Degree Completed: 1 Bachelor, 17 Master, 83 Doctorate	-	-
Academic Major: 76 Acctg, 2 Mgmt, 4 Econ, 4 Fin, 6 Law/Tax,	-	-
6 Other Business or MBA, 3 Nonbusiness	-	-
Gender: 78 Males, 23 Females	-	-

MARKETING DEPT. CHAIRS (94)	Mean (N)	Std. Deviation
Years of Experience at this University	14.38 (89)	8.98
Years of Experience as Department Chair	4.70 (91)	4.10
Highest Degree Completed: 1 Master, 92 Doctorate	-	-
Academic Major: 58 Mktg, 16 Mgmt, 2 Econ, 1 Fin, 3 Law/Tax,	-	-
6 Other Business or MBA, 8 Nonbusiness	-	-
Gender: 71 Males, 24 Females	-	-

MALE DEPT. CHAIRS (149)	Mean (N)	Std. Deviation
Years of Experience at this University	15.94 (144)	9.27
Years of Experience as Department Chair	5.46 (143)	4.59
Highest Degree Completed: 1 Bachelor, 14 Master, 133 Doctorate	-	-
Academic Major: 43 Mktg, 58 Acctg, 14 Mgmt, 6 Econ, 4 Fin,	-	-
7 Law/Tax, 8 Other Business or MBA, 9 Nonbusiness	-	-

FEMALE DEPT. CHAIRS (46)	Mean (N)	Std. Deviation
Years of Experience at this University	13.08 (43)	6.54
Years of Experience as Department Chair	4.21 (46)	3.96
Highest Degree Completed: 4 Master, 42 Doctorate	-	-
Academic Major: 15 Mktg, 18 Acctg, 4 Mgmt, 2 Law/Tax, 1 Fin, 4 Other Business or MBA, 2 Nonbusiness	-	-

between the two groups are indicated by the results. Notably, university administration emphasis on student market orientation is demonstrated by regression analyses for both males and females to (statistically significantly) positively impact all three components of market orientation. Regression results also demonstrate the same (statistically significant) antecedents of the competitor orientation component for both groups (males and females). However, other than university administration emphasis on market orientation, regression results for the other two components (customer orientation and interfunctional coordination) are very different for the two gender groups.

Accordingly, for male respondents (Tables 3 and 4), hypotheses 7(a), 7(b), 8(b), 9(a), and 9(b) are supported and hypothesis 8(a) is not supported. Hypotheses 7(c), 8(c), and 9(c) are partially supported, with multiple reward system orientation variables impacting the student market orientation components.

Regarding female respondents (Tables 3 and 4), regression analyses demonstrate support for hypotheses 10(b), 11(b), and 12(b), fail to demonstrate support for hypotheses 10(a), 11(a), and 12(a), and partially support 10(c), 11(c), and 12(c). Again, results for this group are considerably different than results for males. For example, one of the reward system orientation variables (student surveys used to evaluate faculty) failed to indicate statistical significance as an antecedent to any component of market orientation for the male group (or for accounting chairs or for marketing chairs). That variable, however, is indicated by responses from females to be a statistically significant positive antecedent to interfunctional coordination.

In addition to title and gender, demographic data is provided for total respondents and for each segment (accounting department chairs, marketing department chairs, males, females), for informational purposes (Table 5). Specifically, data regarding mean years of experience and educational background are provided. The additional demographic data help to provide a better understanding of the respondent groups and differences that may exist between the groups. Slightly greater levels of experience in certain segments (accounting chairs and males) may help to explain some of the differences in the findings. Likewise, differences in terminal degrees of the department chairs (which incidentally include several business and nonbusiness disciplines outside of accounting and marketing) may also help to explain differences in the findings.

CONCLUSIONS

The research objectives are met; results of the tests of hypotheses and differences in the results per group are described above and provided in Tables 3 and 4. The selected antecedents

of market orientation (interdepartmental conflict, management emphasis on market orientation, reward system orientation) suggested by Kohli and Jaworski (1990) are all found to impact each of the three market orientation components (customer orientation, competitor orientation, interfunctional coordination) identified by Narver and Slater (1990), as applied toward students within higher education. In some cases, the statistically significant causal effect is found only for certain segments of the informants (with segmentation based on title or gender). The differences in findings for different segments within this study support suggestions from Phillips (1981) and Jaworski et al. (1993) that informant characteristics may influence their responses and thus may impact the variable measures and other factors within studies that rely on key informants.

Results have implications for student recruitment and retention, competitor orientation, interfunctional coordination, conflict management, administrative planning/emphasis, and intelligence within the university. Specifically, three key results should influence or re-enforce existing actions regarding students markets: (1) Interdepartmental conflict reduces student market orientation, (2) University administration emphasis on student market orientation increases student market orientation, and (3) Market focused reward systems generally increase student market orientation. Universities should clearly be interested in anything that increases student market orientation, assuming they accept the premise and growing empirical evidence from academics and practitioners that higher levels of market orientation in turn lead to greater levels of performance. Accordingly, universities should strive to reduce interdepartmental conflict, emphasize student market orientation from all levels of the organization, and incorporate (as possible) considerations of the student market when designing reward systems for faculty, staff, and administration. A greater awareness of differences in perspective could also assist decision makers in responding to intelligence that may be gathered within their own university.

