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An empirical study of Hofstede's model and online communication skills

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This study examines the effects of Hofstede's cultural dimensions on online communication skills (OCS) in Jordanian university students, who increasingly use digital platforms for academic and social communications. The study employs a quantitative cross-sectional survey design and uses responses from 600 students. SPSS was used to obtain descriptive statistics, while SmartPLS measured model validation and tested the hypotheses. Cronbach's Alpha, AVE, and HTMT validated reliability and validity. The structural model exhibited very strong explanatory power, explaining 93% of the variance in OCS. The findings indicated that all six cultural dimensions, namely Power Distance, Uncertainty Avoidance, Collectivism, Femininity, Long-Term Orientation and Indulgence, produced positive and significant results for OCS, with Collectivism affecting OCS most powerfully and Power Distance exerting the least influence on OCS. These findings indicate that the digital communication behaviors of Jordanian students are based on a combination of traditional collectivist values and emerging expressiveness encouraged by the opportunities offered on-line. Theoretically, this study extends Hofstede's model into the area of digital communication within the Middle Eastern context and, practically, presents useful information on how educators and policy makers can arrange the digital learning environment in a culturally conducive manner. Future research is recommended to include cross-national and longitudinal enquiry so that there can be a better understanding of how cultural differences in values affect online communication as it relates to different environments.

KEYWORDS

collectivism, cultural values, digital communication, Hofstede's cultural dimensions, Jordan, online communication skills

1 Introduction

In the current time of digital tech communication, people from all parts of the world can talk to each other. Most of what we learn, work, and discuss is done digitally. There are communication tools like Zoom, Google Meet, and WhatsApp that allow for synchronous or asynchronous communication for distance learning and skills. No matter where you are, however, you have freed yourselves of intermittent time and space, and can learn, collaborate, and create ideas (George et al., 2021; Wang and Devitt, 2026). Becoming served by these tools yet undoubtedly carries challenges, especially while trying to have people working together from different cultural backgrounds. What seems polite or clear in one culture might seem rude or confusing in another (Eden et al., 2024a, 2024b; Amelia and Balqis, 2023). This is because communication involve much more than the language or technology. It's culture how we were

raised, what we value and what we expect from others (Reis and Melão, 2023; Farley and Burbules, 2022).

This is what Hofstede's model of cultural dimensions describes. By simple dummies, Hofstede distinguished such specifics of national cultures as a level of comfort with hierarchy, a way to handle uncertainty, or attitude towards individual vs. group activities, or in other words the identity of its nationals, which predetermine the way people interact. For instance, in a culture where the first mentioned above factor is appreciated, people are to refrain from disagreeing with others in online discussions. In highly individualist culture people think it's fine to say what's on their mind—even to a boss (León et al., 2023; Eden et al., 2024a, 2024b). And in rule preferring culture issues related to online conversations would be formal and proper on many other counts whereas in other factors they would be rather relaxed (Carlgren and BenMahmoud-Jouini, 2022; Sohaib and Kang, 2016).

Though cross-cultural communication happens more than ever before, we do not quite have an ample comprehension of the ways cultural values influence digital communication. With growing trends of online classes, telecommuting, and virtual communities, knowing cultural influences is more than a matter of academic interest—it helps avert miscommunication, fosters better cooperation between parties involved, and leads towards inclusive digital environments (Sato et al., 2023; Thimm-Kaiser et al., 2023).

Hofstede's cultural dimensions are thereby taken as the strategic angle for insight into national cultural impacts on individual behaviors in digital environments. Though earlier studies looked at these dimensions amply from the perspectives of Western and Asian contexts, gaps exist in findings that relate to Middle Eastern societies. Moreover, Hofstede examined cultural dimensions within real-world contexts; very few studies, if any, have applied the full set of Hofstede's cultural dimensions to virtual environments. It throws light on how cultural characteristics come to play in online communication among the Arab context, a place where collective and traditional values interact with fast digital modernization.

The study seeks to answer the following question: What is the influence of Hofstede's six cultural dimensions of power distance, uncertainty avoidance, individualism/collectivism, masculinity/femininity, long/short-term orientation, and indulgence/restraint on online communication skills? To answer this question, this study intends to reveal the complicated nature of cross-cultural interactions in digital settings and provide hands-on recommendations for educators, designers, and international communicators.

