Assessing the Applicability of Hofstede's Cultural Dimensions for Global 500 Corporations' Facebook Profiles and Content

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Abstract

This research examines how Hofstede’s six cultural dimensions are reflected on the official corporate Facebook pages from 259 organizations on Fortune magazine’s Global 500 list. This research is grounded in original indices to measure the six dimensions across Facebook’s “About Us” section, the textual updates provided by the companies, as well as the media that they share (photographs and videos). This is the first attempt to create a conceptualization of Hofstede’s dimensions for organizational social media use. The results paint a mixed picture indicating that the global nature of these corporations is echoed in a somewhat similar overall presence on Facebook; but when the individual elements (About Us, updates, and media) are examined, statistical differences emerge in relation to the reflection of the cultural dimensions. Limitations and directions for future research are discussed.
Introduction

Through the 1960s and 1970s, as international business gained momentum in the aftermath of World War II, the ways in which differences of national culture impacted business and management became increasingly more apparent. Concurrently, scholars in anthropology (e.g. Hall, 1971, 1981; Kluckhohn & Strodtbeck, 1961), through their investigations of culture, were starting to codify specific cross-cultural differences. Thus, while international business was starting to accelerate, new ways for understanding cross-cultural differences were starting to appear in other disciplines. It would not be long before management scholars started to examine cross-cultural differences in organizations, as it was apparent that understanding these differences was key to improving international business ventures.

As researchers started to apply a cross-cultural lens to organizational research, the intricacies of culture started to appear. Triandis et al (1988) stated, “Culture is a fuzzy construct” (p. 323) indicating that understanding culture in any socio-psychological context necessitated a comprehension of dimensions of cultural variation. It is from this point of understanding dimensions of culture that cross-cultural organizational research has its genesis.

The Internet has presented scholars studying cultural and international business with an interesting platform for studying traditional cultural characteristics. With organizations reaching across the globe with business transactions, do they preserve the cultural traditions where they are headquartered, or do they attempt to carry out business using a cross-cultural strategy? Scholars have concluded that the Internet has had mixed results in terms of impacting an individual’s culture as studies have shown that culture
has been reinforced and preserved through selective interactions online and that cultural boundaries have fallen to a new virtual culture when individuals meet and engage with others from around the world (McEwan & Sobre-Denton, 2011; Tange & Lauring, 2009; Van Dijck, 2013). This exploratory study seeks to explore the presence of traditional cultural characteristics using Hofstede’s cultural dimensions on the Facebook pages of the corporate organizations on Fortune magazine’s “Global 500” list. Through the analysis of the organization’s postings, their “About Us” self-description, and their visual representation, the purpose of this research is to determine how well Hofstede’s cultural dimensions apply to a virtual culture on Facebook as used by Global 500 corporations.

**Literature Review**

**Culture in Organization Research**

The earliest studies of culture in organizations did not borrow the existing theoretical frameworks from anthropology. Rather, the first, large-scale study of cross-cultural differences in the workplace was conducted by Geert Hofstede using data from IBM from the late 1960s and early 1970s. The findings of this study were published in a book that set the stage for understanding cross-cultural differences in organizations. *Culture’s Consequences* (Hofstede, 1980) codified culture along four dimensions: individualism-collectivism (IC), masculinity-femininity (MF), power distance (PD), and uncertainty avoidance (UA). Table 1 offers a brief explanation of each dimension.

**Insert Table 1 About Here**

A few years later, a team of researchers who called themselves the Chinese Culture Connection found a dimension of culture, which they called Confucian
Dynamism, that did not correlate to any of Hofstede’s original four dimensions (Chinese Culture Connection, 1987). Further work in this area by Hofstede and Bond (1988) and Hofstede (1991) renamed this dimension “long-term orientation” (implicitly contrasted to short-term orientation) and informally was referred to as “Hofstede’s Fifth Dimension.”

Hofstede, Hofstede, and Minkov (2010) added more cultures to the original Hofstede (1980) sample and refined the dimensions by adding a sixth dimension: indulgence-restraint. This dimension refers to the degree to which a culture allows for gratification or suppresses it through regulations. It is now this set of Hofstede dimensions that are most frequently used in organization and management research. The authors also note that Hofstede’s (1993) definition of culture is often cited in management and organizational research: “the collective programming of the mind that distinguishes one group or category of people from another” (p. 89). The fact that this definition endures despite being published over twenty years suggests its strong clarifying power.

It is worth noting that another set of researchers, Trompenaars and Hampden-Turner (1997) offer another set of cross-cultural dimensions that not widely used in management research but are popular in management consulting. Furthermore, the GLOBE study by House, Hanges, Javidan, Dorfman, & Gupta (2004) deliberately sought to refine Hofstede’s dimensions by examining leadership through a cross-cultural aperture. Their definition of culture as, “shared motives, values, beliefs, identities, and interpretations or meanings of significant events that result from common experiences of members of collectives that are transmitted across generations” (p. 15) has started to gain popularity in management research.
The introduction of Hofstede’s dimensions of culture allowed for cross-cultural analyses of organizations in new, unprecedented ways. Hofstede’s work (1980, 2001, 2010) remains the dominant cultural theory applied in management research. While there are critics of Hofstede’s work (e.g., McSweeney, 2001), most cross-cultural research in management and organizations still uses Hofstede’s dimensions of culture (Triandis, 1988; Tsui, Nifadkar, & Ou, 2007). Thus, we also use this set of cross-cultural dimensions in the current study to determine its applicability to the social media context.

Despite its recognized importance, however, culture and cross-cultural differences remain under-researched in management and organization studies. The title of a Boyaciiiger and Adler (1991) article characterized the Academy of Management, the premier organization for management scholarship, as a “parochial dinosaur” because of its Ameriicentric focus and general failure to consider cross-cultural differences in advancing management and organizational theories. A call to the Academy to consider the global nature of business went largely unheeded, and 25 years after the publication of that article, culture remains an under-researched variable.