More broadly, results from this research add to existing research suggesting that market orientation studies in business may have applicability to higher education. Practitioners within higher education should increasingly accept findings from business and other sectors of the economy that may impact market orientation also within higher education.

Results of this study also confirm or disconfirm that the scales are reliable in the context of higher education. Note that even the reward system items (determined to be unreliable as a scale) appear to be useful in the higher education context, demonstrating statistical significance as measures of individual dimensions of reward system orientation within the regression models of this study. Though the items do not work together reliably as a scale, they are each indicated to capture a behavior or activity that is a relevant antecedent to at least one of the components of student market orientation, from at least one of the tested perspectives.

As described in Table 2, the total sample is weighted more heavily toward accounting chairs than marketing chairs and weighted much more heavily toward males than females. Any differences in judgment stemming from title differences or gender differences, then, could logically skew the overall results. If this study had demonstrated no differences between the groups, we could be more confident in the results for total respondents. However, since statistically significant differences do exist based on title and gender (Table 3), results support concerns of Phillips (1981) regarding informant bias and the analyses within each segment

arguably become more important. Obviously, focusing solely on results for total respondents may be misleading in this case due to the underrepresentation of certain groups.

Several unanswered questions are raised by this study regarding the differences in regression results for the segments of respondents included in the study. For example, which group (if any) shows the best judgement? Who is correct?

Regarding experience, should we assume that the groups of respondents with higher mean levels of experience (accounting chairs and males) and presumably greater levels of institutional knowledge, are more accurate in their assessment of behaviors and activities throughout the university and within the department/school? Alternatively, should we suspect that the relatively less experienced groups of respondents are less likely to respond with “the way things have always been” or the way things were historically, and may be more likely to be aware of the way things are currently?

LIMITATIONS, OBSERVATIONS, AND SUGGESTIONS FOR FUTURE RESEARCH

The findings of this study further demonstrate that theory and empirical research surrounding market orientation within businesses may be appropriately applied to university business schools. Readers may be able to generalize the results to others within higher education and possibly also to nonbusiness organizations outside of higher education. We urge caution, however, in applying the findings due to the limitations of the sampling frame (AACSB member schools only, located in the United States).

Results of this study indicate that respondent demographics lead to differences in judgments of organizational behaviors and activities specifically in the case of title and gender of the department chair respondent. Regarding title, a limitation is that we surveyed department chairs only. Employees at other levels (vice presidents or vice chancellors for academics, deans, faculty) may have different perceptions. Accordingly, results of the study might be different if examined from other levels of the organization.

We do not segment respondents by experience or educational background in this analysis. We also do not include other demographic data (such as experience prior to the current university inside or outside of academia) that may be relevant. Understandably, as noted by Phillips (1981), there may well be other informant demographics not considered within this study that impact judgment of the respondents.

Though caution is encouraged, the results provide significant guidance for future research regarding gender differences, market orientation and its antecedents generally and especially within higher education, and research methods involving key informants. The results strongly support assertions by Phillips (1981) and Jaworski et al., (1993), for example, that key informant characteristics matter and should be considered in survey research.

Regarding differences in results for accounting chairs and marketing chairs, should we consider that marketing department chairs (especially those with terminal degrees in marketing) are likely to have a greater knowledge of and respect for the marketing concept and market orientation, and are thus more aware of the behaviors and activities thought to indicate higher levels of market orientation? Though we did not include the terms “marketing,” marketing

concept,” or “market orientation” in the survey, marketing chairs are likely more familiar with the concepts included in the study. However, when considering differences in results from these two groups of department chairs whose responsibilities are essentially the same, should we assume that either perspective is “right?”

Males and females apparently, per the results of this study and earlier research as noted above, see the world differently. Again, which group shows the better judgement regarding the institutional behaviors and activities investigated in this study? To the extent that perspectives differ significantly, who is “right?”

Perhaps each respondent segment is accurate, just coming from different viewpoints, and practitioners and researchers can gain practical and valuable insights from each of the four perspectives represented by the results described within this study (Tables 3 and 4). While identical findings for multiple segments of key informants certainly provide strong consistent support for specific causal relationships within the study, unique results within each segment may provide practitioners with additional useful information for the improvement of market orientation toward students. Importantly also for future research considerations, significant differences in information by segment may remain hidden (especially for groups of the population that are underrepresented in the overall sample) and not easily discernible if researchers focus solely on the overall sample, investigating and reporting results only in the aggregate.

