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AN ANALYSIS OF HOFSTEDE'S CULTURAL DIMENSIONS IN COMMUNICATION JOURNALS

Building off previous research exploring how communication journals and researchers have used Hall's constructs, the current study uses Natural Language Processing (NLP) to examine how communication journals have framed Hofstede's cultural dimensions. The significance of this study is underscored by the imperative for an empirical examination of the accumulated "archaeology of knowledge" within the discipline, particularly amidst the contemporary crisis of reproducibility in scientific research.

The analysis revealed that 438 articles referenced Hofstede 4,779 times. The Journal of Intercultural Communication Research published the most articles, highlighting its significance in intercultural and cross-cultural communication scholarship. Articles focused primarily on the concept of individualism vs. collectivism, with five other frames emerging: 1) the impact of cultural values in international interactions, 2) cross-country comparisons, 3) the interplay between uncertainty avoidance, masculinity, and power distance, 4) the influence of culture on organizations, and 5) understanding high-power distance cultures. There were also longitudinal trends and spikes in the frames over time.

Methodologically, the study utilized BERTopic modeling for thematic extraction and the NLTK library for the rigorous preprocessing of texts from 25 core communication journals spanning 1993 to 2024. Drawing upon Entman's framing theory, the research elucidates how editors and authors operate as "gatekeepers" of disciplinary discourse. The longitudinal trends and cyclical spikes identified in specific frames demonstrate the evolution of cross-cultural theory in response to global shifts. These findings expand the methodological repertoire for meta-synthetic research in the social sciences and provide a robust foundation for future scholarly inquiry into the trajectory of communication theory.

Keywords: Natural Language Processing, BERT analysis, Hofstede, cross-cultural communication, journal publishing.

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Коммуникация журналдарындағы Хофстеденің мәдени өлшемдерін талдау

Ғылыми мақалада коммуникация саласының Э. Холл сынды ғалымдардың алдыңғы зерттеулеріне сүйене отырып, Г. Хофстеденің мәдени өлшемдерінің қалай фреймделетінін зерделеу үшін табиғи тілді өңдеу (NLP) әдістерін қолданады. Бұл зерттеудің маңыздылығы пән аясында жинақталған «білім археологиясына» эмпирикалық талдау жасауынан, ғылыми нәтижелердің өзектілігінен, талдау нәтижесінде Хофстеде 4 779 рет атап өтілетін 438 мақала анықталды. Мақалалардың ең көп саны Journal of Intercultural Communication Research журналына тиесілі, бұл оның кросс-мәдени зерттеулердегі негізгі рөлін айқындайды. Мақалалар негізінен «индивидуализмге қарсы ұжымшылдық» тұжырымдамасына бағытталғанымен, тағы бес нақты фрейм бөлініп шықты: 1) мәдени құндылықтардың халықаралық өзара іс-қимылға әсері, 2) елдер арасындағы салыстырулар, 3) белгісіздіктен қашу, маскулиндік және билік арақашықтығы арасындағы өзара байланыс, 4) мәдениеттің ұйымдарға әсері және 5) билік арақашықтығы жоғары мәдениеттерді түсіну.

Әдіснамалық тұрғыдан зерттеуде тақырыптарды анықтау үшін BERTopic модельдеуі және 1993-2024 жылдар аралығындағы коммуникация бойынша 25 орталық журнал мәтіндерін мұқият алдын ала өңдеу үшін NLTK кітапханасы пайдаланылды. Р. Энтманның фрейминг теориясына сүйене отырып, бұл жұмыс редакторлар мен авторлардың дисциплинарлық

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дердегі анықталған лонгитюдтік трендтер мен циклдік өсімдер жаһандық өзгерістерге жауап ретінде кросс-мәдени теорияның эволюциясын көрсетеді. Бұл нәтижелер әлеуметтік ғылымдардағы мета-синтетикалық зерттеулердің әдіснамалық репертуарын кеңейтеді және коммуникация теориясының даму траекториясы саласындағы ғылыми ізденістер үшін қажет болады.

Түйін сөздер: табиғи тілді өңдеу, BERT талдауы, Хофстеде, кросс-мәдени коммуникация, журнал баспа ісі.

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Анализ культурных измерений Хофстеде в журналах по коммуникациям

Опираясь на предыдущие исследования того, как журналы и ученые в области коммуникаций использовали конструкты Э. Холла, данная работа применяет методы обработки естественного языка (NLP) для изучения того, как в профильных изданиях фреймируются культурные измерения Г. Хофстеде. Значимость этого исследования обусловлена необходимостью эмпирического анализа накопленной «археологии знания» в рамках дисциплины, что особенно актуально на фоне современного кризиса воспроизводимости научных результатов.