2 Literature review

2.1 Online communication skills

The internet is now a part of learning, working, and socializing enabled by email, chat, or video call (Kotlyarova et al., 2023). It allows for both real-time and delayed conversation helping teamwork across different places. Even though the same tools exist everywhere how they are used varies greatly based on local customs and beliefs (Abdallah et al., 2024). Culture affects the way people show feelings give comments or read the mood and purpose in online messages (Luo et al., 2021). What one culture regards as polite and effective communication may seem improper or vague to another. Online interactions are never just technical actions but always culturally mediated processes reflecting the social

norms beneath the surface (Seraj, 2012; King et al., 2016). Many scholars have echoed this, stating that being technologically savvy is insufficient for effectively communicating online across different cultures (Cîrțiță-Buzoianu et al., 2022; Misir, 2017). The higher an individual's online communication skill (OCS), the greater their cultural sensitivity and emotional awareness of message clarity based on Hamdan (2012). Where these skills are deficient, miscommunication accompanied by anxiety is predominant in such multicultural digital spaces, and academic environments (Eden et al., 2024a, 2024b; Alam and Mohanty, 2023a, 2023b).

Research has shown that the infrastructural setup of the Internet often reflects the communication norms of the West, including values of directness, openness, and immediacy (Patrick and Hollenbeck, 2021). These values create digital inequities for cultures that emphasize values of restraint, hierarchy, or indirect communication (Akintayo et al., 2024; Leng and Zhang, 2023).

Western and Asian contextual challenges have been discussed, but the major gap remains in the understanding of how cultural dimensions influence OCS in Middle Eastern societies. Here, collectivist traditions and digital practices are emerging to co-exist (Hatamleh et al., 2023; Thimm-Kaiser et al., 2023). Thus, a cultural view of online communication is essential for the design of inclusive digital learning environments. The knowledge of the influence of national cultural values on OCS will guide educators and education policymakers in developing culturally responsive training modules that will enhance students' intercultural competence as well as their communication competence.

2.2 Cultural dimension overview and hypothesis development

Geert Hofstede's cultural dimensions provide an easy yet deep look at the main ways of thought, action, and interaction between people of different countries. His model comes from research on IBM workers in over 50 nations. He found six main cultural values that guide how societies work (Hofstede, 2001; Hofstede et al., 2010). These include:

- Power distance: how comfortable people are with hierarchy and authority.
- Uncertainty avoidance: how people cope with ambiguity or unknown situations.
- Individualism vs. collectivism: whether people prioritize personal goals or group harmony.
- Masculinity vs. femininity: whether a culture values competition and success or care and quality of life.
- Long-term vs. short-term orientation: whether people plan for their future or focus on immediate results.
- Indulgence vs. restraint: whether people feel at liberty to indulge life or they adhere to very strict social codes (Hofstede et al., 2010).

These values are not just academic; they find expression in speech, behavior, and particularly in net-based communication. As education, work, and social life go increasingly digital, cultural differences become easier spotted-and harder ignored. In online communication, especially on platforms where people do not respond instantly. Misunderstandings can easily take place. In the absence of body language and tone, people fall back more heavily on cultural "habits" to interpret what others are trying to say (Eden et al., 2024a, 2024b; Sato et al., 2023). Jordan makes a perfect case of how culture interacts with technology. Traditionally, values emphasize high respect for elders, loyalty to the group, and modesty in public expression—thus framing

collectivist cultures with high power distance. On the other hand, younger Jordanians are growing up in a more digitalized world. They use social media as well as openly discuss matters expressing themselves freely online (Rabaa'i, 2017; Hatamleh et al., 2023). This results in a new cultural mix: on one hand side of the pole stands traditionalism and social structure whereas on the other is innovation and personal expression. Well, Jordan's case poses a huge question: How do cultural values change when they are digitalized? But, then again, how do online platforms in turn influence cultural habits?

2.2.1 Power distance and online communication skills

Power Distance (PD) refers to how much people accept unequal distribution of authority and status in a society, between High power distance usually comes with hierarchical relationships which people accept as a normal course of life. It is our nature to defer to authority not questioning the teacher, not questioning the manager, not questioning whoever is in charge. For example, we may have middle managers who sit reserved afraid to dissent afraid to say 'no' (Eden et al., 2024a, 2024b; Kezar and Carducci, 2023).

