SOCIAL BARRIERS TO IMPLEMENTING CONTINUOUS IMPROVEMENT INITIATIVES
A QUALITATIVE EXPLORATION

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Abstract. Organizations report challenges in implementing continuous improvement or operational excellence initiatives as they strive for sustainability, yet few have considered the impact that social barriers have in creating resistance to implementation. Through a qualitative grounded theory method, this study highlights several contributions. First, social barriers are stronger than other challenges to implementing operational excellence. Second, these barriers include interpersonal (e.g., communication challenges, unwillingness to change, and workplace relationships) and organizational (e.g., employee treatment, cultural values, and formal organizational characteristics) issues. This article thus links sustainability to operational excellence and suggests that the greatest barriers to becoming more sustainable are likely social in nature. The study then concludes, in addition to these contributions, with a consideration of limitations and directions for future research.

INTRODUCTION

Stoner (2013) suggests the importance of management philosophies that help society move toward becoming more sustainable. Operational excellence, given its focus on continuous improvement, is one potentially useful concept in this regard. Due to their focus on waste reduction and proper stewardship of resources, continuous improvement initiatives can help achieve global sustainability if they are widely adopted (Urick, Hisker, & Godwin, 2017). Yet many organizations report challenges in implementing continuous improvement and operational excellence initiatives. Moreover, although extant research has often assumed that such resistance is related to the technical aspects of implementation, few studies have explored the social aspects of an organization's culture that might limit the adoption and realization of such efforts. This study, therefore, serves several purposes: first, it articulates that social barriers are powerful forces for resistance; second, it describes both interpersonal and organizational focused social barriers; and third, it explores operational excellence and continuous improvement (one of the first qualitative studies to do so). Indeed, implementing operational excellence to achieve sustainability is inherently related to organizational culture and change management.

We make several contributions in this study. To begin with, it is one of the first (to our knowledge) to leverage a qualitative grounded theory approach to explore phenomena related to continuous improvement activities. The purpose of grounded theory is to develop themes that can be investigated later on through subsequent quantitative hypothesis-based testing. Most of the existing extant research, however, has either been quantitative or case study-based, which is inappropriate given the lack of academic theory surrounding operational excellence. Our study thus fills this void.

Second, much of the extant academic and practitioner literature that explores challenges with implementing continuous improvement initiatives assumes that obstacles and barriers come mostly from technical or tools-based aspects (Čiarnienė & Vienažindienė, 2013; Salonitis & Tsinopoulos, 2016). This article, therefore, is one of the first explorations to our knowledge that focuses exclusively on social barriers. We provide a more holistic understanding of the challenges involved in becoming a culture focused on continuous improvement.

Third, we explicitly link operational excellence to sustainability. While there is a lot of research on sustainability, there are very few pieces that link sustainability concepts to continuous improvement in general and social barriers in particular. As such, we present findings suggesting that social barriers are a factor for organizations becoming more sustainability-oriented.

OPERATIONAL EXCELLENCE

Some cultures could be described as being operational excellence (OE) cultures. As a management philosophy, OE is focused on providing the quality demanded by customers, waste reduction, problem solving, and continuous improvement (Operational Excellence, 2016). Because of these foci, every industry and type of business can benefit from this approach. The OE framework, therefore, is not limited to only manufacturing and healthcare as is sometimes assumed. Everything is linked (or integrated) in this type of organization (Urick et al., 2017)—all processes, for example, are linked together, as are organizations to their customers and suppliers. Thus, while OE is related to other management philosophies such as lean and the more statistically-oriented Six Sigma, it is distinguished by its extreme focus on culture and long-term initiatives rather than on short-term blitz events (Urick et al., 2017). The term "operational excellence" does have some definitional challenges,

however, suggesting that its theoretical underpinnings have not been well-employed in academic research. Nevertheless, we use this term to include a majority of culturally-focused continuous improvement initiatives, to be consistent throughout our research, and, perhaps more importantly, because it was used most often by our interviewees.

Many cultures that have continuous improvement or OE aspects possess similar elements (some specific ones are noted in Table 1 below). We draw on some of these from the cultures of several companies (such as Toyota, for example [Liker & Hoseus, 2008]) that have successfully employed continuous improvement techniques to become more efficient in their operations, elements that appear to be similar to those of other organizations that have also been successful in OE implementation. Such major assumptions of continuous improvement cultures include: 1) that respect for people is crucial, and 2) that continuous improvement allows for competitive advantage (Liker & Hoseus, 2008). These major assumptions produce a variety of values, such as the importance of customer service/quality, flexible stability, flow, cleanliness, safety, efficiency, and measurement/data, which highlight a variety of artifacts focused on proper problem solving. Continuous improvement can also be perceived as being related to global sustainability due to its focus on waste reduction (see the discussion related to OE and Pope Francis's *Laudato si'* in Urick, Hisker, and Godwin, 2017).