The observations and limitations noted above also present opportunities for further research; the study could be repeated outside the United States or within non-AACSB business schools. It could also be conducted at other levels of the organization, within other disciplines, and within other types of organizations. Additionally, future studies could allow for and examine the possible effect on informant judgement of highest academic degree, major field of study, years of experience, or length of service at the university.

Finally, sudden environmental shifts such as exhibited by the current COVID-19 pandemic may emphasize the need for higher levels of market orientation. Logically, universities focused intently on the needs of their students and other stakeholder-customers would likely be more likely to make the correct decisions when faced with uncertain situations. Future research could extend the current research to examine antecedents and consequences of market orientation within universities that are coping with emergencies and other disasters such as pandemics.

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PROJECT MANAGEMENT LEADERSHIP AND INTERPERSONAL SKILLS: THE PAST, PRESENT, AND FUTURE

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ABSTRACT

The purpose of this research is to examine how interpersonal competencies have evolved in the project management profession and describe which additional skills will be needed in the future. Using an applied thematic analysis, the authors examined the past, present, and future of interpersonal skills in peer reviewed academic literature and project management textbooks. A gap analysis was used to compare the reviewed material vs. interpersonal competencies. This research concluded that project management interpersonal transferrable skills are the ones that will be most highly sought after into the future. The future of interpersonal skills will need to concentrate on those competencies that emphasize emotional intelligence, integrity, culture sensitivity, and interpersonal conflict. The academic value is that this research elaborates the interpersonal skills body of knowledge by categorizing skills as competencies. This offers a distinct viewpoint that can be used as a basis for future targeted and measurable interpersonal capability studies. The practical value is that by examining history provides a methodical mechanism to develop new knowledge and informed solutions to future problems. Examining concepts of longevity demonstrates competencies, which have stood the test of time, and therefore have been found to be of value for practitioners.

Key words- project management history; future; interpersonal skills; competency models; Harold Kerzner

INTRODUCTION

Job skills needed in the 21st century include interpersonal competencies that are transferrable. These include creativity, innovation, critical thinking, problem solving, decision-making, and metacognition, in addition to enhanced collaboration and the ability to conduct oneself in an ethical, socially responsible manner (McGunagle & Zizka, 2020).

Companies want workers who are self-motivated and work independently (Dean & East, 2019). Emerging lean workforces have resulted in more work for individuals who are spending more time on work-products with less time on worker training. This is done by drawing on the tenets of agile behavioral methods, including productivity, speed, and flexibility (Cooper & Sommer, 2018).

An average of 2.2 million new project-oriented roles will need to be filled each year through 2027 (PMI, 2017a). As a result, higher education sees the need to prepare more students for project management (Nijhuis et al., 2018). To meet this need, business schools offer degrees, courses, and certificates in project management, while devoting chapters on the discipline in textbooks (Ravinder & Kolikkathara, 2017). Ravinder and Kolikkathara maintained that those who are successful will have specific personal skills in addition to technical expertise. Those skills include leadership, the ability to foster and manage interpersonal relationships, and the ability to promote open communication among team members. Covelli (2018) notes that authenticity is an ingredient of leadership that fosters a climate of positivity and facilitates in the decision-making process, where tough calls need to be made.

Human skills are necessary for project management performance. Based on that premise the purpose of this paper is to examine how interpersonal skills have evolved in training and practice and where the profession goes from here with respect to those skills. The study examines the past, present, and future of interpersonal skills in academic literature and reputable textbooks. Specifically, this research addresses the following questions:

1. To what extent has project management literature evolved with respect to the impact of interpersonal skills on project activities?
2. Which interpersonal competencies garnered the greatest emphasis based on thematic and longitudinal analyses of project management textbooks?

This paper begins with a brief literature and review of the evolution of interpersonal skills in project management. This is followed by a description of the methodology, findings, analysis of the results and discussion, the future and implications for the profession.

BACKGROUND

As project management matured as a management discipline, there was an increasing recognition of the value of people in being able to successfully complete projects. Furthermore, inspired and motivated team members were more likely to achieve project goals than those who were not (Geue, 2017). The need to interact and network with internal and external stakeholders is recognized as an essential component of successful project management. Turner et al. (2019) identify a four step process: 1) stakeholder identification, 2) stakeholder classifications (including “internal” or “external” and high/low influence levels), 3) stakeholder analysis, and 4) stakeholder communications modes. Mastering the art of stakeholder management becomes increasingly important to organizations as projects grow in complexity, levels of information overload rise, priorities, conflict, and political pressures increase over competition for scarce resources. Additionally, Gauthier and Josien (2017) hold there is a significant relationship between mission statement content and actions regarding stakeholder groups for social ventures, and further suggested that social ventures selling to consumers would show stronger community and environmental performance than social ventures selling to businesses. The shift in managing human capital with increasing complexity has developed project management from a purely technical discipline to being viewed as a specialized field of management where leadership and interpersonal skills play a central role.