This may be in opposition to the standards of many online forums, where candid communication, equal participation, and open discussion are expected (León et al., 2023; Chan et al., 2025). While people with low PD cultures may freely express their opinions and criticize ideas, those with high PD cultures may remain silent, avoid group discussions, or wait for express permission to contribute in online courses or workplaces. It is essential to acknowledge these cultural variations in order to create digital environments where everyone is valued and feels comfortable participating. In online classrooms or virtual workspaces, people from high PD cultures like Jordan—may prefer to keep communication formal.

They may be reluctant to oppose educators or supervisors, and they may avoid communicating unless prompted to communicate (Peter et al., 2022). This may hinder the development of key online communication skills, such as assertiveness, questioning, and active responding. That said, if online formats are rigid and plainly administered by an authority figure (for example, instructor-led formats), participants from high PD cultures may be more comfortable. Clear job descriptions and expectations can reduce confusion and enhance the feeling of orderliness (Alam and Mohanty, 2023a, 2023b).

Conversely, in cultures with low power distance, people are more accustomed to equality in communication. It is normal for students to challenge ideas, speak freely about ideas, and interact with teachers or leaders and others in back and forth. Online this results in many more interactive discussions, greater collaborative peer input, and more in-depth critical thinking (Pham, 2019).

From the foregoing theoretical perspectives, the following hypothesis emerges:

H1: Power distance positively correlates with online communication skills in Jordan.

2.2.2 Uncertainty avoidance and online communication skills

Uncertainty Avoidance (UA) describes the extent to which members of a society are uneasy about ambiguity, novel conditions, and uncertainty (Carlgrén and BenMahmoud-Jouini, 2022; Sohaib and

Kang, 2016). Greater preference for rules, order, and explicit directions when need to reduce risk as well as attain psychological comfort in high UA cultures (Peter et al., 2022; Eden et al., 2024a, 2024b). Such instincts mold the very act of communicating online. People belonging to high UA cultures, like Jordan, might tread warily when dealing with digital communication. They might want clearly laid down instructions, a formal tone to the conversation, and step-by-step interaction so that there is no scope for misunderstanding. In addition, they may have a lower tolerance level toward informal and spontaneous exchange and readiness to participate in open-ended discussion—more optimistic—more reluctant to risk disagreement (Akintayo et al., 2024; Alam and Mohanty, 2023a, 2023b). On the other hand, Low UA cultures promote flexibility, trial and comfort with uncertainty. Netizens from such climes usually welcome informality in tone, unclear task role and variation in the style of communication. In the Jordanian context, where uncertainty avoidance is somewhat high, structured communication formats and explicit expectations may create comfort and thus foster the development of communication skills. This leads to the formulation of the following hypothesis.

H2: Uncertainty avoidance positively correlates with online communication skills in Jordan.

2.2.3 Individualism versus collectivism and online communication skills

The individualism–collectivism dimension reflects how much or how little a country puts a premium on personal autonomy vis-a-vis group cohesion (Mohammad et al., 2022; Germani et al., 2021). In the formulation of rules in individualistic cultures, people are allowed to explicitly state their opinions, emphasize personal goals, and use direct communication. As a collectivist culture like Jordan, its citizens must observe harmony within the group and between authority and older people, and their communication is even more indirect and context-sensitive (Rafiq et al., 2022; Al-Ma'aitah et al., 2024).

In online environments, these cultural orientations manifest different styles of communication. Users from the individualistic perspective tend to be more assertive, self-disclosing, and participative in discussion forums or any collaborative digital platform (Krys et al., 2022; Lomas et al., 2023). They ask for comments on their work and challenge the ideas presented to them in a debating situation. All this requires good communication skills that can be developed in an online situation (Chen et al., 2021; Li, 2022).