Assumptions (deeply held, unarticulated worldviews which influence values)
• Respecting people above all
* Seen through customer quality and in striving for lifetime employment for employees
* Drives customer value, quality, and the importance of treating employees well (values)
• Philosophy of continuous improvement and learning
* Employees will improve the efficiency of the organization without worrying about improving themselves out of work
* Part of the continuous improvement assumption suggests that employees be assigned elsewhere where they can add value to the organization if their current role is no longer needed
* Continuous improvement will not work if employees are afraid of layoffs; they all need to assume (and believe that the organization believes in) the importance of respecting people

Values (ideals, concepts, and concerns that all organizational members agree upon and care about which influence artifacts)

• Maintaining a focus on customer value
    * Quality and timing demanded by customers
    * Customer does not necessarily need to mean the customer external to an organization; it can also be an internal customer
    * Improving value for customers is important

• Reducing variation (value of stability)   * Standard work—shown in the artifact of having a clear and documented process to do a piece of work

• Waste (*muda*) reduction (value of efficiency and flow)
    * Waste is like "mud" that slows down an organization
    * Types of waste include transporting, waiting, overproduction, defects, inventory, motion, and extra processing

• 6S (value of flow [moving quickly between parts of a process], cleanliness, and safety)—suggests certain values that lead to activities of: sorting, straightening, scrubbing, systematizing, standardizing, and maintaining a safe environment

• "Go and see" (value of measurement/data)
    * People can only understand a problem if they can visualize it and have seen it first hand
    * People need to collect the data themselves

Artifacts (an organization's tangible manifestations of culture that include physical representations of both assumptions and values)

• Value stream mapping
    * Map out a process to see where time is spent
    * Determine portions of a process that aren't adding value to a final product and cut them out

• Spaghetti diagrams
    * Show movement throughout a time period to minimize unnecessary movement and motion
    * Show a more efficient way of structuring a process

Artifacts (an organization's tangible manifestations of culture that include physical representations of both assumptions and values)

• Team meetings
   * Gather around a "balanced scorecard" that shows a snapshot of metrics important to a company
   * Some major categories might include quality, employee development, safety, cost/finance, or any other areas of crucial importance to the team

• Finding the root cause of a problem
   * Asking why five times
   * Fishbone charts and other visual methods

• Plan-Do-Check-Act methodology
   * Aids with continuous improvement
   * First, when someone sees a problem, they figure out a way to fix it
   * They follow through with this plan and enact it
   * They check to see whether they've solved the problem
   * If the problem's solved, they find another problem to start the cycle again; if they did not solve the problem or meet their goals, they find out why and develop a new plan to try and address it

• Suggestion boxes
   * Serve as a means for employees to make recommendations on how the organization could be improved
   * Suggestions are often discussed at meetings, and with the employee who made the suggestion often being responsible for implementing it
   * Allows for improvements to be made by an employee actually dealing with a problem at the front-line (rather than from top-down)

• Standardized work processes
   * Clear documentation that shows how all work should be done
   * Evident in Standard Operating Procedures (or SOP)
   * SOPs can change over time as workers see improvements that can be made

Artifacts (an organization's tangible manifestations of culture that include physical representations of both assumptions and values)

• Setting up *kanbans*
    * Literally means "card"
    * Signal for movement

• Andon   * Signal that shows there's a problem (perhaps like a warning light)
• Mistake-proofing   * Finding a way that mistakes can't be made

• Employee treatment
    * Job-rotation—so that employees do not get burned out doing one thing only and so that they can be flexible if they are needed in a different area
    * Training for employees—to do this, all employees need to be educated about an entire process
    * No layoffs

• Process
    * Pull system—production/movement of materials occurs only when it is pulled for by the customer
    * Small batches—making to order to avoid excess inventory lying around

Table 1: Elements of Continuous Improvement Cultures

Underlying all these tools and artifacts noted above are the assumptions that continuous improvement is crucial for survival and that all people should be respected. Together, these drive the values noted above which, in turn, drive artifacts related to customer service, the importance of employees, and problem solving. Indeed, these artifacts cannot survive in an organization without first possessing values and assumptions that support them (Urick & Crandall, 2012).

Lean and OE principles are applicable in any type of industry, yet many companies do not adopt them because the assumptions are challenging for many organizations that focus solely on cost to compete (which is a short-term focus inconsistent with sustainability). In addition, OE can be expensive and time consuming to implement. As such, even if an organization does accept these assumptions, it can be costly to implement the artifacts when immediate benefits are not

seen (Womack, Jones, & Roos, 1990). Continuous improvement requires continuous change in process—either small incremental ones or a sea change. Oftentimes, however, employees do not totally embrace change, with some of the causes for such resistance being selective attention and memory, employees' habits, fear of the unknown, economic reasons, and (perceived) lack of safety (Tudor, 2014). Yet organizations that are able to progress on their journey toward operational excellence will often see positive benefits, including an improvement in the quality of products and services as well as in the ability to respond more quickly to customer and market demands (Carvalho, Sampaio, Rebentisch, & Saraiva, 2017). OE also allows for improved efficiency, just-in time production and inventory systems, and cost savings (Al Haraisa, 2017).

LINK TO SUSTAINABILITY

Sustainability is perhaps the most important outcome of operational excellence (Urick et al., 2017). Sustainability allows for long-term focus on efficient use of resources, minimal environmental impact, and responsible economic development (Brown, Hanson, Liverman, & Merideth, 1987). As such, it has been linked with ethics related to proper resource utilization, quality, and other corporate social responsibility initiatives (Wuijts, Driessen, & Van Rijswick, 2018).

OE initiatives, therefore, are crucial to sustainability. As noted above, OE focuses on proper use of resources through waste minimization, advocating processes that allow for proper stewardship of resources while ethically working toward improved quality for customers and other stakeholders (Urick et al., 2017). This component of sustainability in particular—ensuring that the environment is cared for—is an element of continuous improvement noted by organizations who engage in such initiatives (Schroeder & Robinson, 2008).

ORGANIZATIONAL CULTURE

Operational excellence and, by way of extension, sustainability cannot be adequately achieved unless an organization's culture supports such initiatives (Shuttleworth, 2017). Yet as crucial as it is, implementing a new culture can be quite difficult and filled with barriers (Urick & Crandall, 2012). Table 1 (above) breaks down the elements of culture by providing examples of common elements shared by organizations far along their operational excellence path.