According to Donaires and Martinelli (2019), management is traditionally defined in terms of a set of activities such as planning, controlling, decision-making, organizing, and leadership of people. Further, the authors state that management is the design, control, and development of purposeful systems at higher abstract levels.

Project management has evolved over time. Whereas the iron triangle (time, budget, and quality) used to be the single guideline for project success, the views of project success now include less tangible matters such as stakeholder appreciation that result in obtaining program goals. Ahern, et al. (2016) hold the traditional view of project management is that it is an applied science grounded in technical rationality.

In 1959, project management became a focus of academic interest in the *Harvard Business Review* (Gaddis, 1959). The article highlights the underlying tension between project management's different views—whether traditional project management is an applied science grounded in technical rationality or social science that facilitates the construction and interpretation of project boundaries by project stakeholders, or a combination of both.

Hendarman and Cantner (2018) added that different types of skills are essential for innovation and companies' economic performance. *Hard* skills are teachable competencies acquired through self-study, work experience, education, or training (Yan et al., 2019). Historically, PM's competency focus has been on hard skills capability to apply typically technical acumen needed for short-term success (Dean & East, 2019).

Scholars and business professionals refer to *soft* skills with a variety of terms and phrases. These include the twenty-first-century skills, the ticket to upward economic mobility, the must master learning outcomes, interpersonal skills, survival skills, character strength, and socio-emotional skills (AbuJbara & Worley, 2018). Interest in soft skills has often focused on communication and building relationships with customers in service industries (Nickson et al., 2005). However, the importance of soft skills across many disciplines is receiving more extensive attention. Cultural diversity, globalization, and technology are factors that influence the need for enhanced soft skills in the workplace. Additionally, employers are seeking employees who are flexible, think critically, solve problems, and work in teams. Soft skills are essential for personal development, social participation, and workplace success. The literature identifies changes in the labor market, revealing a gap between college graduates and the essential soft skills required.

Interpersonal skills, which include the aforementioned soft competencies, go a step further. As businesses face a changing competitive battleground, the employee skill set needs are evolving and adding additional competencies. The 21st century workplace includes workgroups capable of interacting globally with diverse cultures (Dean & East, 2019). Consequently, the leadership competency has grown in importance because it provides encouragement, orientation for the development of trust and relationships among team members (Hendarman & Cantner, 2018). AbuJbara and Worley (2018) maintain that employers in today's world are actively recruiting employees who are socially and emotionally stable. They point out that as much as 85% of an individual's job success can be attributed to interpersonal skills, as opposed to their technical skills.

Hendarman and Cantner (2018) suggested that the borderline between the concepts relating to hard skills and soft skills is not always clear-cut, as described in their classification research. Hard skills are mainly cognitive in nature and are influenced by an individual's IQ. Consequently, IQ is a measurement of cognitive aspects that can measure skills such as conceptual thinking and problem-solving.

Prior research has identified the need for further studies regarding the linkage between hard and soft skills and project management. Gillard (2017) noted, learning and practicing ways to optimize human interaction, build trust and confidence, and effectively communicate with project team members, internal and external stakeholders, and individuals in positions of authority will lead to more efficient and effective project management. Similarly, Muszyńska (2018) further remarked that effective communication is needed to establish understanding, trust, and build coordination and support from various project personnel. Engaging stakeholders to achieve project objectives, and overcome issues and resolve conflicts is an essential factor for project success. Therefore, in this paper, the authors used the historical trajectory of project management. This includes a shift from a purely technical and mechanistic worldview to a perspective fully anchored in the human element of projects.

METHODOLOGY

This exploratory research applies a thematic analysis of literature to integrate practitioner expertise with formalized qualitative practices. This study is a type of grounded theory that allows researchers to develop a cultural model from the written words (Guest et al., 2013). This methodology draws upon a number of closely related methods, including content analysis (Bordens & Abbott, 2018; Crozby & Bates, 2018), and descriptive literature review (Corbin & Strauss, 2015) to identify common themes and identify gaps in the research domain.

The research consists of two parts. The first part includes a description of interpersonal skills, as found in recent peer-reviewed academic literature. These skills are extracted from the Project Management Institute project manager competency framework (PMI, 2017c). A more thorough discussion of the competency framework's selection is found in the findings and discussions section of this paper.

The second part consists of a thematic and longitudinal analysis from project management textbooks. Pettigrew (2013) described this as a contextualist approach to analysis that includes vertical and horizontal levels and interconnections. The vertical analysis includes a literature and textbook content review. The longitudinal literature review, as a horizontal level of analysis Grimm et al., (2017) allows the researchers to discover changes in types of interpersonal skills over the decades of project management.

Evaluated textbook sets included Gido et al. (2018), Heagney (2016), Kerzner (2017), Kloppenborg et al. (2019), Larson and Gray (2018), Lock (2013), Meredith et al. (2018), Pinto (2019), Schwalbe (2015), Wysocki (2019), and Young (2016). The Kerzner series (1979, 1984, 1989, 1992, 1995, 1998, 2001, 2003, 2006, 2009, 2013, & 2017) was selected for this study since this set provided the largest number of editions over the most extended period, with a recent final edition.