Tsui, Nifadkar, and Ou (2007) reviewed 10 years of top management publications to survey the status of cross-cultural research during this period. Their findings supported the failure of Boyaciiiger and Adler’s (1991) call: 10 years of publication in 16 top management journals yielded 93 articles about cross-cultural, cross-national or comparative differences. That equates to roughly half an article a year with a focus on culture in each of these top journals.
The Social Media Context: A New Perspective on Organizations

While the dearth of articles that incorporate culture as a variable is well documented, our purpose is not to call for more cross-cultural research. Rather, we draw the reader’s attention to the truth that the organizational landscape has changed dramatically as a result of technological advances, including the Internet and social media. While cultural differences in a traditional brick and mortar environment remain important, it is now imperative to consider organizational activities in an online context. More specifically, we are interested to know whether organizations’ online activities reflect the culture in which they are found. Conversely, does the online environment offer a context so novel that new dimensions of culture are required to explain organizations’ activities? As a third alternative, we wonder if a global social media culture is being created that blends traditional cultural norms across national boundaries. These novel characteristics of contemporary organizations bring us to our current study.

Modern technology is inexorably changing communication patterns globally. Information has become available in real time through the Internet. In addition, mobile devices, wireless connections, and cellular data have all contributed to redefined notions of connectivity by allowing people to be available in an unprecedented way. Simultaneously, the proliferation of social media applications has enabled levels of connectivity to surge and, therefore, also transformed business practices and the possible ways in which businesses can connect with clients, customers, and stakeholders through a variety of platforms. Furthermore, social media applications, such as Facebook, Twitter, Instagram, and Snapchat are changing the way the Internet is being used. Analyses of
both contemporary business and communication practices, therefore, must necessarily include discussions on the influence of technology and social media.

Social media continue a seemingly unassailable expansion. For example, according to the Pew Research Center (2014), Facebook continued to enjoy its status as the most popular social media platform in 2014 as 71% of all adult Internet users in the United States are on Facebook. Despite this high percentage of adoption in the United States, the number of active Facebook users in the United States and Canada (17.2%) is actually considerably lower than other regions of the world according to the Internet World Statistics data for 2015 (2016). Other social media platforms, such as WeChat, Tumblr, Instagram, and Twitter are also gaining in popularity globally based on 2016 data from Statista (Chaffey, 2016). In fact, the same study reports that all other social media platforms except Facebook witnessed growth from 2013 to 2014. In addition, slightly over half (52%) of all adult Internet users are active on two or more social media platforms. Pew Center Research demonstrates that this percentage continues to grow across the globe in their study of 40 nations representing every geographic region, and they show particularly fast growth in social media usage in Africa, Asia, and South America due to the growing presence of smartphones (Poushter, 2016).

The introduction of engagement between people of potentially different cultures paved the way for Web 2.0 technologies, which focused on the engagement of individuals driven by the increase in user-generated information. Platforms, such as Classmates.com, Friendster, and MySpace, allowed people to interact with one another in real-time en masse in ways that previous websites and discussion forums simply did not. Each platform also offered different technologies that allowed increased levels of
personal customization and facilitated sharing of hyperlinks, pictures, video, and music. While these three platforms lost popularity and usage statistics to other Web 2.0 platforms, their introduction helped facilitate the massive adoption of Facebook and Twitter (Constantinides & Fountain, 2008). Although it began as a program designed for meeting other students at Harvard University, Facebook has grown into the world’s largest social media platform for individuals. It did not take long after it allowed organizations to create group pages in 2007 that it became the largest platform for corporations and for-profit organizations as well. Although it has changed the underlying algorithm for what appears on an individual’s newsfeed and began charging organizations to have their content regularly appear in front of their fans and followers, Facebook continues to be used by more than 80% of Fortune 500 corporations and continues to be adopted by leading corporations (Barnes & Lescault, 2014).

As the statistics illustrate, social media are changing behaviors around Western Internet usage. However, social media are altering Internet usage behaviors globally as well. For the current study, we take Facebook as the prime example of social media because its global penetration rate is the highest of all platforms. As of November 30, 2015, Facebook has a penetration rate of 20.9% when focused on active daily users across the globe. While North America boasts the highest adoption rate at 59.7%, a significant range exists when examining the remaining regions of the globe. South America (51.6%) is the only other region that has more than half of its population on Facebook; however, Oceania (49.1%), the European Union (46.5%), and Central America (45.7%) are approaching similar numbers. Africa (10.8%), Asia (12.49%), and the Middle East (20.9%) are the regions where Facebook penetration trails the rest of the
globe due to a variety of access issues (Internet World Stats, 2016).

These percentages are reflective of the individual adoption rates across the globe. Although many studies have suggested that organizations reach out to their stakeholders using social media (e.g., Kaplan & Haenlein, 2010), there have been relatively few attempts to examine how organizations from across the global business community reach out to their stakeholders in this space despite encouragement from Pettigrew, Woodman, and Cameron (2001). Instead, studies primarily focus on organizations from one specific region. For example, Kim, Kim, & Sung (2014) examined American organizations’ social responsibility strategies on Facebook while Heaselgrave and Simmons (2016) examined social media more broadly in relation to limited dialogue in the space by Australian government agencies. Other scholars have compared social media usage by different sectors (e.g., nonprofit compared to for-profit), but they have largely been within the geographic boundaries of one nation (Sriramesh, Rivera-Sanchez, & Soriano, 2013). Without doubt, communication scholarship has been strengthened by these studies and the many others that have examined how organizations are using social media (e.g., Tao & Wilson, 2015; Ruehl & Ingenhoff, 2015), and scholars have examined the impact of culture within organizations for support of using social media (Vardeman-Winter & Place, 2015). To continue to broaden our understanding of organizational use of social media, we need to examine it by comparing social media usage by the global business community—not simply within geographic boundaries.
Rationale for the Current Study

While social media are changing both communication and business practices, the variance in these global penetration rates cue us to consider that the extent to which organizations in different cultures are leveraging social media to engage with their stakeholders will also differ. More importantly, cross-cultural differences suggest that organizations in different cultures might also use social media, such as Facebook, differently to engage with their stakeholders. While the earliest adopters of Internet technologies were organizations in Western cultures, the ways in which they have adopted social media for business engagement may not have diffused to other cultures’ practices.

Because Facebook is the most widely used social media platform, we focus our study there. Facebook became available to organizations in 2007, and usage has steadily increased since its introduction. Through Facebook, organizations have secured an online presence separate from an organizational website that can be leveraged to share media and connect to stakeholders.