Organizational culture has had many definitions (Martin, 2001). Some researchers, for example, have defined culture as a way for managers to influence expected employee behavior; as such, it serves as a social order that guides interactions (Denison, 1996). Others have suggested that it is a system of shared understanding (Alvesson, 2012) that creates an expectation for the way things are done in an organization. In essence, most definitions tend to agree that an organization's culture represents forces that normalize appropriate behavior (Martin, 2001).

Strong cultures, meaning those that have values that are well-known and enacted by all their employees (Daft, 2007), make organizations more predictable because all their employees think, act, and believe the same things. But if the values of the culture relate to constant change and innovation, the only behavior that may be predictable is that the organization will change. This, perhaps, is because cultures have a strong influence on organizational processes. A culture creates physical manifestations of values that are experienced in organizations, including the processes that are used to get work done (Deal & Kennedy, 1982). If an organization has processes that allow for waste reduction, cross training, and problem solving, and also values continuous improvement, it will likely adopt an OE culture. It is therefore apparent why culture is extremely important on a journey toward operational excellence. Indeed, if a culture is strong and has values that run counter to continuous improvement initiatives, implementing operational excellence will be challenging.

Cultures have three levels which are often labeled as artifacts, values, and underlying assumptions (Schein, 2010). Artifacts are physical manifestations of the culture that can be experienced with the senses. These could include language, workplace layout, meeting rituals, and processes, to name a few (Deal & Kennedy, 1982). Values are stated or enacted ideologies, ideals, goals, or aspirations. Examples could include the value of diversity, sustainability, creativity, or continuous improvement (Schein, 2010). Underlying assumptions are unconscious ideas or concerns that are often taken for granted. These often come, for instance, from a founder's beliefs and are often not articulated because they are so strongly assumed (Schein, 2010). Assumptions thus drive what is valued, and values in turn drive artifacts. To change a culture (such as moving it toward continuous improvement), therefore, one must change the assumptions level. Yet changing organizations in general is difficult, and there are many barriers to changing specifically cultural assumptions. We broadly note the importance of change below, immediately followed by a discussion on more barriers particularly toward changing to an OE culture.

CHANGE MANAGEMENT

Managers and business leaders around the world are confronted with many problems during the business life cycle. The ability to create organizations comprised of workers that embrace change, for example, is a major challenge for companies (Cummings, Bridgman, & Brown, 2016). A solid comprehension of change management, defined as a process involving tools and techniques that facilitate the human aspect of change within a business to achieve organizational objectives (Berstene, 2014), is therefore necessary because the process of change within organizations is a human process accompanied by varying levels of resistance (Vey, Fandel-Meyer, Zipp, & Schneider, 2017). Employees have a natural tendency to oppose making changes in the workplace because doing so requires disconnecting from the old ways of accomplishing tasks and achieving organizational objectives (Ceptureanu, 2016). In many instances, therefore, the changes are difficult and may create unpredictability for workers, thereby hindering the capability of managers to implement the change process in an effective manner (Basu, 2015).

Nevertheless, given the volatility of business environments across all industries, organizational leaders must focus on increasing the ability of their workers to react quickly to change (Medeiros, 2016). Change initiatives require employees to make fundamental shifts in their thought processes and actions which help them adapt to changing business needs (Zecheru, 2015). Managing change is also viewed as an approach to restructuring business processes to create long-term and continuous improvement in the ability to meet customer needs (Morin, Meyer, Bélanger, Boudrias, Gagné, & Parker, 2016). When changes are needed, they are often associated with a desire to improve on business capabilities, including reduced costs and increased product or service quality as well as service speed (Basu, 2015), to become more sustainable.

While much of what is addressed above is related to changing an organization's culture, firms are also influenced by the national culture in which they operate. This can provide some resistance—the ideals of continuous improvement, for example, fit well within the context of Toyota's Japanese-based culture but presented cultural change that was difficult to implement, at least at first, when they tried to open their manufacturing facilities in the U.S. (Liker & Hoseus, 2008). Indeed, much has been written about barriers to changing a culture (Burke, 2017 and noted above) in general, with pieces about Toyota among the few that specifically mention change toward continuous improvement. Consequently, and because most continuous improvement research is not

related to the social aspects of organizations such as culture, we wanted to explore how culture and social change are related to operational excellence. We describe our approach in the methods section below.

BARRIERS TO BUILDING AN OE CULTURE

The extensive usage of continuous improvement methodologies (such as operational excellence or lean) in multiple industries as organizations try to change their culture has raised concern about implementation barriers. Čiarnienė and Vienažindienė (2013) divided the issues and problems when facing lean implementation into three parts: the people issue, the process issue, and the sustainability issue. Significant barriers relating to people include resistance to change, perception and lack of knowledge, the identity of improvement team members, and poor communication. Primary obstacles relating to the organization are compartmentalization, hierarchy, cultural issues, high implementation costs, lack of resources, the weak link between improvement programmers, strategy, data collection, and performance measurement. A specific case study in the Greek manufacturing sector tried to divide the barriers into four different segments. These are financial barriers (investment and cost), top management related barriers (lacking knowledge and understanding of continuous improvement), workforce associated barriers (fear of job status), and other obstacles (such as the difficulty of convincing the board about the significant benefits of continuous improvement implementation) (Salonitis & Tsinopoulos, 2016).