FINDINGS AND DISCUSSION

The findings and discussion section consists of two parts. First, the authors provide description of interpersonal skills as documented in the academic literature. Second, the authors review the evolution of interpersonal skills through the Kerzner textbooks.

Evolution of Interpersonal Skills through Academic Literature

This section focuses on research question 1: ‘to what extent has project management literature evolved with respect to the impact of interpersonal skills on project activities?’ Over the last 100 years, there has been a progressive adjustment in categorizing leadership and interpersonal skills (Vaagaasar et al., 2019). Cintia et al. (2018) defined competence as the interconnected skills and personal characteristics employed to perform a specific task or activity. The evolution of interpersonal competencies has advanced from subjective decisions seeking leadership charisma to a significant focus on emotional intelligence capabilities (Goleman et al., 2016).

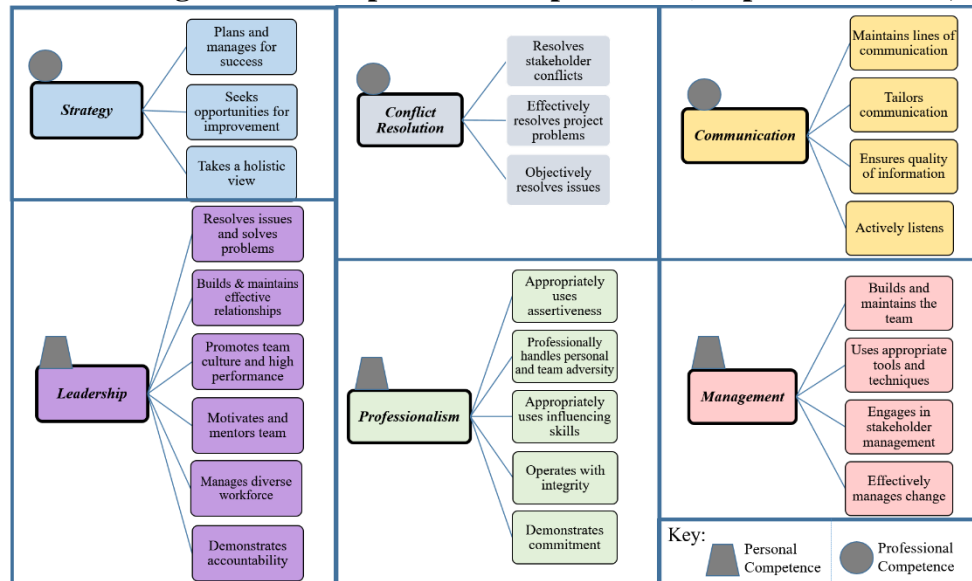
Interpersonal competency models exhibit a locus on the capabilities of current project managers rather than what is required to lead projects in a dynamic, evolving organization. Historical analysis between the interconnected elements of interpersonal skills and project success has emerged into distinct schools. The first of these include the trade school in 1930 through the 1940s, which concentrated on the leader's personalities and traits (Cullen & Leavy, 2017). During the 1960s, contingency leadership and interpersonal skills evolved. Evolving interpersonal capabilities sought to match the situation with the leadership style of the project manager (PM). Next, came the visionary school in the 1980s that delimited the leader's competence to address organizational changes. Entering the 1990s, the emotional intelligence school unfolded with a concentration on PMs to self-regulate and continuously seek methods to strengthen communication with project members.

In this paper, the authors developed a framework of six interpersonal groups. These include management, leadership, conflict resolution, strategy, professionalism, and communication. The Project Management Institute (PMI, 2017b) recognizes that project managers require specific interpersonal skills when leading projects. The PMI's Project Management Competency Development (PMCD) framework provides a structure to define, assess, and develop project management competencies and has been selected as a scholarly tool investigated by numerous researchers seeking to understand and compare competencies for project managers (Howley, 2016; McDermott, 2016). Accordingly, the PCMD was the primary investigated tool introduced into the paper exploring evolving interpersonal skills (PMI, 2017c). Figure 1, provides a graphical view of the six competency groupings and subsequent competencies. Table 1 frames the six groups bounded by 25 interpersonal competencies from the PCMD.

Evolution of Interpersonal Skills through the Kerzner Textbooks

This section focuses on research question 2: ‘which interpersonal competencies garnered the greatest emphasis based on thematic and longitudinal analyses of project management textbooks?’ Table 2 summarizes the results of the 12 Kerzner editions.

Figure 1
Framework Showing PCMD interpersonal competencies (adapted from PMI, 2017c)



Note: PMI (2017b) identifies knowledge competency "pillars" that include professional (scope and time management and integration of performance tools), and personal skills (can-do attitude, integrity, and confidence).