While using social media in business in this manner to engage with stakeholders might be a new and emerging phenomenon, it constitutes a critical trend for both individuals and organizations that cannot be ignored. Understandings of how both individuals and organizations are harnessing social media as a communication tool is crucial in both business management and communication. Studies have investigated how individuals use social media, both socially as well as for business applications (Boling, Burns, & Dick, 2014; Kaplan & Haenlein, 2010). Studies have even examined the effects of culture on webpage design (e.g. Fletcher, 2006). Conversely, organizational culture
has been widely studied (e.g. Pettigrew, 1979; Schein, 2010) but fewer studies to date have focused on the role of culture—at either the societal or organizational level—and its impact on how organizations are leveraging social media to engage with stakeholders, clients, and customers. Although before the advent of social media, Pettigrew, Woodman, and Cameron (2001) encouraged scholars to do more cross-cultural comparisons for how organizations reached out to stakeholders to understand how they tailor their efforts to various cultural groups. For this reason, the present inquiry focuses specifically on how global organizations are using Facebook. To our knowledge, no studies look at a large sample of organizations in different cultures in a cross-cultural investigation of social media usage.

The purpose of this study is to explore if organizations’ social media usage reflects traditional cultural values and norms. More specifically, we seek to understand how well Hofstede’s cultural dimensions apply to a virtual culture on Facebook as used by Global 500 corporations. Previous work by Waters and Lo (2012) started to explore this area. However, their sample was limited to three cultures and the non-profit sector. In the spirit of making more robust findings, the current study examines the Fortune Global 500 companies from 2013 for a larger, more culturally diverse sample of cultures in both the for-profit sector. This list is global in its nature, but it is not without some flaws. The largest being that the global community is not represented equally given the list’s composition is based on revenue and asset size. However, the list is not dominated by one particular region as Asia (n = 198) leads the list in terms of number of companies on the list and is followed by Europe and North America, which are tied for second place (n = 142 each). The rest of the globe is represented with significantly smaller frequency
based on their asset size, but this exploratory study is important for examining the applicability of Hofstede’s cultural dimensions in the corporate Facebook environment and explores the challenges of future cultural, corporate communication as described by Pettigrew, Woodman, & Cameron (2001).

**Background of the Study**

By developing a measurement schema of Hofstede, Hofstede, & Minkov’s (2010) six dimensions of culture (power distance, individualism/collectivism, uncertainty avoidance, masculinity/femininity, long-term/short-term orientation, and indulgence/self-restraint), this research measures how corporate organizations around the globe portray themselves and communicate with their audiences on social media sites, specifically Facebook. The study’s research questions evaluate the organizations along the six dimensions and compare their social media performance to Hofstede’s evaluation of the organizations’ home nations. This analysis provides the basis for exploring whether traditional cultural expectations are reinforced online or whether future research should explore new ways of explaining online behaviors in light of cultural norms.

This project involves a content analysis based on the creation of new indices for Hofstede’s six dimensions for social media behavior. As an example, the following items serve as an example for the indices used in the study. In this case, these items were created to measure the uncertainty avoidance index: the posting of explicit rules for social media behavior, warnings against inappropriate actions online, using emotionally-charged communication messages, and naming the organization’s account moderators/managers.
From the Global 500, 287 organizations had Facebook sites that were usable for this analysis. We cluster the cultures in our sample adapting Mensaw and Chen’s (2013) clusters (which are an extension of the GLOBE (House et al, 2004) clusters so that our sample breaks down as follows: Anglo Cluster, n=137; Germanic Europe, n=42; Latin Europe, n=37; Nordic Europe, n=6; Confucian Asia, n=40; Southern Asia, n=7; and Latin America, n=8. It is important to note that Hofstede’s cultural dimensions were originally focused on individual nations; however, his thoughts on culture has been broadened in recent years to examine culture within nations and across regions (Hofstede, et al., 2010; Minkov & Hofstede, 2012). While certain regional clusters may be low, they help establish regional cultural differences to help develop Hofstede’s emerging question as to the applicability of a meaningful national culture in an increasingly global community.

Characteristics of Facebook that Drive Our Research Questions

Facebook provides a multi-faceted user experience. However, accounts for individual people as contrasted to those for organizations differ slightly. We note that we are talking specifically about Facebook pages for corporate organizations on Fortune magazine’s “Global 500” list. To begin the overall examination of Hofstede’s cultural dimensions on the corporate Facebook pages, we pose the first research question: RQ1: Looking at their overall Facebook presence, which of Hofstede’s six cultural dimensions are most used to reflect Global 500 corporations?

The primary functionality of Facebook rests in messages originating from the organization. In building their page, the organization has the option to include self-composed information in the “About” section of the page. We view this as the first
content section in which Facebook pages for organizations in different cultures might exhibit variance. We, therefore, ask a follow-up question:

RQ2: How are Hofstede’s six cultural dimensions reflected in how Global 500 corporations present themselves in the “About” section of Facebook?

Once the organization’s Facebook profile is established, messages can be disseminated on an on-going basis through “Status Updates.” These appear on the “Timeline” where people who “Like” the Facebook page can either “Like” each status as well as post their own responses. The principal manner of message dissemination is through the updating of “statuses.” As these status updates are different and more dynamic than the “About Us” section, we ask a third research question:

RQ3: How are Hofstede’s six cultural dimensions reflected in how Global 500 corporations present information through status updates on Facebook?

Finally, Facebook has allows users to include multimedia content in the form of photos, videos, and links to other websites as part of status updates. As these are different media than text based status updates and provide a different contextualization of culture, we ask the fourth research question:

RQ4: How are Hofstede’s six cultural dimensions reflected in how Global 500 corporations present multimedia content on Facebook?

Method

To determine how Facebook is used by the Global 500 corporations, a content analysis was carried out based on the 2013 listing of the highest revenue corporations throughout the world. As a research method, content analysis allows researchers to
examine the actual practices of communication by focusing on the information provided through textual and visual messages. Rather than using surveys or interviews that might explore underlying motivations and goals, content analysis examines what actually was communicated through the development of structured codebooks to eliminate significant subjectivity by a research team (Krippendorff, 2012).