Both studies (Čiarnienė & Vienažindienė, 2013; Salonitis & Tsinopoulos, 2016) hint at social barriers related to continuous improvement implementation but are limited by both their lack of description and their lack of data to back up their claims. As such, while the two pieces taken together offer a comparison and case studies of barriers to continuous improvement in different geographic (as well as, presumably, organizational) cultures, they do not fully develop whether or not these barriers would be consistent around the globe. In fact, and more relevant to this article, social barriers were not the focus of either piece of research as they comprised only a small portion of the discussions. Indeed, social barriers to continuous improvement have received limited empirical examination in the literature.

Given that operational excellence is fundamentally related to an organization's culture (i.e., a major social consideration of organizations), it is unfortunate then that social barriers as they relate to barriers of continuous improvement have not been adequately explored. Changing

cultures to become focused on continuous improvement is difficult, especially because doing so requires strong leadership and a clear vision. We ask the following question, therefore:

What is the nature of social barriers as they relate to implementing and sustaining operational excellence and continuous improvement initiatives?

METHODOLOGY

We employ a grounded theory approach (uncommon, perhaps, for research on continuous improvement and operational excellence) that best allows us to explore social barriers in the workplace, one (Glaser & Strauss, 1967; Strauss & Corbin, 1998) in which theory emerges from an interactive process. With this methodology, qualitative data are compared and analyzed for themes and relationships, and the researcher develops or extends theory through personal observations of social processes that were gleaned from collected data. Grounded theory, moreover, lends itself best to our research question as opposed to other simpler qualitative methods. It is exploratory in nature and should be used when researchers have no a priori hypothesis and seek rather to explore the "nature" of a certain phenomenon. Other qualitative methods (such as a thematic analysis) could influence researchers to have expectations about themes that they are looking for in the data (Huff, 2008). Grounded theory, therefore, is the best approach to use for our purposes as we had no a priori themes; rather, we let the themes that we report below emerge from the data given the nature of our research question.

Interview Protocol

We used an interview-based approach while developing our interview iteratively following the collection and analysis of data and while considering relevant extant literature. This is appropriate in a typical grounded theory approach as earlier interviews should inform later ones (Glaser & Strauss, 1967; Strauss & Corbin, 1998). The protocol thus went through several slight revisions throughout the study, with questions being adjusted to reflect more closely those directions the data were leading us into. Our usual initial question that we asked interviewees is "Does your company have a culture that values continuous improvement, waste reduction, and problem solving?" while another sample question would be "What are some barriers to implementing OE?".

Samples

Experience with OE and involvement in a graduate program were the qualifications for our interviewees that allowed us to draw on a breadth of experience from different industries and lengths of time in the workplace while ensuring that we had a sample that understood basic operational excellence concepts. This study thus leverages individuals associated[1] with a mid-Atlantic U.S. college graduate program focused on continuous improvement, waste reduction, and problem solving. There were 13 interviewees from this sample in the study, 3 of whom were female (23%) and 10 were male (77%). One interviewee asked to stop the interview early and wished not to have her/his answers included in our analysis. All of them currently held professional roles within an organization and had work experience ranging from 1 to 45 years (average of 21 years). The average age was 49, with ages ranging from 23 through 63. Participants in the program worked in a variety of industries and professions including manufacturing, healthcare, higher education, information technology, and human resources. Degrees ranged from undergraduate to doctoral degrees. All interviewees reported that the companies they worked for strove to adopt an operational excellence mindset; indeed, having an OE mindset qualified interviewees for this study because it ensured that we were examining cultures that were attempting to focus on continuous improvement.

The Institutional Review Board (IRB) at the researchers' institution, after reviewing and subsequently approving the research design, required that participants sign a waiver and that data remain as confidential as possible. Thus, after a member of the research team recruited participants via an email explaining the nature and process of the research and inviting them to schedule an interview time, each participant received and signed a waiver prior to participating in the study. They were also provided once again with a description of the nature of the research at the beginning of each interview and told that they could quit at any time. Transcripts of each interview, which omitted participants' and employers' names as well as other proper nouns that might distinguish individuals during the coding phase, were locked in the lead researcher's office. The audio files of each interview were maintained on secured devices in the control of the researchers, consistent with IRB ethics requirements.

In qualitative grounded theory research, generalizability is not the overall outcome. The goal instead is to generate a theory by collecting a variety of different perspectives. Our sample (which represents a broad

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[1]Current students, graduates, or adjunct instructors that had business experience with lean or operational excellence initiatives.

range of ages and tenure) thus allows us to analyze a variety of different perspectives to generate a more inclusive model of social barriers in implementing OE.

Data Collection and Analysis

Three researchers conducted the interviews, which lasted approximately half an hour each, to avoid interviewer bias. Interviews were semi-structured, that is, while certain questions on the protocol were asked of each interviewee, interviewers probed further on interesting issues and comments that arose during the conversation. All of the interviews were recorded and professionally transcribed verbatim.

Data analysis followed the tradition of grounded theory (Glaser & Strauss, 1967; Strauss & Corbin, 1998). We used a two-step, fine coding system in which themes emerged inductively from the interviews. First, every interview transcript was independently coded by at least two researchers trained in the grounded theory approach. Moreover, in addition to adding codes to the transcript, coders also "memoed" or took notes on trends, relationships between codes, thoughts and questions, and interesting patterns to help with subsequent investigation (Charmaz, 2006). We later drew on these memos to help stimulate our thinking and organize ideas for our analysis.