Table 1
Competencies with Representative Literature Sources

Group	Competency	Description	Source(s)
Management	Builds & maintains the team	<ul style="list-style-type: none"> · Rapport building & address conflict resolution · Maintain collaborative functioning organization 	(O'Brien & Boyle, 2019)
	Uses appropriate tools and techniques	<ul style="list-style-type: none"> · Tools and techniques appropriately aligned to team · Seeks environment of extroversion and emotional intelligence 	(Goleman et al., 2016; Nicolăescu, 2018)
	Engages in stakeholder management	<ul style="list-style-type: none"> · Sustainable stakeholder engagement · Influencing support leading to project success 	(Thomas, 2018)
	Effectively manages change	<ul style="list-style-type: none"> · Drive organizational changes · Shift needed pace of organizational delivery to global conditions 	(Bivona, 2018)
Leadership	Resolves issues and solves problems	<ul style="list-style-type: none"> · Use of authentic leadership · Aptitude to resolve issues between employees and stakeholders 	(Hietajärvi et al., 2017; Levý, 2020)
	Builds and maintains effective relationships	<ul style="list-style-type: none"> · Address project complexities · Collaborative solutions facilitated by trust and governance 	(Turner et al., 2019; Varoutsas & Scapens, 2018)
	Promotes team culture and high performance	<ul style="list-style-type: none"> · Dynamic interpersonal skills · Seeking high performance organizations 	(Kuhnert & Lewis, 1987; Mahajan & Toh, 2017)
	Motivates and mentors team	<ul style="list-style-type: none"> · Introducing mentoring and innovation · Risk taking; Increase social and emotional intelligence 	(Harrison et al., 2018; Nisha & Rajasekaran, 2018)
	Manages diverse workforce	<ul style="list-style-type: none"> · Overcome barriers in spoken languages and cultural behaviors · Evolve skills to lead multicultural teamwork 	(Medina & Medina, 2017)

	Demonstrates accountability	<ul style="list-style-type: none"> · Conscientiousness towards influencing success · Accountability echoing commitment to the team 	(Masood et al., 2018)
<i>Conflict Resolution</i>	Resolves stakeholder conflicts	<ul style="list-style-type: none"> · Reinforces active employee engagement · Identify personal gaps in ineffective communication 	(Sutterfield et al., 2007; Zuofa & Ochieng, 2017)
	Effectively resolves project problems.	<ul style="list-style-type: none"> · Foundational capabilities to negotiate with stakeholders · Address conflicts in a nonlinear dynamic approach 	(Zuo et al., 2018)
	Objectively resolves issues.	<ul style="list-style-type: none"> · Moderate and resolve individual issues with objectivity · Create symbiotic relationships 	(Grove et al., 2018)
<i>Strategy</i>	Plans and manages for success	<ul style="list-style-type: none"> · Motivates team to embrace plans · Design organization to strategy 	(Cannon, 1972; Lensges et al., 2018)
	Seeks opportunities for improvement	<ul style="list-style-type: none"> · Consistently seeks project enhancements · Incorporate indigenous global perspectives 	(Anna-Maija et al., 2017)
	Takes a holistic view	Awareness of sensory and social experiences	(Venter et al., 2019)
		Increase cognitive capabilities resulting in long term relationships	
<i>Professionalism</i>	Appropriately uses assertiveness	<ul style="list-style-type: none"> · Hone skills leading a diverse social-emotional organization · Distinguish evolving use of assertiveness and defensive tactics 	(Săndulescu, 2019)
	Professionally handles personal and team adversity	<ul style="list-style-type: none"> · Self-efficacy and confidence to project demands · Evolve self-control 	(Lloyd-Walker et al., 2018)
	Appropriately uses influencing skills	<ul style="list-style-type: none"> · Effectively influence and affirm team · Seek common areas demonstrating professional behaviors 	(Zuo et al., 2018)
	Operates with integrity	<ul style="list-style-type: none"> · Exemplify trust and integrity · Evolve a culture leading to alliances 	(Javed Saad et al., 2018)
	Demonstrates commitment	<ul style="list-style-type: none"> · Consistent messaging approaches · Drive commitment to customer deliverables 	(Straatmann et al., 2018)
<i>Communication</i>	Maintains lines of communication	<ul style="list-style-type: none"> · Employ multidimensional communication · Establish and sustain tools connecting team 	(McDermott, 2016)
	Tailors communication	<ul style="list-style-type: none"> · Salient and motivating characteristics · Adjust interactions to dynamic work environment 	(Vaagaasar et al., 2019)
	Ensures quality of information	<ul style="list-style-type: none"> · Build dynamic project culture · Inspire need for timely, accurate data sharing 	(Cimalore, 2017)
	Actively listens	<ul style="list-style-type: none"> · Demonstrate servant leadership 	(Thompson, 2010)