To explore the presence of culture on the Facebook pages of corporations, the Global 500 list was chosen as the population. This list was chosen as the basis for this analysis because of its increasingly diverse geographic representation of business and industry. From 2001 to 2013, the number of North American-based companies fell from 215 to 144 while presence from corporations from Europe and most notably Asia have rapidly increased during this same time. Of the 500 companies on the list, 259 had an official corporation Facebook page. To allow researchers to analyze the impact of cultures, these companies were grouped based on different geographic zones. The Anglo Cluster (n = 123) includes companies headquartered in Canada, Ireland, United Kingdom, and United States. The Latin Europe Cluster (n = 37) includes French, Italian, and Spanish companies. The Germanic Europe Cluster (n = 37) is represented by German, Dutch, Swiss, and Belgian companies. A cluster representing Confucian Asia (n = 34) is represented by companies from China, Japan, and Korea. The Nordic Europe Cluster (n = 9) is represented by Finnish, Norwegian, Russian, and Swedish companies. There are seven companies from each of the Latin America Cluster (Brazil, Colombia, Mexico, and Venezuela) and the Oceania Cluster (Australia and New Zealand). Finally, the Southern Asian Cluster (n = 5) is represented by India and Malaysia.
All of the companies on the Global 500 list that had an official Facebook presence were included in the analysis. A codebook was developed to measure Hofstede’s six cultural dimensions based on a review of literature concerning social media as well as by reviewing corporate Facebook profiles from across the globe to identify elements that may not be commonplace in Western scholarship. As part of this process, we consulted with two cross-cultural experts who both supported our operationalization of Hofstede’s dimensions. After a two-hour training session and practice coding organizational pages that were not included in the sample, the research team coded one-third of the sample to perform an intercoder reliability analysis. Using Scott’s $\pi$, the coders were interpreting the information on the Facebook profiles similarly as the values ranged from .82 to .91 when calculated using PRAM, an intercoder reliability calculator software.

These statistics were based on how the research team was identifying content in the “About Us” section of Facebook, the text used in the companies’ updates, and the non-text portion of company updates, such as pictures, videos, or hyperlinks. Each of the three sections were measured using dichotomous variables, such as “yes or no” questions or whether an item represented one end of the Hofstede spectrum over the other (e.g., individualistic or collectivist).

The “About Us” section was measured along the individual-collectivist continuum by asking whether the section focused more on the organization or the community, whether language centered on a neutral third-person (e.g., it or they) or the plural first-person (e.g., us or we), and whether the section focused more on the organization and its leadership or the benefits of its products, programs, or services for potential customers. This dimensions was also measured using yes-no questions to
determine whether readers were welcomed to the page, were asked to like the page or join the group, and whether there was an explicit statement about why they should follow the organization on Facebook. For the text portion of the Facebook updates, researchers determined whether the updates focused more on the organization or its community, its products or its customers, and the language used in the updates. This section also examined whether individuals were allowed to post on the company’s profile and whether links posted by the organization only went to the company’s own content or other organizations as well. Finally, the pictures and video shared by the companies was analyzed to determine whether it reflected individuals within the organization or employees in groups, whether products, programs or services were shown to be in use in solitude or in groups, and whether one race/ethnicity was featured or whether the organization was featured in a multi-cultural setting.

For the uncertainty avoidance dimension on the “About Us” portion of Facebook, a series of yes-no questions where the selection of yes represented high uncertainty avoidance was used. These specific items focused on whether rules for posting to the page were provided, if the section reinforced company values and ideals, whether a statement was posted indicating that an individual’s posts to the page could be used by the organization, whether a person or department was named as the monitor of the account, and whether a statement was made that posts made by others do not represent the opinions of the organization. The text of the company’s Facebook posts were determined to reflect high uncertainty avoidance if they were signed by the account monitor using initials or a name, if the organization made a post every day in the week preceding the coding, if any posts reminding visitors of posting rules were made in the
previous month, and whether the organization responds to posts made by others on the company’s profile. A measure of low uncertainty avoidance was whether there were 3 or more updates asking visitors to participate in activities unrelated to the company’s mission in the previous month. Turning to the media shared by the company, pictures and videos were analyzed to determine whether employees were more often shown in a uniform or attire with an identifying company logo, were individuals encouraged to share their own media files, whether the files were organized into albums, and whether the profile or cover photo featured the company’s logo. Finally, this dimension measured whether the photo or video appeared in Facebook or whether a link to an outside source had to be clicked on to view the file.

The continuum for Hofstede’s masculine-feminine dimension for the “About Us” section centered on four yes-no questions that determined whether the section named competitors, referenced specific organizational mission and goals, encouraged visitors to share their customer service needs, and whether a detailed history was provided. Additionally, an item was created to determine whether companies discussed their successes quantitatively or qualitatively. The text portion of the Facebook updates was analyzed along the masculine-feminine continuum by determining whether at least three updates in the previous month referred to organizational public relations material, whether media news stories were publicized, and whether any awards the company earned were highlighted. Asking visitors to participate in polls was considered to be a measure of the feminine side of the continuum. The masculine-feminine continuum was conceptualized for media by determining whether the focus was on products or people, whether one or both genders were present in the file, and which gender was more
prominently featured if both genders were present. Additional measures focused on whether the media was family-friendly, whether the cover photo featured the product being used, and whether at least three media files from the past month focused on the users rather than the organization.

Power distance was measured in the “About Us” section using six yes-no questions, which focused on whether the section invited visitors to request more information, referenced the company’s listening to the social media community, provided contact information for contacts outside of Facebook communication, and whether the section asks visitors to suggest edits to the information on the profile. Representing the high end of the continuum, the questions also asked whether there was a statement that company content was protected by copyright and whether the section listed individuals represented at the top of the organizational hierarchy. Power distance for the text of Facebook updates was determined whether at least three questions were posed by the company in the previous month and whether statuses were more reflective of dialogue or one-way communication. Our justification here is as follows: Power from the top down is imposing. However, asking questions and engaging in dialogue shows a willingness to flatten the hierarchy. Thus, more evidence of this shows that the power is not as tightly held by the corporation. High power distance as reflected by the text focused on whether the organization replies to comments made on their own posts, whether the language used includes the use of the second-person (e.g., you), and whether organizational replies to individuals’ posts and comments are written using credible and authoritative language or in a more fun, emotional manner. The power distance continuum in relation to the media files focused on whether headshots of
management were posted, whether the media files featured others outside the
organization with organizational representatives in a less hierarchical manner, whether
visitors were asked to “Caption This Photograph” by the company, whether the media
was copyrighted, and whether the profile or cover photograph for the Facebook account
featured organizational leaders.