Second, all transcripts were examined in joint meetings where two or three coders discussed the independent codes assigned before negotiating a final set of codes. This is because traditional interrater reliability measures are made impractical with this method as new codes emerge in each coding process and are not determined a priori (counting the number of times a code occurs is also typically not done in grounded theory studies). During each meeting, one coder served as record keeper (who recorded codes on a master transcript and updated the dictionary, a document in which all codes and their precise meanings were indexed) while another compared codes between researchers. Code length ranged from several words to multiple pages, and any discrepancies in codes were resolved through discussion. However, while this analytic method has been used successfully in multiple qualitative studies (e.g., Ashforth, Kreiner, Clark, & Fugate, 2007; Corley & Gioia, 2004), the entire research team met at the conclusion of the data analysis process due to the fact that only two rotating researchers participated in each coding section. The team then went on to achieve 100% agreement on the themes (derived from the codes) that were included in this study.

To analyze the codes, we searched on key codes to facilitate links between codes, performed searches of text and subgroups, established coding relationships, and looked for interactions between the codes. In establishing relationships between codes, we also examined the attributes of interviewees (such as age, gender, education, years of experience, industry, etc.); in doing so, no major differences were found between attributes.

The process of aggregating categories from codes followed a two-order approach as noted by Van Maanen (1979) and Gioia (1998). First-order codes were identified first and then categorized into second-order themes. Relationships between these themes then formed the basis for developing testable propositions. This analytic method thus moves from codes to more conceptually abstract categories.

Using a grounded theory approach also allowed us to move iteratively between emerging data and theory. We thus immersed ourselves in the literature to help ourselves see connections between the two, and considered codes that emerged from early transcripts in developing questions for subsequent interviews (theoretical sampling). Theoretical saturation, however, which signals an end to the data collection process at the point where new codes are no longer emerging, occurred at 12 complete interviews. A lack of additional interviews in our analysis could thus be a limitation (which we take note of later).

RESULTS

Our interviewees noted two interesting findings related to barriers in making organizational culture focus on operational excellence. The first phenomenon that emerged was that social barriers (defined by our interviewees as non-technical, non-process-oriented, or non-tools-related obstacles that were more related to how people interact within organizations) represent the greatest issues when trying to implement operational excellence. The second phenomenon that we noted was that social barriers that held back continuous improvement initiatives were focused around interpersonal (e.g., communication challenges, unwillingness to change, and workplace relationships) and organizational (e.g., employee treatment, cultural values, and formal organizational characteristics) issues in particular. These two emergent findings are considered below. Note that we leverage anonymously assigned numbers in the representations of our data that follow, numbers that we used

to organize our data while maintaining the confidentiality of our participants. Moreover, while the narrative below presents the three major themes (strength of social barriers, interpersonal social barriers, and organizationally-based social barriers) that emerged through our data analysis, it provides limited illustrative quotes (our primary data) and essential details about each theme for the sake of brevity. In this regard, Table 2 presents some additional quotes and details related to the themes that emerged.

MAJOR EMERGENT THEME: Strength of Social Barriers	
This theme was represented when interviewees discussed how weak or strong social aspects of OE implementation were in comparison with other potential barriers (such as technical or tools-based ones).	
Detail	Focus on social first: social barriers were stronger and more important than other aspects of OE implementation and so interviewees had to address them first before they could/should even think about other elements
Example Quote	"At first we realized that there was a huge problem. There was a huge communication barrier that was going on between us and our employees. Before I started (implementing OE), before implementing any tools, before making any changes on employees, they needed to start learning what real OE is." (Participant 4)
Detail	Impossibility of implementation without addressing social barriers: interviewees note that culture will not change in an organization unless social barriers are addressed
Example Quote	"Because of this kick-off years ago, engagement has really transformed within the hospital system here. People are much more willing to speak not only within their departments but to cross department lines. That's a culture change right there and that really broke down some barriers. We have follow-up meetings, you know, the daily meetings within the departments. Highlights get escalated up to ultimately the VPs by the end of the day and that information is collected and used as necessary. So we talk about it at meetings, we talk about continuous improvement at lunches. It's really becoming embedded in our culture." (Participant 2)

MAJOR EMERGENT THEME: *Strength of Social Barriers*	
Detail	Difficulty: interviewees state that the most difficult, though important, part of implementing OE is breaking down social barriers
Example Quote	"The technical aspect is easy. People will get that. But immediately they (employees) will be thinking that if five people are going to do this job (previously done by eight), what will happen to the other three people? And then it goes immediately to the social aspect. So, at that point, you have to be really careful what you are doing. You have to definitely tell them [that] the other three people will go [to] different departments that we need other people [in]. So if you don't put this social aspect in there, and you just give them the technical aspect— that five people is enough—you will lose the other three people." (Participant 4)
Detail	Size of organization does not matter: regardless of the size and location of operations and the number of employees, the fact that social barriers are the most crucial element to address in implementing OE remains consistent
Example Quote	"The acquisitions that (company name) has made, okay, they brought in a number of different companies [that] are in varying degrees of an operational excellence culture. Some of them may be just starting off; others may be further along in the journey … some of it may have to do with how certain leaders have embraced operational excellence." (Participant 8)
MAJOR EMERGENT THEME: *Interpersonal*	
These are the social barriers related to interactions and relationships in the workplace.	
Detail	Communication: the style, chain, and message of communication between organizational members (as well as ineffective training initiatives) can present barriers to implementing OE
Example Quote	"I think barriers could be … the communication around it (OE initiatives). You know, what does OE mean? And why is it important? And what are the objectives? And what do you hope to accomplish through OE?" (Participant 3)