Table 2
Competencies as Defined in Kerzner Textbooks

Group	Competency and Section Count*	Longitudinal Assessment By Edition	Strength Assessment
<i>Management</i>	Builds and maintains the team (15)	Added sections on managing virtual teams in 10 th ; Added decision making with teams in 11 th	GREEN
	Uses appropriate tools and techniques (13)	Centered on planning and time management in the earliest editions; minor enhancements gradually added beginning with the 8 th , but specifics were lacking; by the 12 th , sections were removed indicating the proliferation of tools and difficulty in including a comprehensive tool list in textbook; overall strong discussions until later editions	YELLOW-GREEN
	Engages in stakeholder management (10)	Introduced relatively late with early focusing simply on internal relationships; 8 th expanded to include sponsor and external sponsorships, with the full stakeholder set introduced in 11 th	GREEN
	Effectively manages change (3)	Cursory discussion in 2 nd as a variable for success; resistance to change added in 7 th ; specifics for managing change absent until the 8 th ; change management as a decision-making mechanism added in 11 th	RED
<i>Leadership</i>	Resolves issues and solves problems (14)	Handling disagreements with sponsors added in the 8 th , with additional conflict resolution added in the 11 th	GREEN
	Builds and maintains effective relationships (8)	Notable additions included discussion of virtual teams in the 10 th , and the role of sponsorship in the 11 th .	GREEN
	Promotes team culture and high performance (7)	Focus primarily on team and corporate culture, and lacked a compete discussion of the skills necessary for high performance in global environment.	YELLOW-GREEN
	Motivates and mentors team (5)	Complex topics better addressed in other sources such as Jyoti & Rani (2019) and Luna (2018)	YELLOW

	Manages diverse workforce (4)	Only received passing treatments.	RED
	Demonstrates accountability (2)	Only received passing treatments; term “accountability” was added in the 12th, but a complete discussion is still lacking.	RED
<i>Conflict Resolution</i>	Resolves stakeholder conflicts (17)	Added in the 9th through 11th on managing stakeholder relations and conflicts and the need for human behavior education; resolving project problems was not added until the 11th	GREEN
	Effectively resolves project problems (16)	Key sections were added in the 9 th (professional responsibilities), and in the 11 th regarding predicting the outcome of decision.	GREEN
	Objectively resolves issues (5)	Only received passing treatments.	RED
<i>Strategy</i>	Plans and manages for success (15)	While planning and managing for success received good treatment, the focus on the strategic perspective was only marginal throughout	GREEN
	Seeks opportunities for improvement (10)	Most significant addition was made in the 7th with a section on continuous improvement. Sections on using best practices as part of improvement, and project decision making were added in the 7th and 11th respectively; overall good foundation, but could be enhanced	YELLOW-GREEN
	Takes a holistic view (3)	Cursory discussion	RED
<i>Professionalism</i>	Appropriately uses assertiveness (6)	Cursory discussion	YELLOW-RED
	Professionally handles personal and team adversity (6)	Cursory discussion	YELLOW-RED
	Appropriately uses influencing skills (4)	Cursory discussion	RED
	Operates with integrity (2)	Treated only minimally	RED
	Demonstrates commitment (0)	Introduced late, but then removed from the textbooks in the 12th ; weak to non-existent	RED
<i>Communication</i>	Maintains lines of communication (6)	Communication with the functional manager was added in the 7th.	YELLOW
	Tailors communication (4)	Communication with the functional manager was added in the 7th; modeling the communication environment added in 12th.	RED
	Ensures information quality (2)	Only mentioned the 2nd and 11th	RED
	Actively listens (2)	Only fully developed starting with 11th; number of sections on active listening is small, but treatment is comprehensive.	YELLOW

* The number in parentheses identifies the number of sections related to competency based on an in-depth analysis of the 12 Kerzner textbooks.

The *management* competencies have adequate content, except for managing change. For *leadership*, most competencies were addressed beginning with the 1st or 2nd editions. Sections devoted to leadership were reasonably stable from 2nd to 6th editions with some additions thereafter. *Conflict resolution* was primarily addressed beginning with the 1st or 2nd editions, demonstrating the foundational nature of these competencies in project management. The number of sections devoted to conflict was reasonably stable from 2nd to 6th editions with a large number of additions later. The 7th edition includes addressing conflict during political, social, and economic times, and includes a discussion of conflict resolution modes. In the 11th edition, a broader set of conflicts was addressed, including political. Next, the *strategy* steadily evolved coverage in each edition.