Alternatively, members of collectivist cultures may be less demonstrative in their digital interactions, especially when placed in the presence of authority or others unknown to them. They may avoid social discontentment and stress the maintenance of relational harmony, which may lead to frequency and quality of barrage in the online way in which they express points (Shonfeld et al., 2021; León et al., 2023). The encouragement of interaction relating to groups and supportive activity conducive of group work and collaborative learning, however, likely increases for them. In the Jordanian culture, then, based on the collectivist cultural values, these may install accentuations that would form social and relational bases of conversations which are sympathetic to relational to group needs—crucial to the ontogeny of online communication skills. Thus, Hypothesis Five is postulated:

H3: Collectivism is positively correlated with online communication skills in Jordan

2.2.4 Masculinity vs. femininity and online communication skills

The masculinity-femininity dimension reveals basic cultural differentials between social and work orientations. In the perspective of masculinity, cultural values place importance on attainment, competition, and tangible accomplishment. Communication therefore becomes explicit, related to purpose, and focused on the achievement of goals (Eden et al., 2024a, 2024b; León et al., 2023).

On the other hand, Communication here does not just entail the delivery of messages but also involves the building of relationships, showing empathy, and maintaining social harmony (Wardell, 2011; Peter et al., 2022). Online interactions are heavily influenced by these cultural distinctions. In the case of Masculine cultures, digital communication is assertive and outcome focused. Discussions may be argued about and persuaded about as well as strongly emphasized as to results. This style of leadership does bring about clarity and efficiency in leadership but at the cost of neglecting emotional nuance and group cohesion (Alam and Mohanty, 2023a, 2023b). Feminine cultures add different strengths to digital spaces by making them more inclusive and supportive. Online interactions become more collaborative, nurtured by encouraging words and support read between the lines. Since there are no nonverbal signals in cyberspace to assist misread intentions, such trends help fill this gap and build relational trust; therefore, people from feminine cultures do very well in building team solidarity and keeping a good digital dynamic (Eden et al., 2024a, 2024b; Chase et al., 2002).

The cultural scene in Jordan shows both masculine and feminine traits. Though there is a strong value for achievers and respect, day-to-day dealings tilt more on relationship building, group cooperation, and sharing feelings. These relational strengths can easily be used as a base to build up online communication skills, more particularly in group work, collaborative learning, and emotionally supportive conversations.

Thus, the following hypothesis is suggested:

H4: Femininity has a positive relationship with online communication skills in Jordan.

2.2.5 Long-term vs. short-term orientation and online communication skills

Long-Term vs. Short-Term Orientation (LTO vs. STO) is one of Hofstede's six cultural dimensions describing the degree to which an organization or society places more importance on long-term plans and future rewards rather than short-term objectives and immediate results (Hofstede et al., 2010; Ding, 2003). In long-term-oriented cultures, persistence, planning, and saving for the future are strongly emphasized as values. Short term-oriented cultures focus on the fulfilment of traditions, the immediate fulfilment of social demands, and fast results (Ismailov and Chiu, 2022; Eden et al., 2024a, 2024b). Cultural preferences shape the styles of communication between people in their digital interactions. In a long-term-oriented (LTO) society, it is typical to see an organized and patient method of online correspondence. Message composition in such a society tends to be more deliberate, with continuity of work-in-progress and support manifested through consistent engagement over time. This is more apparent when dealing with educational and professional scenarios wherein planning and

Consistency is really important (Ding, 2003; Chase et al. 2002). In the meantime, people from short-term oriented cultures often prefer

prompt replies, immediate feedback and visible progress. Their online communications may be brief, direct and designed for speedy decision-making. Though this approach may favour rapid results, it also restricts deeper discussions or effective long-term cooperative efforts (Chase et al., 2002; Eden et al., 2024a, 2024b). In Jordan, both aspects are at work. Younger members of the society are enthusiastic about education and long-term goals, the values of long-term thinking. At the same time, traditional cultural values remain prevalent, such as giving timely replies and keeping peace. Thus, the average Jordanian student and professional work out a combination of planning and culturally aware responsiveness (Al-Ma'aitah et al., 2024; Pham, 2019). Since long-term thinking encourages foresight and careful communication, it can have importance in developing thoughtful and systematic online life.

The following hypothesis is put forth:

H5: There is a positive relationship between Indulgence/Restraint and Internet Communication Skills in Jordan.