Анализ выявил 438 статей, в которых Хофстеде упоминается 4 779 раз. Наибольшее количество публикаций пришлось на Journal of Intercultural Communication Research, что подчеркивает его ключевую роль в кросс-культурных исследованиях. В то время как статьи сосредоточены преимущественно на концепции «индивидуализм против коллективизма», выделились еще пять четких фреймов: 1) влияние культурных ценностей на международное взаимодействие, 2) межстрановые сравнения, 3) взаимосвязь между избеганием неопределенности, маскулинностью и дистанцией власти, 4) влияние культуры на организации и 5) понимание культур с высокой дистанцией власти.

Методологически в исследовании использовалось моделирование BERTopic для извлечения тематики и библиотека NLTK для тщательной предварительной обработки текстов из 25-ти центральных журналов по коммуникациям за период с 1993 по 2024 год. Опираясь на теорию фрейминга Р. Энтмана, работа проясняет, как редакторы и авторы выступают в роли «гейткиперов» (привратников) дисциплинарного дискурса. Выявленные лонгитюдные тренды и циклические всплески в определенных фреймах демонстрируют эволюцию кросс-культурной теории в ответ на глобальные изменения. Эти результаты расширяют методологический репертуар для мета-синтетических исследований в социальных науках и создают надежную основу для дальнейшего научного поиска в области траектории развития теории коммуникаций.

Ключевые слова: обработка естественного языка, анализ BERT, Хофстеде, кросс-культурная коммуникация, издательское дело в журналах.

Introduction

The importance of journal publications and journals as forums for academic discourse is increasingly emphasized as integral for the advancement of academia (McGrail et al., 2006; Romaine, 2012). Studies indicate that academic success, as well as theoretical and methodological understanding, are significantly influenced by the publishing of and reading of academic journal articles (Rose, 2019). Romaine (2012) views academic journals as embodiments of society, with journal editors, reviewers, and authors playing a crucial role in fostering societal and disciplinary understanding. Journals and editors serve as gatekeepers, assessing the merit of manuscripts for publication and ultimately deciding who receives an opportunity to add to that understanding (Warren & Sato, 2024).

In recent years, communication scholars have been concerned about the emerging crisis surrounding the reproducibility and credibility of scientific research (Freiling et al., 2024; Long, 2021; Vermeulen & Hartmann, 2015). Considering the continuous increase in scientific publications (Bornmann et al., 2021) evidence-synthesis methods (such as meta and computational analysis) are becoming increasingly relevant in communication (van Atteveldt et al., 2022). In this context, the empirical examination of published research has become a responsibility for communication researchers (Rains et al., 2018). Considering academic discourse is as Foucault (1969) called it, an “archaeology of knowledge”

with "rules of formation" (p. 38), the current study explores this discourse within communication. Specifically, this study examines how the disciplinary understanding of one theoretical construct has been framed (Entman, 2007) in communication journals, Geert Hofstede's cultural dimensions (1980, 1991, 2001). These dimensions have been chosen for analysis as researchers have asserted the dimensions have had the most profound effect on shaping communication, particularly the sub-disciplines of intercultural and cross-cultural communication (Croucher et al., 2015; Croucher & Kelly, 2019; Merkin et al., 2014). Specifically, a meta-analysis of Hofstede's dimensions in published communication research found significant relationships between each dimension and various communication patterns (Merkin et al., 2014). Using Natural Language Processing (NLP) and BERTopic for the extraction of topics, the current study builds on this work and examines the extent to which these dimensions are cited and how they are framed in published communication journal articles.

Hofstede's Cultural Dimensions

Cultural dimensions, developed by Geert Hofstede, are a framework for cross-cultural comparison. It examines how a society's culture influences the values of its members and how these values are linked to behavior. Hofstede simplified cross-national cultural diversity into country-specific scores across key dimensions (Beugelsdijk & Welzel, 2018). According to Hofstede (1980, 1994, 2001, 2011), there are six cultural dimensions: power distance, uncertainty avoidance, individualism vs. collectivism, masculinity vs. femininity, long-term vs. short-term orientation, and indulgence vs. restraint.