The “About Us” section was evaluated along the long-term and short-term
orientation spectrum by five yes-no questions. Items measuring the long-term orientation
focused on whether the company’s founding date or year was provided, whether it
discussed overall performance numbers such as numbers served or helped. Short-term
orientation was measured by highlighting more recent milestones than past successes as
well as stating when the social media account was started. For the long-term and short-
term orientation dimension, Facebook updates were measured on whether three special
events or promotions were the focus of at least three statuses in the previous moth,
whether any updates promoted a membership club or way to connect with the
organization through personalized accounts, and whether there is any evidence of a
current campaign in updates. Additionally, statuses determined whether the items
measured brand awareness as opposed to current promotions and whether customers or
clients were a greater focus than products, programs, or services. Media files were
examined to determine whether there were scans of current promotions or sales, did
media feature the company’s logo more often than not, were files posted that highlighted
the organization’s past, and whether media focused quotations or material provided by
supporters. The final question for this dimension asked whether the cover photograph
was specific to the organization or was it something that could be used by a competitor or
other organization. Here our rationale is as follows: Special events and short-term promotions show that the Facebook account is being used more as a temporary promotional vehicle rather than being woven into a long-term business strategy as Kaplan & Haenlein (2010) suggest.

For the final Hofstede dimension of indulgence-restraint, the “About Us” section of Facebook was measured using four yes-no questions where restraint was measured by determining if a statement was present stating that inappropriate responses will be deleted and whether specific communication policies are referenced in regard to the company’s social media presence. Indulgence was measured by determining whether individuals’ posts may be edited and whether individuals are encouraged to have fun with their Facebook engagement with the company. We chose to measure it in this way because indulgence focuses on enjoying life and having fun rather than holding back. One final measure for the “About Us’ section focused on the tenor of the language used by the company, whether it was professional and stoic or energetic and emotional. For this dimension, the statuses were analyzed based on whether the focus on popular culture events, whether contests with prizes are carried out with the statuses, and whether the organization provides more than three updates on items pertaining to corporate governance and social responsibility. The text of these updates were also measured based on the tenor of the text. Indulgent media files were those that were posted by the organization for fun and not specifically related to the organization, were they done in a popular culture type manner such as Internet memes or were they reflective of a produced, traditional advertising, and whether they represented a wide range of colors or relied heavily on the company’s brand colorscheme. Finally, media files were examined
to determine whether one-third of the photographs in the previous month were presented in a filtered, Instagram-style or whether they lacked treatment using various design filters. Instagram filters and media not necessarily pertaining to corporation or products show a human personality (Hochman & Manovich, 2013). Thus, we feel that greater use of Instagram filters reflects a stronger ranking on the indulgence side of the dimension.

To calculate an average for the six cultural dimensions, an index was created whereby two points were awarded for each construct that reflected the cultural scale. Each aspect of Facebook (“About Us,” text updates, and multimedia) was measured with five questions so that the top measure for each cultural dimension was 10. Every item measuring the cultural dimensions represented across the three Facebook sections was either given two points if it met the condition or none if it did not. With five items measuring each of the Hofstede cultural dimensions, each dimension could receive up to 10 points. When the three Facebook sections were added together, a cumulative score could range from 0 to 30. These collective indices were used to answer the study’s research questions.

Results

The first research question sought to determine which of Hofstede’s six cultural dimensions were most often reflected in the Facebook presence of the Global 500 corporations. Based on an additive total of the three indices, power distance (m = 24.46, sd = 1.34) and the masculine-feminine continuum (m = 24.27, sd = 2.14) were the most represented dimensions followed by individual-collectivist (m = 23.93, sd = 2.67),
uncertainty avoidance ($m = 23.88$, $sd = 2.32$), indulgence-restraint ($m = 23.59$, $sd = 2.65$), and long-term versus short-term orientation ($m = 22.67$, $sd = 1.91$). Table 2 shows the overall mean scores for each of the clusters along the six cultural dimensions. A one-way ANOVA test indicated that there were statistical differences for all of the indices except for individual-collectivist and indulgence-restraint indicators. Post hoc Bonferroni tests indicated that the Latin American culture was most likely to incorporate uncertainty avoidance, the Oceania and Anglo clusters were more likely to reflect the masculine-feminine divide, Germanic Europe was least likely to represent the power distance indicator, and Southern Asian and Germanic Europe clusters were more likely to show elements of short-term orientations.

Insert Table 2 About Here

Given that the similarities in the overall scores of the Global 500 organizations using the additive measure of cultural characteristics on Facebook, it is imperative to examine the three Facebook sections separately to determine if cultural characteristics are more present in any one particular section. The second research question explores Hofstede’s dimensions in relation to the “About Us” section of Facebook. Variance began to emerge within these measures as power distance was the most often reflected characteristic ($m = 9.08$, $sd = 1.18$) followed by individualism ($m = 8.93$, $sd = 1.75$), indulgence-restraint ($m = 8.78$, $sd = 0.99$), uncertainty avoidance ($m = 8.11$, $sd = 1.51$), masculinity ($m = 7.78$, $sd = 0.94$), and long-term orientation ($m = 6.91$, $sd = 0.93$). Table 3 presents the results of a one-way ANOVA to test whether there were differences in the cultural characteristics of the “About Us” section between the geographic clusters. There were no statistically significant differences for the individual-collectivist or the long-term
or short-term orientation dimension. Post hoc Bonferroni tests indicated that both Latin America and Latin Europe clusters were more likely to demonstrate characteristics of uncertainty avoidance while the Anglo, Nordic Europe, and Oceanic clusters were more likely to reflect the masculine-feminine divide. Oceania, Anglo, and Southern Asia were more likely to have higher power distance averages, and Oceania and the Anglo clusters were more reflective of an indulgent culture.

**Insert Table 3 About Here**

The study’s third research question examined the presence of Hofstede’s cultural indicators in relation to the text of the Facebook status updates made by the Global 500 corporations. Overall, the updates were more likely to be individualistic ($m = 9.35$, $sd = 1.24$), long-term oriented ($m = 8.31$, $sd = 1.22$) and reflective of uncertainty avoidance ($m = 8.14$, $sd = 0.99$) than they were to be indulgent ($m = 6.99$, $sd = 1.41$), masculine ($m = 7.02$, $sd = 1.25$), or high on the power distance indicator ($m = 7.59$, $sd = 0.77$). Table 4 presents the one-way ANOVA results used to test for differences among the geographic clusters, and only uncertainty avoidance and the orientation indicators were statistically different. For uncertainty avoidance, the Latin America cluster was significantly higher than the other groups, and Oceania was significantly lower than the others. For long-term and short-term orientation, Nordic Europe was significantly higher than all of the other clusters while Latin America and Southern Asia were lower statistically than the other groups. Germanic Europe neared statistical significance for being lower on this measure but did not achieve accepted significance levels.