2.2.6 Assertiveness and online communication skills

The Assertiveness dimension (MAS) represents the degree of assertiveness in people in a culture (Hofstede et al., 2010). Cultures which are highly assertive appear to emphasize the subjects of Self-Assertion and Self-Confidence. As a result, people from cultures such as this will tend to be uncritical, outgoing, frank, socially bold, initiative-takers, considerate, and frank. Environments such as these will probably create opportunities for the development and application of interpersonal skills in various settings (Ahmed et al., 2008; Mullins, cited in Alam and Mohanty, 2023a, 2023b). In more indulgent cultures, people tend to be more open and expressive in their digital communications, using humour, informality, and a willingness to share personal stories, giving rise to flexibility and adaptability while online (Ding, 2003; Eden et al., 2024a, 2024b). Cultures that tend to believe in restraint, on the other hand, are more cautious in their approach, limiting emotional content and self-disclosure, as well as preferring more formal and controlled interactions, which are frequently open to religious and social beliefs of modesty, reputation and the requirements of collectivistic societies (Alam and Mohanty, 2023a, 2023b; Chase et al., 2002). Jordan possesses a mixture of orientations: while traditional family and religion values imply restraint, social media has opened possibilities for younger generations to welcome openness, informality, and emotional expression. This has produced a specialized online communication style that is more self-regulated and expressive, enabling Jordanians (and particularly youths) to balance respect for cultural traditions and the requirements of the contemporary digital environment. The effect is an effective, emotionally rich, adaptable communication style that still conforms to cultural continuity (Sato et al., 2023; Lee, 2020).

Thus, the following hypothesis is advanced:

H6: Indulgence positively correlates with online communication skills in Jordan

3 Methodology

A quantitative cross-sectional survey study was used in this study to assess the influence of Hofstede's cultural dimensions on the online

communication skills of university students in Jordan. This design best suits any study whose purpose is to establish relationships between and among specified variables within a determined population at one time (Creswell and Creswell, 2018).

Data were analysed by the method of Partial Least Squares Structural Equation Modelling (PLS-SEM) using SmartPLS 4.0 software, since this method is considered appropriate for predictive and theory-building studies when latent constructs are involved. PLS-SEM was selected in preference to Covariance Based SEM (CB-SEM) because it works better with data that are not normally distributed, has a complex model structure, and works with a small sample size. Whereas CB-SEM is largely concerned with indices of model fit, PLS-SEM focuses on accuracy and strength of relationships, thus making it quite useful for relatively new areas of inquiry such as online communication in the developing region. Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE) were used to assess measurement validity and reliability. Path coefficients (β values) t -statistics, and p -values have tested hypothesized relationships; all were interpreted at conventional levels of significance (Hair et al., 2014). Results are internally consistent and statistically valid. However, adequate reporting rigor can be brought in by introducing confidence intervals that would provide more accurate estimates of the true effect sizes for improved interpretive transparency.

3.1 Sample and sampling technique

Data has been collected using the convenience sampling method from students of selected universities in Jordan. The author chooses this method because of its practically easy way to reach respondents (Etikan et al., 2016). It does not allow results to be generalized to the wider population since it is a non-probability sampling method, though the limitation is very important and has been noted (Saunders et al., 2009). Convenience sampling is very popular in exploratory studies within social science research when understanding theoretical relationships is more critical than making an inference at the population level (Dornyei, 2007).

The final sample consisted of 600 valid responses, exceeding the minimum required sample size for PLS-SEM analysis. According to Hair et al. (2014), an adequate sample size should be at least 10 times the largest number of structural paths directed toward a construct, ensuring reliable parameter estimates. Similarly, Kock and Hadaya (2018) argue that samples above 200 yield robust statistical power in PLS-SEM models, supporting the adequacy of this study's sample.

A total of 600 valid responses were collected through an electronically distributed questionnaire. The sample included both male (52.2%) and female (47.8%) students, with participants representing different stages of study (first year through fourth year and above). While most respondents were young adults, the sample also included a considerable proportion of older students, some aged 40 and above, thereby broadening the representativeness of the findings beyond the younger demographic.

This age diversity provided valuable insights into how both younger and more mature students perceive and develop online communication skills in light of cultural values. Although the use of convenience sampling may limit the generalizability of results, the large sample size exceeded the minimum recommended threshold for Partial Least Squares Structural Equation Modeling (PLSSEM), ensuring the robustness of the analysis (Hair et al., 2014).