Power distance refers to the degree to which members with less power in organisations and institutions accept and anticipate unequal distribution of power. Uncertainty avoidance refers to the degree to which a society tolerates ambiguity and uncertainty. In cultures that avoid uncertainty, people tend to be more emotional and anxious, while in cultures that accept uncertainty, people are more open to differing opinions and prefer fewer rules. Individualism vs. collectivism refers to the extent to which people in society integrate into groups. Individualistic societies prioritize personal independence with loose family ties, while collectivist societies emphasize strong and cohesive in-groups. Masculinity vs. femininity refers to the division of values between genders, with masculinity emphasizing competitiveness, assertiveness, and achievement, while femininity highlights cooperation, modesty, caring for the weak, and quality of life. Long-term vs. short term orientation links the past with present and future actions, where short term emphasizes past- and present-focused values like tradition and consumption, while long term prioritizes future-focused values like perseverance and thrift. Indulgence vs. restraint refers to the extent of freedom that societal norms allow individuals to satisfy their desires. Indulgence reflects a society that permits free gratification of desires and enjoyment, while restraint regulates gratification and adheres to social norms (Hofstede, 1980, 2001, 2011).

Extensive research in communication has linked these six dimensions to various communication constructs. In a meta-analysis, Merkin et al. (2014) found that research shows individualism is positively correlated with direct communication and self-promotion; high power distance is positively correlated with face-saving; masculinity is positively correlated with direct communication; and uncertainty avoidance is positively correlated with face-saving. Additional research, for example, has shown that individualistic and collectivistic cultures differ in levels of argumentativeness (Croucher et al., 2013; Hsu, 2007), conflict styles (Cai & Fink, 2002), and willingness to communicate (Croucher, 2013). High power distance cultures have been shown to promote less organizational dissent (Zeng et al., 2020). High uncertainty avoidance cultures tend to exhibit more behavioral changes when faced with ambiguous situations (Vishwanath, 2003). In an exploration of orientation, Merkin (2004) found long-term oriented individuals were more likely to use cooperative and harmonious facework strategies.

Hofstede's cultural dimensions are widely recognized in fields like psychology, sociology, and management (Beugelsdijk et al., 2017; Søndergaard, 1994; Steenkamp, 2001). The dimensions are regarded as a dominant framework for explaining behavioural differences between countries (Williamson, 2002) and the most popular cultural theory in the social sciences (Sunny et al., 2019; Taras et al., 2011). Notably, Hofstede's model laid the groundwork for developing social scientific theory in cross-cultural studies (Sekaran, 1983). It is widely praised for its simplicity and ease of use, as well as the ability to compare cultures through quantitatively, which are fundamental reasons for its popularity in academia (Dimitrov, 2014; Hoppe, 2004). As Kirkman et al. (2006) stated, Hofstede's work has become

mainstream, largely because he developed a parsimonious national culture framework with multiple dimensions, along with providing country indexes for these dimensions.

Despite its significance and popularity, Hofstede's framework has faced criticism. First, Hofstede's data collection and sampling methods have been criticized for lacking representativeness (Baskerville, 2003; McSweeney, 2002). Javidan et al. (2006) noted Hofstede's data may be U.S.-centric, and centred on a specific company. The second criticism focuses on the labelling of the dimensions and the face validity of their content (Minkov, 2017). Specifically, the individualism vs. collectivism dimension has been questioned for failing to accurately reflect the content of the underlying items (Brewer & Venaik, 2011). Third, the research could have been culturally biased, as the team, consisting of Europeans and U.S.-Americans, may have unintentionally shaped the interpretation of the responses through a Western perspective (Dartey-Baah, 2013). In addition, critics question whether these dimensions apply to culture, stressing that different samples could result in various dimensions and order of nations (Erez & Earley, 1993). Overall, no matter where researchers stand on the dimensions from a theoretical or methodological point of view, they have had a profound impact on the communication discipline (Croucher et al., 2015). Building off previous research, which has argued Hofstede's dimensions have influenced the communication discipline (Croucher & Kelly, 2019; Merkin et al., 2014), we pose two research questions to further understand the extent to which these dimensions have influenced the discipline. Specifically, this study builds off framing theory (Entman, 2007) to understand how journal articles have framed Hofstede's dimensions. Framing is defined as "the process of culling a few elements of perceived reality and assembling a narrative that highlights connections among them to promote a particular interpretation" (p. 164). Media, such as journals, play a significant role in shaping perception. Gamson and Modigliani (1989) for example described framing as emphasizing some parts of reality while ignoring other aspects of reality. Thus, to understand how journals publications frame Hofstede's dimensions and thus influence the academic discourse, we pose the following:

RQ1: What is the frequency of communication journals referencing Hofstede between

1993 and 2024?

RQ2: What frames have emerged linked with Hofstede in communication journals?