MAJOR EMERGENT THEME: Interpersonal	
Detail	Naysayers: some organizations have individuals who like to disagree with or say "no" to new things, thereby creating barriers to implementing OE
Example Quote	"You really need to get some of the … naysayers who are on the negative end. But some of them, the naysayers, if they participate in some of these projects, they can become your strongest leaders. I think again part of it is training, part of it is developing the understanding and getting more and more people involved." (Participant 8)
Detail	Identity groups: some organizations possess an "us vs. them" mentality and are cliquey in nature—specific examples could be divisions arising from interpersonal differences, union and non-union relations, and tensions between departments that are evident barriers to implementing OE
Example Quote	"They (previous continuous improvement initiatives) didn't lead the changes in job descriptions because we have a union environment here and to change a job description is not really that easy." (Participant 7)
MAJOR EMERGENT THEME: Organizationally-based	
These barriers to implementing OE are related more to macro-level social organizational concepts such as structure and culture	
Detail	Lack of empowerment: organizations that do not allow for employees to have a say in how OE is implemented receive pushback on OE initiatives
Example Quote	"Most of what we coach is that people should be solving problems at the lowest possible level. So, it's about empowering your people to solve their own problems. We have to remind the managers all the time that problems that get posted are not your problems to fix. If somebody puts a problem up like we don't have enough syringes in the stockroom, give it back to them and say, 'send an email, put a ticket in to materials management.' We have to coach them that all the time because they want to—they feel like as managers it's all their responsibility, but they don't have to actually be the ones working on all the problems." (Participant 9)

MAJOR EMERGENT THEME: Organizationally-based	
Detail	Current values of the culture: some of the values currently inherent in the organization are incompatible with OE cultures, thus making continuous improvement difficult
Example Quote	"The last couple years … people were not really living the culture of continuous improvement. They were trying to hit numbers. So, for example, if you had to have 30% of your employees with a green belt certification, people driving the behavior were just getting certifications and not really applying the continuous improvement mindset throughout the organization … it's [a continuous improvement mindset] not as strong as it should be." (Participant 3)
Detail	Formalized organizational social characteristics: things like job titles, the role of leadership, formalized policies, and the size/structural location of groups/departments get in the way of implementing OE
Example Quote	"If you have a manager or a leader in your department who are [sic] opposed to it (OE), the employees are going to see that and they're not going to want to continue. But if the leaders are willing to find change and do things in a more efficient manner and do things in a way that's going to aid the company in moving forward, the employees are going to see that. And so I do think that the leaders and managers have the biggest role in that (OE implementation)." (Participant 5)

Table 2: Emergent Themes from the Data Related to Social Barriers of OE Implementation

Given the sample data presented in Table 2 and used below to illustrate the themes of social barrier strength, interpersonal social barriers, and organizationally-based social barriers, we identified three implied hypotheses in the form of propositions that can be used to guide future (perhaps more quantitative hypothesis-based) research. They are as follows:

- Social aspects of work represent major barriers to implementing continuous improvement and operational excellence initiatives.

- Social barriers to implementing OE can stem from interpersonal factors such as communication issues, an unwillingness of some colleagues to embrace change, and workplace relationships.

- Social barriers to implementing OE can stem from organizationally-based factors such as employee treatment (including level of accountability and empowerment), cultural values inherent in the organization, and formal organizational characteristics (including formal titles, leadership commitment, size of group/groupthink, and education/training).

Strength of Social Barriers

When we asked the interviewees about what barriers contributed the biggest challenges to effective operational excellence implementation, they each stated that social barriers represented the largest such obstacles. In the quote below, a participant with a strong engineering background notes that leveraging technology right away for continuous improvement will get an organization nowhere if the social elements of work are not engaged.

> If you don't get the people engaged and you can throw technology at stuff … it's only as good as the people that are willing to use it. But, if you get people thinking and engaged [in] what they are doing, you don't always have to throw technology at things right away.… It's more important to engage the people. They are the primary resource in the organization. (Participant 1)

In line with such statements that focus on engaging people (i.e., the social side of work) before considering technology, another participant, who works in the HR group of a manufacturing organization, made a similar comment about giving preference to people before attempting to implement common continuous improvement tools.

> Definitely it is the people side [that is the strongest barrier]. No question. Because it is the culture change … if the hearts and minds aren't in it, you don't have the human factor. If the culture is not there, it ain't going to happen. If you don't have an OE culture, it's not going to happen. That's one of the biggest obstacles to sustaining kaizens and 5S and the projects and events that we have here—the culture is not there yet. (Participant 6)

Indeed, when asked what the most difficult part of operational excellence implementation is, yet another interviewee, this time from a healthcare background, gave a similar statement:

> I think the toughest part is the social elements [sic]. I feel like, pushing five thousand employees, there is [sic] a lot of brain-power problem-solving capabilities where people are not convinced that it (continuous improvement) is worth their effort. It is not going to happen. (Participant 2)

Change will not occur, therefore, unless an organization overcomes social barriers (e.g., convincing employees of the importance of change). This applies to companies that possess a large number of workers with the capacity for problem solving, like that of our interviewee above, just as well as it does to smaller ones, as noted by a manufacturing supervisor:

> I think it (the hardest barrier) is the social side for me. Mainly, as a small company, we try really hard to keep that small startup business mentality … there are lax rules and we are not a very regimented facility. So, when you want to tighten up the reins a little bit, there is always that little bit of pushback and the feeling of "Oh man, we have to be at a job now." (Participant 10)

Social barriers thus represented significant challenges for the interviewees' organizations, all of which hoped to implement operational excellence regardless of size or industry. As such, we examined what our participants specifically meant by the term as it was discussed in each of the interviews. The two major categories our interviewees labeled as "social barriers"—interpersonal and organizationally-based—are thus presented below.