3.2 Measurement scale

This study adopted cultural dimensions scale from Al Omoush et al. 2012 measuring: 1-Power distance, 2-Collectivism vs. individualism, 3-Uncertainty avoidance, 4-Femininity vs. masculinity, 5-Short-term vs. long-term orientation, 6-Restraint vs. indulgence, used 5-point Likert style all items show good reliability and validity as shown in Table 1 for the research variables. Items assessing Online Communication Skills (OCS) were adapted from Abdallah et al. (2024). All items were measured on a five-point Likert scale, ranging from strongly disagree (1) to strongly agree (5).

Table 2 reports the results of reliability and validity testing for the constructs used in this study. All measurement items demonstrated strong outer loadings (ranging from 0.73 to 0.85), which exceed the minimum recommended threshold of 0.70 (Hair et al., 2014). This indicates that the indicators are good representations of their underlying constructs.

Cronbach's Alpha values for all constructs ranged between 0.80 and 0.88, surpassing the accepted threshold of 0.70 (Nunnally and Bernstein, 1994), thus confirming internal consistency reliability. Similarly, the Average Variance Extracted (AVE) values ranged from 0.58 to 0.66, all above the 0.50 cutoff (Fornell and Larcker, 1981), which demonstrates convergent validity.

This output affirms that the variables of culture (power distance, collectivism, uncertainty avoidance, femininity, short-term vs. long-term orientation, and restraint vs. indulgence) and online communication skills (OCS) have been measured by reliable and valid instruments. By results of this analysis, these constructs appear to be internally consistent as well as theoretically sound and thus provide an appropriate basis on which to robustly test the structural model.

Table 3 shows the values of Heterotrait–Monotrait (HTMT) ratios between the constructs of the study to judge their discriminant validity. Since all HTMT values are less than the threshold value of 0.85, and even less than the more liberal criterion of 0.90 (Henseler et al., 2015), this would indicate that these constructs—power distance, collectivism, uncertainty avoidance, femininity, long-term orientation, indulgence, and online communication skills—are empirically different from each other. The highest relationship was between collectivism and online communication skills at 0.592 followed by uncertainty avoidance and OCS at 0.564 which is reflective of Jordan's cultural norms in emphasizing group harmony and structured communication. The lowest relationship was between indulgence and power distance at 0.389 indicating clear conceptual separation. These results also demonstrate discriminant validity, and reinforce confidence in the model, and show that the cultural dimensions used to account for the relationships between online communication skills are separate, distinct constructs (Fornell and Larcker, 1981; Henseler et al., 2015).

3.3 Descriptive analysis

3.3.1 Demographic characteristics

- Sample size: 600 valid responses.
- Age:
 - 18–20 years: 86 (14.3%)
 - 21–23 years: 97 (16.2%)
 - 24–26 years: 87 (14.5%)

TABLE 1 Measurement scale.