Methodology

Data Collection and Pre-Processing

The main data collection method was manual downloading. The keyword "Hofstede" was used to search for relevant articles in 25 communication journals identified as central to the discipline. Twenty-three of these journals were selected from journals used in Griffin et al.'s (2018) analysis of scholarly productivity, while two intercultural/ cross-cultural communication journals were added for a total of 25 journals. These journals were previously explored in Xu and Croucher (2025): "*Argumentation and Advocacy, Communication Education, Communication Monographs, Communication Quarterly, Communication Reports, Communication Research, Communication Research Reports, Communication Studies, Communication Theory, Critical Studies in Mass Communication, Howard Journal of Communication, Journal of Applied Communication Research, Journal of Broadcasting & Electronic Media, Journal of Communication, Journal of Communication and Religion, Journal of Intercultural Communication Research, Journal of International and Intercultural Communication, Journalism and Mass Communication Quarterly, Qualitative Research Reports in Communication, Quarterly Journal of Speech, Southern Communication Journal, Text and Performance Quarterly, Western Journal of Communication,* and *Women's Studies in Communication"* (p. 6) . The search period was 1993-2024, to include the past 20 years. The final data set contains 438 articles related to Hofstede. The dataset was uploaded to Google Drive for convenient access via Google Colab, an online Python notebook platform. The data were collected as PDF files from the websites.

The basic extraction of PDF content was accomplished through using PyMuPDF. Each journal used a different search and data retrieval system; therefore, the metadata of the articles and the main text were cleaned and extracted before being passed to more advanced models. Text preprocessing is required to make the text meaningful for NLP. The following were cleaned for uniformity: reference and inline citation, DOI and URLs, boilerplate and ISSN, line breaks and excessive space, and stopword removal (van Atteveldt et al., 2022). For stopword removal, the NLTK stopword library was used.

Data Extraction

A critical part of this research is to extract the related parts of the target articles. Table 1 shows the

attributions related to the metadata of the articles. Most metadata can be extracted on the first page of the file. However, due to the different development status of information technology in the early 1990s, some journals don't calculate viewership for each article.

Table 1
Data Structure of the Main Data

Title	**Authors**	**Keyword**	**Journal name**
Title of the paper	Author names	Search keyword	Published journal
Published time	**Article views***	**Main content**	**Raw text**
Datetime format	Viewership of the article	Main cleaned text	The original text from PDFs

* *Some journals do not contain this information.*
Note: Compiled by the author.

The title, main content, and raw text of each article are the main analyzed text for this study. The journal name and keywords are used for visualizations along with NLP. All the above information is used to analyze how frequently Hofstede is mentioned in communication journals over time. The next extraction is locating the relevant keywords for Hofstede. Regex is used to find the keyword patterns. Table 2 shows the data structure used in the BERTopic analysis. The context will be extracted along with the keywords. This data structure counts the frequency mentions and is used in the topic modelling. The "matched_content" helps identify how Hofstede is framed in the academic discourse.

Table 2
Data structure for BERTopic Model

Title	**Journal name**	**Published time**	**Keyword**	**Matched content**
Title of the paper	Published journal	Datetime format	Search keyword	Relevant context with the target keyword

Note: Compiled by the author.

Topic Extraction Model: BERTopic

BERTopic involves using different NLP libraries to perform a topic modelling task. It categorizes group text into topics that can be explained while retaining keywords. Based on previous works, the matched content becomes the main analysis target of the model. First, the matched content is converted into embeddings using the sentence transformer model. This model captures the semantic meaning between sentences. Although BERTopic performs the embedding functions, the precalculated embeddings increase the efficiency and accuracy of the embeddings. The second step is to stabilize the output of the model by fixing a random state. The reason behind this is that BERTopic uses UMAP to reduce the dimensions of the data. The third step is that the number of topics that get extracted is predefined by the programmer. This is done by tuning the cluster size within the HDBSCAN model. The higher the number, the fewer the topics created.

The vectorizer model optimizes the representation of the results. First, it removes stopwords. Then it focuses on certain words like nouns or adjectives. There are other ways to improve the representation of the topics. In this case, POS is used because of its simplicity and strength in academic-type content. Appendix 1 includes the embedding process for the raw data and the parameter setting for the BERTopic model.