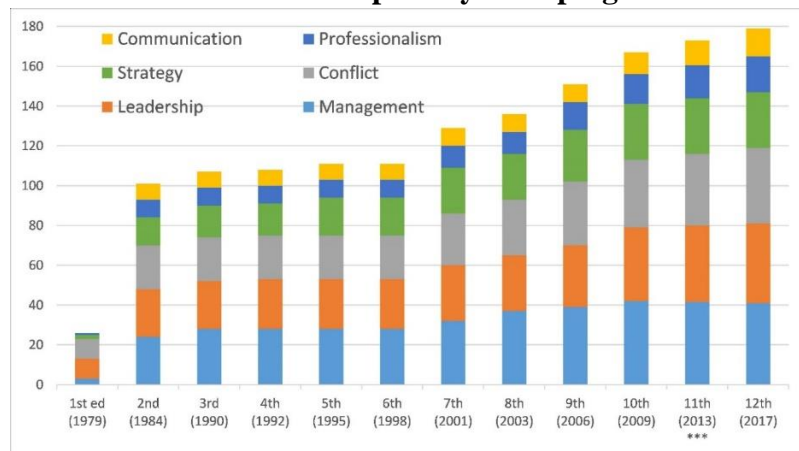
The analysis does identify the minimal content in the areas of *professionalism* and *communication*. A project manager's ability to assertively handle personal and team adversity, commitment, and influence stakeholders. Professionalism can be argued as vital to program interpersonal success (Zuo et al., 2018). Likewise, a project manager's ability to establish, tailor, and validate information (communication) is essential to achieving the project life cycle (Lloyd-Walker et al., 2018).

Professionalism was sparsely addressed beginning with the 2nd edition, stable from 2nd to 8th, and included minor additions after that. The only significant addition was in the 9th edition with a discussion on professional responsibilities and politics. However, in the 11th edition, the

sections are brief and lack actionable detail. *Communication* received a relatively weak treatment in Kerzner. Three competencies (not including active listening) were marginally addressed beginning with the 2nd edition. While the number of sections devoted to communication was stable from 2nd to 8th editions there were only a few additions in later editions. To further demonstrate the weakness and late evolution of this grouping, a section on the project manager as a communicator was not added until the 12th edition.

Figure 2 addresses the longitudinal nature of the groupings. Note that the first edition was significantly shorter (487 pages vs. average 1000+ of all editions) simply to explore project management as a profession. Only the most fundamental topics of the time were addressed in that edition. In contrast, the 11th edition appears to be an anomaly in that many topics in that edition were subsequently removed in the 12th edition. One may assume that the 11th edition (at 1264 pages) became unwieldy as a useable guide and was reduced to a manageable number of sections and pages in the 12th edition.

Figure 2
Longitudinal Examination of Competency Groupings in Kerzner Textbooks



***The sections in the 11th editions are treated as anomalous and adjusted as the average of the 10th and 12th.

FUTURE AND IMPLICATIONS

The final section of this paper is comprised of two parts. First, it includes an assessment of the interpersonal skills expected to impact project management in the future, based on the competencies that received a larger share of coverage during the analysis. Finally, it provides a brief discussion at the impact of COVID-19 and how it has affected how project management work is performed with respect to interpersonal skills.

The Future of Interpersonal Skills in Project Management

This section focuses is on the extent to which the gap analysis identifies the future interpersonal skills in project management and what interpersonal skills will be needed to be successful. Using the Kerzner gap analysis, specific antecedents of the six competency

groupings were found to have received less than adequate coverage. Under the management competency, this includes effectively managing change. In the leadership competency, this includes managing diversity and the ability to demonstrate accountability. Finlay et al. (2017) also point out how the global environment today places a great demand on leadership that is able to function in varying global environments, further emphasizing the need to successfully manage diversity. At the same time, Love (2018) notes the challenge of linking diversity initiatives with business results. In conflict resolution, the ability to objectively resolve conflicts was found to have received weak coverage. In strategic competency, taking a holistic view included only a discussion. Appropriate use of influencing skills, operating with integrity, and demonstrating commitment were areas that all received a cursory discussion. Finally, under the communications competency, the discussions on tailoring and providing quality communication were inadequate.

Interpersonal transferrable skills will be sought in the 21st century (McGunagle & Zizka, 2020; Sandlin et al., 2018). The study's gap analysis exposes that the future of interpersonal skills will concentrate on competencies that emphasize emotional intelligence, integrity, cultural sensitivity, and the ability to manage and resolve interpersonal conflict.

The background section apprises the body of knowledge of the increasing urgency of the PM to deal with people. Project members are assigned with varying skills and personalities. The PM will require the development of personal skills such as trust-building, listening, counseling, appropriate utilization of power, and conflict resolution. The capabilities to apply the professional tools are to be bounded by the aptitude to influence a project team grounded on persistence and patience. The shift in managing human capital with increasing complexity has developed project management from a purely technical discipline to being viewed as a specialized field of management where leadership and interpersonal skills play a central role in succeeding in future project enterprises.

The Impact of COVID-19 on Interpersonal Skills in Project Management

The global impact of the COVID-19 pandemic has not been seen in nearly 100 years (Wilson, 2020). The result has been profoundly changed every aspect of how we live, work and play. Many institutions have adopted a distributed model in terms of work, where the business is transacted virtually. Our study results provided insights into the significance of interpersonal skills needed for 21st century project management. The analysis can serve as a starting point for future research in this area on the sociocultural behaviors organizations will need to adapt to achieve and maintain competitive sustainability.

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