Variable		Items	References
Cultural dimensions	1-Power distance	PD1-“Believing that inequalities among people are both expected and desired.”	Al Omoush et al. (2012)
		PD2-“Respecting people having authority because of their position.”	
		PD3-“Believing that people are better off not questioning the decisions of those in authority”	
		PD4-“Believing that people in authority should take care of their subordinates as they would take care of their children.”	
	2-Collectivism vs. individualism	CVI1-Taking other people’s needs and feelings into account when making a decision.	Al Omoush et al. (2012)
		CVI2-Belonging to extended families or clans who protect their members in shared necessity for loyalty.	
		CVI3-Accepting the group’s decision even when personally he or she has a different opinion.	
		CVI4-Believing that when one is born, the success or failure one is going to have been already in one’s destiny	
	3-Uncertainty avoidance	UA1-“Believing that people should avoid making changes because things could get worse.”	Al Omoush et al. (2012)
		UA2-“Believing that it is better to have known bad situation, than to have an uncertain situation which might be better.”	
		UA3-“Preferring work that has detailed standard operating procedures spelled out.”	
		UA4-“Believing that fear of ambiguous and unfamiliar situations is normal.”	
	4-Femininity vs. masculinity	FVM1-“Preferring to have a man in high level position rather than a woman.”	Al Omoush et al. (2012)
		FVM2-“Believing that in some jobs, a man can always do better than a woman.”	
		FVM3-“Believing that while men solve problems with logical analysis, women solve problems with intuition.”	
		FVM4-“The importance of having a job, which get an opportunity for high earnings”	
	5-Short-term vs. long-term orientation	SVL1-“Respecting and committing to familiar and social norms.”	Al Omoush et al. (2012)
		SVL2-“Respecting social obligations regardless of cost”	
		SVL3-“Believing in absolutes about good and evil”	
		SVL4-“Believing that the wise person lives for today and lets tomorrow take care of itself”	
6-Restraint vs. indulgence	IVR1-“Believing that emotions should not be shown.”	Al Omoush et al. (2012)	
	IVR2-“Waiting for the right time to do something.”		
	IVR3-“Society enabling its members to be enjoying their lives, having fun, and leisure time.”		
	IVR4-“Maintaining rigid codes of beliefs and behaviors, promising certainty and protecting conformity”		
Online communication skills	OCS1-“I wait for others to finish their words before I take the turn to speak.”	Al Omoush et al. (2012)	
	OCS2-“I can express my thoughts clearly whenever I want.”		
	OCS3-“I can understand the emotions underlying what others are saying.		
	OCS4-“I can easily start a conversation with other people.”		

TABLE 2 Construct reliability, and validity.

Variable	Items	References	Outer Loadings	Cronbach's Alpha	AVE
Power distance (PD)	PD1	Al Omoush et al. (2012)	0.81	0.84	0.62
	PD2		0.77		
	PD3		0.83		
	PD4		0.75		
Collectivism vs. individualism (CVI)	CVI1	Al Omoush et al. (2012)	0.85	0.88	0.66
	CVI2		0.82		
	CVI3		0.80		
	CVI4		0.78		
Uncertainty avoidance (UA)	UA1	Al Omoush et al. (2012)	0.84	0.86	0.64
	UA2		0.81		
	UA3		0.79		
	UA4		0.77		
Femininity vs. masculinity (FVM)	FVM1	Al Omoush et al. (2012)	0.73	0.80	0.58
	FVM2		0.76		
	FVM3		0.79		
	FVM4		0.75		
Short-term vs. long-term orientation (SVL)	SVL1	Al Omoush et al. (2012)	0.82	0.85	0.63
	SVL2		0.80		
	SVL3		0.77		
	SVL4		0.81		
Restraint vs. indulgence (IVR)	IVR1	Al Omoush et al. (2012)	0.78	0.83	0.60
	IVR2		0.81		
	IVR3		0.79		
	IVR4		0.74		
Online communication skills (OCS)	OCS1	Abdallah et al. (2024)	0.82	0.87	0.65
	OCS2		0.84		
	OCS3		0.80		
	OCS4		0.81		

TABLE 3 Heterotrait–Monotrait ratio (HTMT) matrix.

Construct	PD	CVI	UA	FVM	LTO	IVR	OCS
PD							
CVI	0.642						
UA	0.518	0.557					
FVM	0.433	0.498	0.512				
LTO	0.472	0.523	0.536	0.521			
IVR	0.389	0.471	0.495	0.463	0.506		
OCS	0.456	0.592	0.564	0.537	0.574	0.558	

Bold values indicate Heterotrait–Monotrait ratio (HTMT) matrix.

- 29 years: 88 (14.7%)
- 32 years: 77 (12.8%)
- 40 years: 81 (13.5%)
- 40+: (14.0%)

→ Most participants are young adults (18–26), aligning with the target group, but there is also strong representation from older age brackets.

- Gender:
 - Male: 313 (52.2%)
 - Female: 287 (47.8%)
 → Gender balance, in favour of males.
- Year of Study:
 - First year: 147 (24.5%)
 - Second year: 143 (23.8%)

- Third year: 143 (23.8%)
- Fourth year or above: 167 (27.8%)

→ All years are well represented, with a slight majority in advanced years (see Table 4).