Appendix 1

Graph 1: Embedding Process of Raw Data Paper

```
[13] #Calculate the embedding prior to the bertopic
     embedding_model = SentenceTransformer("all-MiniLM-L6-v2")
     embeddings = embedding_model.encode(hall_df['token_strings'].tolist(), show_progress_bar=True)
```

```
modules.json: 100%  349/349 [00:00<00:00, 19.9kB/s]
config_sentence_transformers.json: 100%  116/116 [00:00<00:00, 7.41kB/s]
README.md: 100%  10.7k/10.7k [00:00<00:00, 534kB/s]
sentence_bert_config.json: 100%  53.0/53.0 [00:00<00:00, 2.85kB/s]
config.json: 100%  612/612 [00:00<00:00, 33.6kB/s]
model.safetensors: 100%  90.9M/90.9M [00:00<00:00, 141MB/s]
tokenizer_config.json: 100%  350/350 [00:00<00:00, 20.9kB/s]
vocab.txt: 100%  232k/232k [00:00<00:00, 7.47MB/s]
tokenizer.json: 100%  466k/466k [00:00<00:00, 13.5MB/s]
special_tokens_map.json: 100%  112/112 [00:00<00:00, 4.83kB/s]
1_Pooling/config.json: 100%  190/190 [00:00<00:00, 11.6kB/s]
Batches: 100%  14/14 [00:09<00:00,  1.33it/s]
```

Graph 2: Parameter Setting for BERTopic Model

```
[71] #Adjust the parameter within the model to increase efficiency

     from umap import UMAP

     umap_model = UMAP(n_neighbors=15, n_components=5, min_dist=0.0, metric='cosine', random_state=42)

     from hdbscan import HDBSCAN

     hdbscan_model = HDBSCAN(min_cluster_size=22, min_samples=5, metric='euclidean', cluster_selection_method

     from sklearn.feature_extraction.text import CountVectorizer

     vectorizer_model = CountVectorizer(stop_words="english", min_df=1, ngram_range=(1, 4))

     from bertopic.representation import PartOfSpeech

     pos_model = PartOfSpeech("en_core_web_sm")
```

Results and discussion

Frequency of Referencing Hofstede

From 1993 to 2024, the 25 journals under analysis included a varied number of references to Hofstede. The journal with the most references to Hofstede was the *Journal of Intercultural Communication Research* (n = 109), followed by the *Journal of International and Intercultural Communication* (n = 37), *Communication Quarterly* (n = 29), and *Communication Research* (n = 29). Table 3 shows each journal's total number of references to Hofstede between 1993 and 2024. In total, there were 438 articles and 4779 mentions of Hofstede.

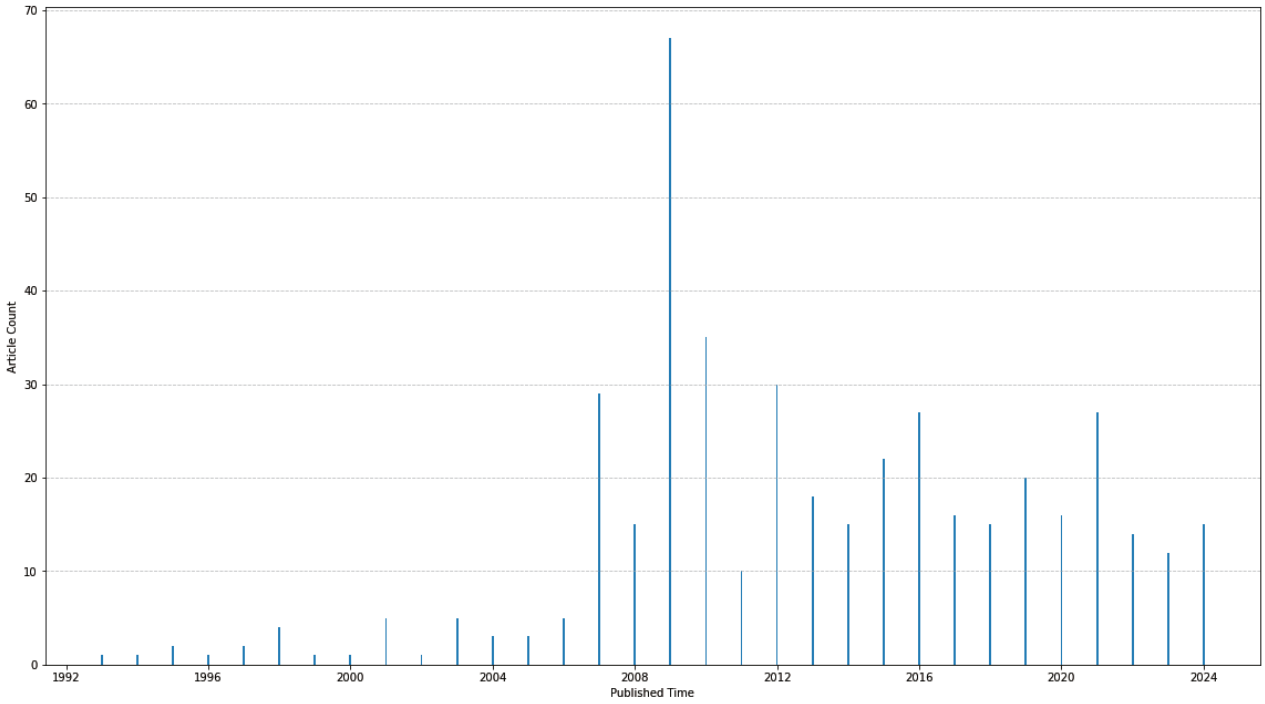
Between 1993 and 2024, there was a surge in the number of articles mentioning Hofstede in 2007. Before 2007, the average number of articles mentioning Hofstede per year was around 2.5. After 2007, the number increased to 22.3 per year. Figure 1 shows the trend in article mentions from 1993 to 2024. Specifically, in 2007, 29 articles mentioned Hofstede. The top journal contributors were the *Journal of Intercultural Communication Research* (n = 11), *Communication Quarterly* (n = 6), and *Communication Education* (n = 4). In 2009, the article number was 67, with 17 journals citing articles related to Hofstede. The top journal contributors were *Communication Quarterly* (n = 10 articles), *Communication Research Reports* (n = 8), and *Communication Studies* (n = 7). Since pre-2007, references to Hofstede have gone up nearly 10 times.