**Insert Table 4 About Here**
The study’s final research question explored the cultural characteristic variations among the media shared by the Global 500 corporations on Facebook. Based on the overall averages, the pictures were overwhelmingly masculine (m = 9.49, sd = 1.53) and reflected a power distance (m = 8.75, sd = 0.59). They were somewhat indulgent (m = 7.82, sd = 1.40) and promoted avoiding uncertainty (m = 7.69, sd = 0.98). Media reflected long-term orientation (m = 7.42, sd = 1.11) more than short-term orientations, and the individual was reflected (m = 6.81, sd = 1.16) slightly more than the collective. Following the pattern from the previous two research questions, a one-way ANOVA test was performed to determine statistically significant differences among the clusters, and only two cultural indicators were represented in statistically different proportions. Media posted by Latin America, Southern Asia, and Oceania clusters were more likely to score highly on the uncertainty avoidance scale while the Confucian Asia cluster was least likely to post masculine media.

**Insert Table 5 About Here**

**Discussion**

This study sought to determine whether the corporations on Fortune magazine’s Global 500 list were more likely to reflect the culture of the location of their company headquarters or reflect what scholars have called a virtual culture that spans geographic regions. The results of the current study are somewhat mixed in their findings. When looking at the official corporate Facebook presence of these organizations, the eight geographic clusters’ mean scores are relatively similar when looking at the overall sum of the three indices. Statistically significant differences exist, which indicate that cultural variance is present on Facebook. However, the mean score differences are relatively
small. The study’s three research questions allow us to see where the cultural indicators are reflected the most, but taken in its entirety this study provides evidence that traditional cultural characteristics may not be as strong on Facebook for corporations.

As global work becomes more common, both researchers and practitioners should be asking whether traditional cultural dimensions retain their explanatory power when applied to a virtual context, specifically social media. Specific to the current project, we ask what the results suggest about Hofstede’s cultural indices and social media as represented in this study by Facebook. When we consider that traditional cultural dimensions might not explain behaviors on Facebook, does this imply the growing strength of a virtual culture, or are these results due to a measurement flaw? Ultimately, more research is needed to ascertain with greater certainty the reasons for both the variance between cultures as well as the shift towards closer mean scores. We acknowledge that this was a first attempt to match scales to Facebook activity, so perhaps our attempts at a systematic approach meant that five items per measure proved to be too much.

Clearly, Global 500 organizations are large and span the globe. It is possible that the results reflect that while they may have headquarters in a particular culture, they are global entities with subsidiaries spread throughout many different cultures. This could be explained by the emergence of statistical results. In other words, some dimensions explain a company’s cultural characteristics. However, an effort to create a social media presence that spans the globe might imply a movement away from the cultural norms of a region. If this were true, this movement would support the emergence of a global social media culture.
We also note that the cultural clusters that tended to be the most statistically different (Latin American, Southern Asia, and Oceania) all had the smallest representation on the Global 500 list. Thus, perhaps these statistical differences are more of an indication of sample size from these regions.

**Limitations and Directions for Future Research**

We reiterate that, to our knowledge, this is the first work to match Facebook behaviors with Hofstede’s cultural dimensions across the global business community. As there is no prior work in this area, this exploratory work needs to be replicated with other organizations to determine its staying power. Examining other organizations (e.g. non-profits, SMEs, and NGOs) and perhaps testing differences across industries might also yield intriguing results. Also, we reiterate the point that the sample sizes of organizations from the Oceania, South Asia and Latin American clusters were all small in comparison to other clusters, and they were also the most statistically different. While the size of the clusters may be considered a flaw due to the makeup of the Fortune 500 Global list, it may also reveal significant insights. Does this represent a statistical anomaly or a true cultural difference? Further work is necessary in this area, perhaps with samples equivalent in size, to answer this question more accurately. In addition, future work could employ both qualitative and mixed-method approaches to complement our understanding of organizations’ communication via social media with their stakeholders.

As previously stated, this is a first step in testing cross-cultural social media usage in organizations to engage with stakeholders. However, Facebook as a platform does not represent the entirety of social media. While Facebook currently boasts the most users
and highest penetration rates, other social media platforms are both popular and gaining in popularity (e.g. Instagram, Pintrest, and Snapchat). Time will tell how widely organizations (as contrasted to individual users) secure an online presence through these social media platforms. If and when they do, studies should examine how well traditional cultural dimensions are reflected on those social media platforms.

In this study, we are not measuring agency in the corporate communication to reflect or move away from cultural norms. Future research might tap into this intent and any consciousness on the part of social media managers in a specific direction. Depending on those findings, they might make important statements on the emergence of a global social media culture.

Finally, we acknowledge that our own cultural biases as researchers from (authors’ country of origin) might have influenced our perceptions. For future work, we would invite researchers from the international academic community to investigate cross-cultural organizational usage of social media to determine the degree to which our perceptions are consistent across cultures.
References


Barnes, N. G., & Lescault, A. M. (2014). The 2014 Fortune 500 and social media: LinkedIn dominates as use of newer tools explode. Retrieved online April 7, 2015:
http://www.umassd.edu/cmr/socialmediaresearch/2014fortune500andsocialmedia


Internet World Stats. (2016, August 30). Facebook users in the world. Retrieved from


Vardeman-Winter, J., & Place, K. (2015). Public relations culture, social media, and

Table 1. Four dimensions of culture outlined by Hofstede in *Culture’s Consequences*.

<table>
<thead>
<tr>
<th>Cultural Dimension</th>
<th>Conceptualization of Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individualism-Collectivism</td>
<td>Relative prioritization of individuals versus groups</td>
</tr>
<tr>
<td>Masculinity-Femininity</td>
<td>Preference for relationships versus achievement</td>
</tr>
<tr>
<td>Power Distance</td>
<td>Tolerance for hierarchy and inequality between superiors and subordinates</td>
</tr>
<tr>
<td>Uncertainty Avoidance</td>
<td>Tolerance for ambiguity</td>
</tr>
</tbody>
</table>
Table 2. Mean scores and standard deviations of Global 500 organizations’ combined Facebook presence using Hofstede’s cultural dimension indicators.