Interpersonal Social Barriers

Interpersonal social barriers stem from relationships that employees have with each other in the workplace. Many of our interviewees discussed these obstacles to lean implementation, and noted issues with interpersonal communication as barriers to OE initiatives. Difficulties with communication style, channel, or the message itself, among others, could be related to poor communication overall which, as the below quote illustrates, can hinder continuous improvement implementation by contributing to waste (in this case, the waste of movement):

> When you think about OE, there will be seven big wastes … the biggest problem, as you can imagine in the south, is transportation. So, I have heard

the examples of when my team first started to detect this waste. "Okay, this is some unnecessary motion in transportation going on here so we need to act on it." There wasn't great communication … so, even if we are able to detect the problems, defects, or any non-value added activity, we won't be able to take any actions … the doors are closed. (Participant 4)

As this interviewee points out, "the doors are closed" due to what he alludes to as communication perceived as blaming someone else for waste. Some parties in workplace relationships are simply unwilling to change, whether because of blaming, other communication issues, or something else within the organization. In many instances, our interviewees reported "naysayers" who rejected change generally or moving toward OE specifically because of who suggested it or because they perceived the initiative as doomed to fail. In the example below, the interviewee notes intergenerational conflict driven by his/her generational stereotypes (see Urick, Hollensbe, Masterson, & Lyons, 2016 for a discussion of intergenerational conflict) that leads to an unwillingness to change.

I do find that older generations are less apt to want to change. They've been doing the same thing for years, but we're creating new processes … and they don't want to do it. They keep fighting it. They don't understand why they just can't do this (the old way) and write it down. You know, paper gets lost and your writing isn't legible sometimes. I find that, there's a lot of frustration … less willingness to want to change. (Participant 5)

This interviewee suggests generations as identity groups that people use to classify each other into "us vs. them" categories. But generations did not comprise the only identity group that led to perceived interpersonal differences and thus to barriers in implementing OE. In the quote below, our interviewee notes interpersonal conflict over union and non-union employees that leads to a strong barrier.

In a union environment, it is tougher (to implement continuous improvement) because then you have to negotiate. Because now, they would say you are significantly changing that person's job and the conditions of work. (Participant 6)

In the quote above, the interviewee highlights interpersonal relationships that must be managed through interpersonal interactions (i.e., "negotiation") to implement continuous improvement. Other interviewees noted more informal relationships (such as friendship) as influencing implementation—individuals are likely to be influenced by

friends at work regarding whether or not OE implementation is a good thing. Participants likewise remarked that colleagues would rely on the perspectives of parties they greatly trusted regarding whether or not to accept continuous improvement initiatives.

Organizationally-based Social Barriers

Our interviewees also reported organizationally-based social barriers. More formal in nature, these barriers are still related to social phenomena (such as interactions) in the workplace but more so to structural elements at the macro-level of organizations. For example, one barrier was related to how employees were generally treated within an organization—our interviewees suggested lack of empowerment as an obstacle to getting employees to accept continuous improvement. As the quote below from an IT executive points out, employee treatment such as empowerment and making them accountable is closely related to whether or not operational excellence is accepted.

> One way (to encourage continuous improvement) is to give them (employees) accountability. Let them experience things. Don't just speak [to] them. I think most of it is just giving them opportunities to be successful[,] to feel like they have a say in what happens … energize them. Make sure they feel like they are part of achieving the strategy. (Participant 3)

How employees are treated in an organization could stem from the values of its culture. However, values go much more beyond employee treatment—the overall values of a company's culture influence whether or not its people are receptive to continuous improvement. In the quote below, for example, an interviewee discusses how her/his company's cultural values refuse to admit that the organization is in competition with others, thereby limiting OE implementation.

> In a lot of ways, we still act like a start-up. We don't want to admit that we're trying to be a competitive business … we don't have an organized program moving forward towards a defined lean culture. (Participant 10)

An organization's cultural values are also inherently linked to more formalized organizational characteristics. Many of our interviewees described the role of job titles, leadership, group size (which could be related to groupthink), and education/training in creating barriers to continuous improvement. Below is an example that illustrates how job titles, for instance, can be contentious with regard to continuous

improvement initiatives while acknowledging the challenges of training that organizational leadership sought to implement.

> I think the social elements may be more critical at our state. It is like having a toolbox. I've got a hammer. I've got a saw—that kind of thing. You can train people how to use the tools many times, but trying to get more people trained and involved and picking out the right tool to use for the right issue is, I think, important. We really haven't done enough training with people on that. It's been more of a select group of what we call SMEs, subject matter experts that used to be called black belts. But, I think the statistical process control people got upset with that so we changed them to be called subject matter experts whether it be in 5S, changeover, value stream mapping, standard work, or whatever the tool may be. (Participant 8)

This quote illustrates that while continuous improvement tools are useful, the most challenging part is training enough people and getting them to understand when these tools should be used. The interviewee even notes the contentiousness related to specific titles (i.e., black belts vs. SMEs) which hints at competing methodologies (i.e., lean vs. six sigma) to get to the same goal of being a continuously improving culture. This disagreement over specific methodology, as evidenced by conflict over formal titles, represents a barrier to continuous improvement implementation. We therefore suggest implications and applications of our findings in the next section.