Table 3
Total Number of Journal Articles Containing Hofstede by Journal

Journal	Hofstede References	Journal	Hofstede References
Argumentation and Advocacy	5	*Communication Education*	19
Communication Monographs	20	*Communication Quarterly*	29
Communication Reports	8	*Communication Research*	29
Communication Research Reports	27	*Communication Studies*	24
Communication Theory	7	*Critical Studies in Media Communication*	0
Howard Journal of Communication	23	*Human Communication Research*	23
Journal of Applied Communication Research	7	*Journal of Broadcasting & Electronic Media*	9
Journal of Communication	20	*Journal of Communication and Religion*	2
Journal of Intercultural Communication Research	109	*Journal of International and Intercultural Communication*	37
Journalism and Mass Communication Quarterly	14	*Qualitative Research Reports in Communication*	2
Quarterly Journal of Speech	1	*Southern Communication Journal*	15
Text and Performance Quarterly	2	*Western Journal of Communication*	13
Women's Studies in Communication	0		

Note: Compiled by the author.

Figure 1
Distribution of Articles referencing Hofstede from 1993 to 2024



Note: Compiled by the author.

Framing of Hofstede

BERTopic extracted six frames from 438 articles and 4779 mentions. These frames are: 1) collectivism vs. individualism, 2) the impact of cultural values in international interactions, 3) cross-country comparisons, 4) the interplay between uncertainty avoidance, masculinity, and power distance, 5) the influence of culture on organizations, and 6) understanding high-power distance cultures.

The first frame (Topic 0) that emerged via BERTopic analysis was individualism vs. collectivism. Key words in this frame include: individualism, collectivism, Hofstede, and cultures. Figure 2 is a wordcloud of the individualism and collectivism frame.

Figure 2

Wordcloud of Individualism vs. Collectivism Frame



Note: Compiled by the author.

The second frame (Topic 1) was the impact of cultural values in international interactions. Key words in this frame include: consequences, international, Hofstede, values, and culture. Figure 3 is a wordcloud of the impact cultural values in international interactions frame.

The third frame (Topic 2) was cross-country comparisons. Keywords in this frame include: Hofstede, cultural dimension, and countries. Figure 4 is a wordcloud of the cross-country frame.

The fourth frame (Topic 3) was the interplay between uncertainty avoidance, masculinity, and power distance. Keywords include: uncertainty avoidance, Hofstede, distance, and masculinity. Figure 5 is a wordcloud of the interplay between uncertainty avoidance, masculinity, and power distance frame.

Figure 3

Wordcloud of Impact Cultural Values in International Interactions



Note: Compiled by the author.

Figure 4

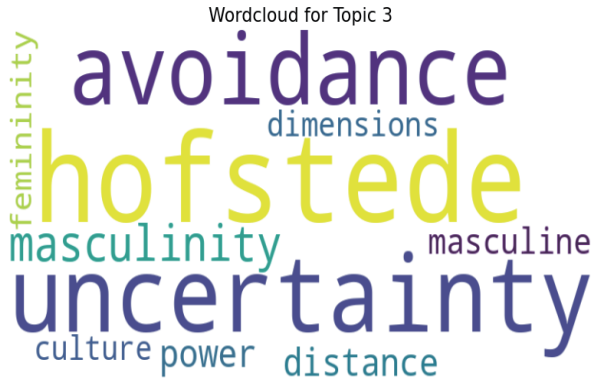
Wordcloud of Cross-country Comparisons



Note: Compiled by the author.