<table>
<thead>
<tr>
<th>Region</th>
<th>Individual-Collective</th>
<th>Uncertainty Avoidance</th>
<th>Masculine-Feminine</th>
<th>Power Distance</th>
<th>Long-Term Orientation</th>
<th>Indulgence-Restraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglo Cluster¹</td>
<td>24.54 (2.50)</td>
<td>23.34 (2.43)</td>
<td>24.75 (2.33)</td>
<td>24.57 (1.37)</td>
<td>22.57 (1.99)</td>
<td>23.80 (2.57)</td>
</tr>
<tr>
<td>Latin Europe²</td>
<td>23.70 (3.03)</td>
<td>24.42 (1.77)</td>
<td>23.94 (1.81)</td>
<td>24.30 (0.92)</td>
<td>23.27 (1.78)</td>
<td>23.12 (2.87)</td>
</tr>
<tr>
<td>Nordic Europe³</td>
<td>23.83 (2.32)</td>
<td>22.80 (1.79)</td>
<td>23.20 (2.17)</td>
<td>24.40 (0.89)</td>
<td>23.60 (1.14)</td>
<td>23.50 (3.39)</td>
</tr>
<tr>
<td>Germanic Europe⁴</td>
<td>23.87 (2.80)</td>
<td>24.19 (1.82)</td>
<td>23.92 (1.83)</td>
<td>23.89 (1.30)</td>
<td>21.94 (1.76)</td>
<td>24.10 (2.49)</td>
</tr>
<tr>
<td>Latin America⁵</td>
<td>22.43 (3.10)</td>
<td>26.00 (3.32)</td>
<td>23.25 (1.89)</td>
<td>24.17 (0.75)</td>
<td>22.00 (1.41)</td>
<td>23.71 (2.69)</td>
</tr>
<tr>
<td>Southern Asia⁶</td>
<td>24.25 (3.30)</td>
<td>24.50 (3.87)</td>
<td>22.67 (1.15)</td>
<td>24.40 (1.14)</td>
<td>21.00 (1.87)</td>
<td>24.60 (1.82)</td>
</tr>
<tr>
<td>Confucian Asia⁷</td>
<td>23.69 (2.58)</td>
<td>24.68 (2.18)</td>
<td>23.32 (1.68)</td>
<td>24.27 (1.59)</td>
<td>23.41 (1.50)</td>
<td>23.12 (2.69)</td>
</tr>
<tr>
<td>Oceania⁸</td>
<td>25.14 (1.35)</td>
<td>23.00 (1.41)</td>
<td>25.71 (1.38)</td>
<td>25.71 (0.95)</td>
<td>22.83 (2.48)</td>
<td>21.86 (2.73)</td>
</tr>
</tbody>
</table>

⁠a = F(7, 252) = 1.64, p = 0.12
b = F(7, 252) = 3.17, p = 0.003
c = F(7, 252) = 3.06, p = 0.004
d = F(7, 252) = 2.15, p = 0.04
e = F(7, 252) = 2.84, p = 0.007
f = F(7, 252) = 1.10, p = 0.36
Table 3. Mean scores and standard deviations of Global 500 organizations’ Facebook profiles’ “About Us” section using Hofstede’s cultural dimension indicators.

<table>
<thead>
<tr>
<th>Region</th>
<th>Individual-Collective(^a)</th>
<th>Uncertainty Avoidance(^b)</th>
<th>Masculine-Feminine(^c)</th>
<th>Power Distance(^d)</th>
<th>Long-Term Orientation(^e)</th>
<th>Indulgence-Restraint(^f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglo Cluster(^1)</td>
<td>9.18 (1.73)</td>
<td>7.80 (1.63)</td>
<td>7.96 (0.95)</td>
<td>9.29 (1.14)</td>
<td>6.83 (0.89)</td>
<td>9.04 (0.95)</td>
</tr>
<tr>
<td>Latin Europe(^2)</td>
<td>8.46 (1.67)</td>
<td>8.78 (1.74)</td>
<td>7.58 (0.77)</td>
<td>8.80 (1.11)</td>
<td>7.14 (0.93)</td>
<td>8.40 (0.93)</td>
</tr>
<tr>
<td>Nordic Europe(^3)</td>
<td>8.67 (1.51)</td>
<td>8.00 (1.67)</td>
<td>7.83 (0.98)</td>
<td>8.83 (0.98)</td>
<td>7.00 (1.26)</td>
<td>8.83 (1.33)</td>
</tr>
<tr>
<td>Germanic Europe(^4)</td>
<td>8.85 (1.93)</td>
<td>8.25 (1.19)</td>
<td>7.54 (1.10)</td>
<td>8.79 (1.01)</td>
<td>6.84 (1.04)</td>
<td>8.72 (0.94)</td>
</tr>
<tr>
<td>Latin America(^5)</td>
<td>8.00 (1.15)</td>
<td>9.00 (1.53)</td>
<td>7.40 (0.55)</td>
<td>8.00 (0.82)</td>
<td>7.17 (0.75)</td>
<td>8.43 (0.79)</td>
</tr>
<tr>
<td>Southern Asia(^6)</td>
<td>8.40 (2.30)</td>
<td>8.40 (1.95)</td>
<td>7.20 (1.09)</td>
<td>9.20 (1.30)</td>
<td>6.20 (0.44)</td>
<td>8.40 (0.89)</td>
</tr>
<tr>
<td>Confucian Asia(^7)</td>
<td>8.77 (1.81)</td>
<td>8.35 (1.30)</td>
<td>7.68 (0.81)</td>
<td>8.67 (1.41)</td>
<td>7.12 (0.81)</td>
<td>8.32 (0.98)</td>
</tr>
<tr>
<td>Oceania(^8)</td>
<td>9.86 (0.69)</td>
<td>7.14 (1.77)</td>
<td>8.14 (0.69)</td>
<td>9.43 (0.79)</td>
<td>6.67 (1.21)</td>
<td>9.43 (0.97)</td>
</tr>
</tbody>
</table>

\(^a\) = F(7, 252) = 1.42, p = 0.19  
\(^b\) = F(7, 252) = 2.83, p = 0.08  
\(^c\) = F(7, 252) = 1.87, p = 0.075  
\(^d\) = F(7, 252) = 3.34, p = 0.002  
\(^e\) = F(7, 252) = 1.27, p = 0.27  
\(^f\) = F(7, 252) = 3.95, p < 0.001
Table 4. Mean scores and standard deviations of Global 500 organizations’ Facebook status updates using Hofstede’s cultural dimension indicators.