DISCUSSION

Our research presents several interesting findings that contribute to the literature on operational excellence and sustainability. They suggest that social barriers are strong indeed when implementing operational excellence—at least as strong as, if not in many cases possibly stronger than, technical or tools-based ones. This is new to the extant research on why continuous improvement is not adopted more often. Indeed, we identified two specific categories of social barriers—interpersonal and organizationally-based—that must be considered when trying to undertake an operational excellence transformation. These two areas, as we note below, also present a potentially fruitful research stream as they have not been adequately explored in the literature on operational excellence.

This study is, to the best of our knowledge, one of the first to explore social barriers in a systematic, rigorous, and qualitative manner in an

effort to guide future quantitative hypothesis-based research. Given that operational excellence is a developing concept with a somewhat cloudy definition, OE studies could stand to use more guidance in the types of questions they explore. This study would thus be helpful in guiding future research by supporting the development of a theoretical link between sustainability, social barriers, and OE culture implementation.

Implications for Practice

This article presents a stepping stone toward the holistic understanding of why sustainable continuous improvement initiatives are resisted in organizations. In this study, we interviewed a wide range of individuals holding a variety of job titles and with varying levels of experience from different functional areas. The commonality of our interviewees was that they were all part of organizations that were attempting to implement an operational excellence environment. Regardless of the organization's or individual's specific work situation, however, all of our interviewees noted that social barriers to OE implementation were often stronger than the more technical issues. Each of them also clearly articulated ways in which individual level and organizationally-based barriers occur.

These findings are important because the social barriers that we uncovered here can help leaders understand why continuous improvement initiatives might be resisted in their organization. As noted earlier, many organizations find challenges in implementing continuous improvement, and leaders, who set the tone for driving lean initiatives from the top, might become frustrated when they are confronted by barriers. Our examination of social barriers can help alleviate this frustration by hopefully giving leaders and organizations more insight into the matter.

The inverse of some of these barriers might likewise be helpful as leaders develop strategies to implement continuous improvement. As noted above, for example, poor communication is a barrier related to lack of OE acceptance. Knowing this, leaders can further examine those aspects that make communication ineffective and address such problems to break down the communication barrier. Training, another major issue noted by our interviewees, is another instance. Leaders in the know might be able to empower HR departments to examine the types of training needed (as well as who should attend) while making the technical side of continuous improvement not the sole focus but rather inclusive of conversations about employee empowerment in decision-making and why OE is necessary.

This research also has implications for academic institutions. Many of the courses related to lean, six sigma, and operational excellence in some business and engineering programs focus on understanding the technical side of continuous improvement. They fail, unfortunately, to address related social barriers well enough. Including some concepts from the field of organizational behavior would thereby inform them of such obstacles and enable them to approach such. This research, therefore, is useful for academicians who set program and course curricula to ensure that they include social barriers in their discussions on continuous improvement.

Implications for Sustainability

Very few studies have considered sustainability and operational excellence in tandem, yet it becomes immediately apparent as one reads through the elements of OE culture that its practices are necessary to achieve sustainability. Thus, while organizations have apparently struggled with both continuous improvement and sustainability over the past several decades, it is our perspective that working to implement an operational excellence culture will greatly help organizations become more sustainability-oriented.

Our linkage of OE and sustainability is also crucial especially because we emphasize the social barriers associated with OE. It stands to reason by extension, then, that organizations who struggle with sustainability initiatives would be best served by understanding the social barriers to becoming more sustainable. Indeed, just as organizations need to address social barriers to become more focused on continuous improvement, addressing similar social barriers will also help them to become more sustainable as well.

LIMITATIONS AND FUTURE RESEARCH

Despite its contributions, this study does have some limitations. The first is related to our sample—because each of our interviewees was involved in some capacity with an academic program related to continuous improvement, it is possible that they are biased to think about operational excellence in the same manner. We also noted some homogeneity with regard to the sample as a large majority of interviewees were male and all were from a similar geographic region. Thus, even though the role of qualitative grounded theory research is not to be generalizable to all contexts (it is rather to describe a phenomenon and provide guidance for future empirical testing to examine generalizability),

these issues with the sample could suggest that a limited number of perspectives were analyzed. We therefore suggest similar qualitative studies that leverage more gender-, geographically, and academically diverse samples be undertaken in the future.

Likewise, we achieved theoretical saturation (the point where new phenomena were no longer emerging during coding) at twelve interviews. Perhaps such a number is limited, even though all researchers agreed that saturation was reached. For future research, therefore, we recommend adding more interviewees (that are diverse in the ways noted above) to see if saturation occurs or if new phenomena continue to emerge from the data after a similar number is reached.

We also suggest that quantitative empirical methods be employed in additional future research to test our findings. Indeed, while our methods suggest descriptive rather than generalizable results, our findings can be tested using statistical processes to examine whether or not they do generalize to multiple situations.

Lastly, while organizational leadership can examine some of the barriers further to develop strategies for overcoming implementation issues, we did not explicitly ask interviewees about strategies that they employed to overcome such barriers. Nor did we ask those interviewees that voluntarily shared how they overcame social barriers how effective their strategies were. Future research should thus consider the types and effectiveness of strategies for overcoming social barriers to continuous improvement.

CONCLUSION

This study has made several major contributions. First, our interviewees articulated that social barriers are powerful forces of resistance. Second, we describe, using examples from our interview data, both interpersonal (e.g., communication challenges, unwillingness to change, and workplace relationships) and organizationally-based (e.g., employee treatment, cultural values, and formal organizational characteristics) social barriers. Third, this research is, to the best of our knowledge, one of the first qualitative studies to explore operational excellence and continuous improvement. Finally, this study explicitly links OE and sustainability and suggests that to achieve both, organizations must break down social barriers to reap positive results. We ended with future recommendations for research that can address some of our study's limitations.

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