Figure 5

Wordcloud of Interplay between Uncertainty Avoidance, Masculinity, and Power Distance



Note: Compiled by the author.

The fifth frame (Topic 4) was the influence of culture on organizations. Keywords include: mind, software, culture, Hofstede, and organizations. Figure 6 is a wordcloud of the influence of culture on organizations frame.

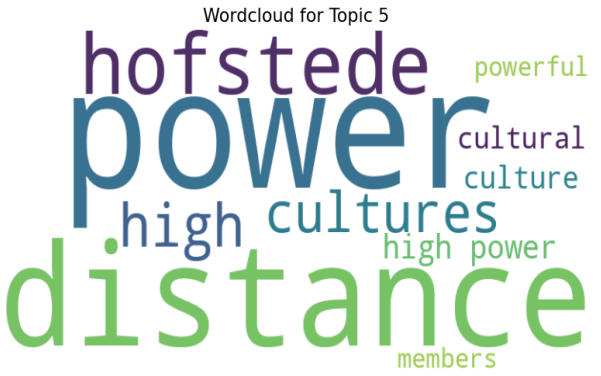
Figure 6
Wordcloud of Influence of Culture on Organizations



Note: Compiled by the author.

The sixth and final frame (Topic 5) was understanding high-power distance cultures. Keywords include: high power, distance, and Hofstede. Figure 7 is a wordcloud of the understanding high-power distance cultures.

Figure 7
Wordcloud of Understanding High-power Cultures



Note: Compiled by the author.

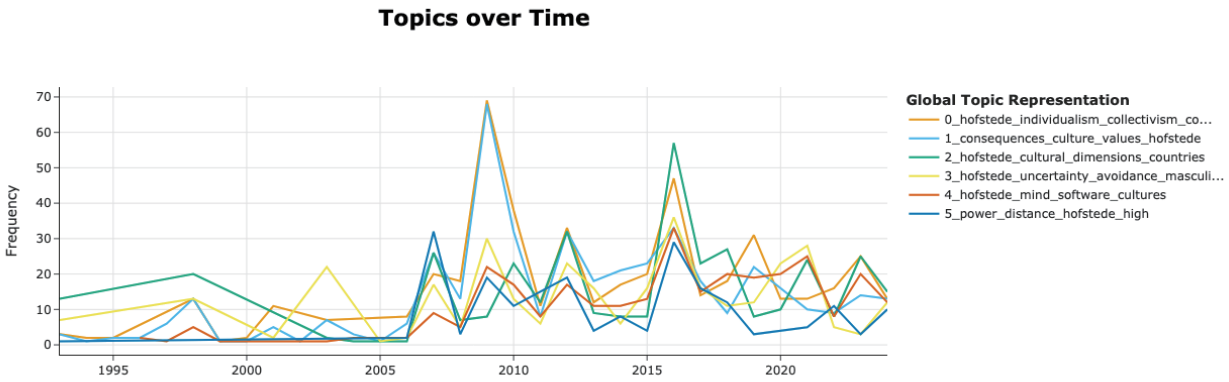
There are trends in these frames over time. The cross-country comparison frame has consistently been mentioned since 1993. There is a spike in collectivism vs. individualism and the impact of cultural values in international interactions frames in 2009. The influence of culture on organizations and the understanding of high-power cultures frames appear frequently only after 2007. These trends are visually represented in Figure 8.

The NLP and BERTopic analysis results revealed insights into how Hofstede was framed in communication journals from 1993 to 2024. Throughout the dataset, a total of 438 articles referenced Hofstede 4,779 times. The *Journal of Intercultural Communication Research* published by far the most articles referencing Hofstede (n = 109 or 31%), highlighting its significance in intercultural and cross-cultural communication scholarship. This analysis indicated that Hofstede's framework primarily examines individualism vs. collectivism, especially in international and cross-cultural settings. This dimension serves as a crucial element in comprehending cultural differences in communication research. Furthermore, additional frames were identified in the journals' analysis of Hofstede: the impact of cultural values on international interactions, cross-country comparisons, the interplay between uncertainty avoidance, masculinity, and power distance, the influence of culture on organizations, and understanding high-power distance cultures.