<table>
<thead>
<tr>
<th>Region</th>
<th>Individual-Collective(^a)</th>
<th>Uncertainty Avoidance(^b)</th>
<th>Masculine-Feminine(^c)</th>
<th>Power Distance(^d)</th>
<th>Long-Term Orientation(^e)</th>
<th>Indulgence-Restraint(^f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglo Cluster(^1)</td>
<td>9.40 (1.20)</td>
<td>8.00 (0.89)</td>
<td>7.08 (1.24)</td>
<td>7.67 (0.78)</td>
<td>8.28 (1.24)</td>
<td>6.94 (1.38)</td>
</tr>
<tr>
<td>Latin Europe(^2)</td>
<td>9.30 (1.33)</td>
<td>8.26 (0.92)</td>
<td>6.97 (1.32)</td>
<td>7.58 (0.65)</td>
<td>8.33 (1.22)</td>
<td>7.03 (1.47)</td>
</tr>
<tr>
<td>Nordic Europe(^3)</td>
<td>9.50 (1.38)</td>
<td>8.00 (0.71)</td>
<td>6.33 (0.52)</td>
<td>7.60 (0.89)</td>
<td>9.50 (0.84)</td>
<td>7.17 (0.98)</td>
</tr>
<tr>
<td>Germanic Europe(^4)</td>
<td>9.23 (1.09)</td>
<td>8.31 (1.06)</td>
<td>6.82 (1.21)</td>
<td>7.23 (0.71)</td>
<td>7.95 (1.08)</td>
<td>7.45 (1.37)</td>
</tr>
<tr>
<td>Latin America(^5)</td>
<td>8.57 (2.07)</td>
<td>8.86 (1.47)</td>
<td>7.14 (1.35)</td>
<td>7.42 (0.79)</td>
<td>7.43 (1.13)</td>
<td>7.29 (1.60)</td>
</tr>
<tr>
<td>Southern Asia(^6)</td>
<td>9.40 (0.55)</td>
<td>8.50 (1.29)</td>
<td>6.00 (0.71)</td>
<td>7.60 (0.89)</td>
<td>7.60 (0.89)</td>
<td>7.40 (1.14)</td>
</tr>
<tr>
<td>Confucian Asia(^7)</td>
<td>9.29 (1.30)</td>
<td>8.35 (1.09)</td>
<td>7.33 (1.34)</td>
<td>7.71 (0.87)</td>
<td>8.85 (1.20)</td>
<td>6.76 (1.52)</td>
</tr>
<tr>
<td>Oceania(^8)</td>
<td>9.14 (1.07)</td>
<td>7.29 (0.76)</td>
<td>7.00 (1.41)</td>
<td>7.71 (0.49)</td>
<td>8.57 (0.98)</td>
<td>5.71 (0.95)</td>
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\(^a\) = F(7, 252) = 0.92, p = 0.49
\(^b\) = F(7, 252) = 2.23, p = 0.032
\(^c\) = F(7, 252) = 1.25, p = 0.29
\(^d\) = F(7, 252) = 1.61, p = 0.13
\(^e\) = F(7, 252) = 3.20, p = 0.003
\(^f\) = F(7, 252) = 1.63, p = 0.13
Table 5. Mean scores and standard deviations of Global 500 organizations’ Facebook multimedia using Hofstede’s cultural dimension indicators.

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Individual-Collective</th>
<th>Uncertainty Avoidance</th>
<th>Masculine-Feminine</th>
<th>Power Distance</th>
<th>Long-Term Orientation</th>
<th>Indulgence-Restraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglo Cluster¹</td>
<td>6.89 (1.12)</td>
<td>7.61 (0.97)</td>
<td>9.78 (1.49)</td>
<td>8.64 (0.65)</td>
<td>7.43 (1.22)</td>
<td>7.78 (1.39)</td>
</tr>
<tr>
<td>Latin Europe²</td>
<td>6.69 (1.17)</td>
<td>7.49 (0.98)</td>
<td>9.42 (1.46)</td>
<td>8.94 (0.35)</td>
<td>7.71 (1.10)</td>
<td>7.72 (1.45)</td>
</tr>
<tr>
<td>Nordic Europe³</td>
<td>6.67 (0.82)</td>
<td>7.00 (0.63)</td>
<td>9.00 (1.00)</td>
<td>8.83 (0.41)</td>
<td>6.80 (0.45)</td>
<td>7.50 (1.87)</td>
</tr>
<tr>
<td>Germanic Europe⁴</td>
<td>6.77 (1.18)</td>
<td>7.68 (0.85)</td>
<td>9.51 (1.46)</td>
<td>8.78 (0.58)</td>
<td>7.21 (1.14)</td>
<td>7.94 (1.35)</td>
</tr>
<tr>
<td>Latin America⁵</td>
<td>6.86 (1.46)</td>
<td>8.14 (0.90)</td>
<td>9.67 (2.42)</td>
<td>8.83 (0.41)</td>
<td>7.33 (0.52)</td>
<td>8.00 (1.41)</td>
</tr>
<tr>
<td>Southern Asia⁶</td>
<td>6.75 (1.26)</td>
<td>8.20 (0.84)</td>
<td>9.00 (1.73)</td>
<td>8.60 (0.89)</td>
<td>7.20 (1.10)</td>
<td>8.80 (0.45)</td>
</tr>
<tr>
<td>Confucian Asia⁷</td>
<td>6.65 (1.29)</td>
<td>7.97 (1.09)</td>
<td>8.28 (1.29)</td>
<td>8.91 (0.51)</td>
<td>7.36 (0.86)</td>
<td>8.00 (1.37)</td>
</tr>
<tr>
<td>Oceania⁸</td>
<td>7.14 (1.21)</td>
<td>8.57 (1.27)</td>
<td>9.57 (0.53)</td>
<td>8.57 (0.53)</td>
<td>7.86 (0.89)</td>
<td>6.71 (1.70)</td>
</tr>
</tbody>
</table>

a = F(7, 252) = 0.31, p = 0.948  
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c = F(7, 252) = 4.19, p < .001  
d = F(7, 252) = 1.69, p = 0.11  
e = F(7, 252) = 0.96, p = 0.46  
f = F(7, 252) = 1.20, p = 0.31