Hofstede's dimensions remain a dominant theoretical perspective for intercultural and cross-cultural communication. The concentration of citations in certain journals appears to show potential disciplinary boundaries, where Hofstede's work is mainly confined to intercultural, cross-cultural, and international communication rather than widely incorporated into broader communication studies. Looking to the frequency of citations, 33.33% of the articles came from two journals, the *Journal of Intercultural Communication Research* and the *Journal of International and Intercultural Communication*. Both of these journals in their Aims and Scope emphasize "culture," "intercultural," and "cross-cultural." None of the other journals included have all of these three terms. Hofstede's cultural dimensions focus on how a society's culture influences the values of its members and how these values are linked to behavior. Outside of the communication discipline, the dimensions are regularly used in marketing (Soares, 2007), psychology (Taras et al., 2010), business (Taras et al., 2012), disaster research (Noll et al., 2020), in accounting (Khlif, 2016), etc. However, in the journals central to the communication discipline, the dimensions appear to be relegated to the intercultural/cross-

cultural communication oriented journals. We propose this is because the dimensions are largely taught in the discipline as a framework for inter-cultural and cross-cultural comparison. Thus, for many in the field, these dimensions are part of the intercultural and cross-cultural discipline.

Figure 8
Topics/Frames over time



Note: Compiled by the author.

As a foundational framework for analyzing social scientific phenomena, Hofstede's increase in citations since 2007 suggests the cultural dimensions have gained increased recognition in these communication journals. The BERTopic analysis indicated collectivism vs. individualism emerged as the most significant frame, underscoring its relevance for communication researchers in distinguishing communication cultural patterns and values. The emergence of topics such as "the influence of culture on organizations" and "understanding high-power distance cultures" after 2007 signifies a shift in research focus, possibly influenced by the growing globalization of workplaces, organizational studies, and communication studies as a discipline. The rise in the discourse regarding "collectivism vs. individualism" and the "impact of cultural values in international interactions" in 2009 corresponds with broader conversations on internationalization in academic and professional domains (Fukushima et al., 2009; Lam et al., 2009; Liddicoat, 2009; Meeuwesen et al., 2009; Ryan & Viete, 2009; Signorini et al., 2009; Tapanes et al., 2009; Vodosek, 2009; Xie et al., 2009).

While there has been criticism of Hofstede's dimensions (Baskerville, 2003; Brewer & Venaik, 2011; Croucher et al., 2015; Dartey-Baah, 2013; Erez & Earley, 1993; Javidan et al., 2006; McSweeney, 2002; Minkov, 2017), these criticisms did not emerge as a frame within these communication journals. While there are critiques of Hofstede's dimensions, such critiques are not part of the discourse in the journals deemed central to the discipline (Griffin et al., 2018) and the two primary intercultural/cross-cultural communication journals.

From a methodological point of view, the results of this study demonstrate the value of integrating computational tools, such as NLP with BERTopic to understand academic discourse. By capturing frequencies over time, as well as framing patterns, this approach bridges computational methods with communication theory. This methodological approach offers deeper insight into the intricacies of how these dimensions have been framed by communication researchers within communication journals.

This study is not without limitations. First, the temporal span of data (1993-2024) highlights trends but does not fully encompass all articles since the publication of Hofstede's dimensions. Future research could conduct an analysis from 1981, the year after the publication of Hofstede's *Culture's consequences: International differences in work-related values.* Second, this analysis only covers 25 communication journals. While this analysis does provide an understanding of how the field frames these dimensions from these journals, there are many other journals that comprise "communication." Depending on the Terms and Conditions/

Use, and the website design of each journal, researchers could use data web scraping software like Octoparse, Sprinklr, etc. to pull articles from a larger journal data set. Third, this study focused solely on Hofstede's dimensions and how these are framed in communication journals. Along with Hofstede's dimensions, Hall's (1966, 1976) theories of context, time and proxemics (Chau & Gudykunst, 1987; Usunier & Roulin, 2010; Würtz, 2005) and Schwartz's cultural value types (Gudykunst et al., 1996; Zhang et al., 2005) have also been applied in intercultural and cross-cultural communication. Future research could compare and contrast how the discipline has framed the work of Hofstede, Hall, and Schwartz.

Conclusion

This study utilized BERTopic analysis to examine how Hofstede's cultural dimensions have been framed in communication journals from 1993 to 2024. The results highlight the impact of Hofstede's framework on communication research, especially in the fields of intercultural and cross-cultural communication. The frequency of Hofstede's citations surged after 2007, especially in journals like the *Journal of Intercultural Communication Research* and the *Journal of International and Intercultural Communication*, which reflects a growing application of his dimensions in these communication journals. The concentration of citations in specific journals suggests Hofstede's work is confined to certain disciplinary boundaries, limiting its broader application in communication research. With BERTopic extraction analysis, the study offers insights into how academic discourse has framed culture over time. Additionally, it contributes to the ongoing discourse on the evolution of communication theories and the role of journals in shaping academic and societal understanding. As scholars continue to engage with cross-cultural research, the discourse surrounding Hofstede's work will likely evolve, reflecting broader shifts in communication and cultural studies.

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