3.3.2 Interpretation

- The highest mean scores were obtained by Collectivism ($M = 3.95$, $SD = 0.68$), indicating a strong cultural tendency for group values in Jordan.
- Uncertainty avoidance ($M = 3.76$) and Long-Term Orientation ($M = 3.70$) equally had high mean scores, showing that structured, ongoing interaction is central to the communication practices of Jordanian students.
- Power distance ($M = 3.42$) had the lowest mean score, but still above average, in that while respect for authority is still of importance, the Internet provides for a more egalitarian environment for interaction.
- Online communication skills ($M = 3.88$, $SD = 0.66$) had high mean scores, indicating that the youth in Jordan have developed extensive digital skills keeping very well in line with their cultural identity.

3.4 Results and discussion

Table 5 demonstrates the comparative strength of each Hofstede cultural value dimension in predicting online communication skills (OCS) of Jordanian participants. All six dimensions had a significant and positive effect; however, the strength of their influence differed. The results showed that Collectivism ($\beta = 0.33$, $T = 14.43$, $p \leq 0.001$) had the strongest effect on OCS. This emphasized the importance of group harmony, loyalty to the group and group collaboration in Jordanian culture where people often emphasized group goals at the expense of their expression of individual self. Such values will help develop online communication which depends upon cooperation and group interaction.

Uncertainty avoidance ($\beta = 0.26$, $T = 9.94$, $p \leq 0.001$) was the second strongest predictor.

This indicates the extent to which Jordanian preference for structure, rules and range in communication added to their digital success, since structured communication in the online world helps to alleviate ambiguity and adds to the confidence of individuals in expressing their ideas.

Long-Term Orientation ($\beta = 0.24$, $T = 8.89$, $p \leq 0.001$) also manifested a rather considerable influence, emphasizing the role of persistence and future planning in maintaining consistency in communication. Since Jordanians appreciate education and any kind of goal-oriented engagement, whether students or professionals, they tend to manifest an approach to online communication that is conscious and sustained; thus, their digital skills are constantly enhanced.

Femininity ($\beta = 0.21$, $T = 6.56$, $p \leq 0.001$) and Indulgence ($\beta = 0.22$, $T = 7.86$, $p \leq 0.001$) exerted moderate effects. Femininity emphasizes empathy, cooperation, and relationship building skills which are more valuable in the online context since there is less non-verbal communication. Indulgence illustrates cultural change toward freedom of emotional expression and informality in digital communication—but it is heavily weighed against Jordan’s traditional norms of restraint.

Finally, Power Distance ($\beta = 0.18$, $T = 5.29$, $p \leq 0.001$), while the weakest predictor, was still significantly positive, and All confidence intervals did not cross zero, indicating stable and significant effects. This shows that respect for authority and hierarchical structures, though limiting free expression in face-to-face contexts, can still add up positively in online communication when the digital environment is well structured. In such a setting, where the roles are clearly defined, students and professionals feel more comfortable participating.

The results of this study demonstrate that all six Hofstede cultural dimensions—Power distance, uncertainty avoidance, femininity, long-term orientation and indulgence tested had significant positive effects on online communication skills in Jordan. The model accounts for 93% of explained variance in online communication skills thereby attesting to its very high explanatory power. While all relationships are statistically significant, some dimensions exert more influence than others (see Table 6).

Power Distance revealed the least significant effect, but still a positive influence, upon online communication skills ($\beta = 0.18$, $T = 5.21$, $p \leq 0.001$). That is to say that Jordanians do appreciate hierarchy and authority, yet the online environment provides more egalitarian spaces in which participants are allowed to interact with greater freedom. These findings are consistent with Eden et al. (2024a, 2024b) who reported that high Power Distance cultures may serve to limit open feedback to students in traditional classrooms, but structured online platforms limit anxiety and promote greater student participation. In the same vein, Pham (2019) indicated that those in high PD situations may communicate more effectively if the authority relationships are clearly defined, a condition that digital learning environments can easily provide.

TABLE 4 Descriptive statistics of constructs.

Construct	Mean	Standard deviation	Interpretation
Power distance (PD)	3.42	0.71	Moderate respect for authority in online settings
Uncertainty avoidance (UA)	3.76	0.65	Preference for structured and clear communication
Collectivism (CVI)	3.95	0.68	Strong emphasis on group harmony and collaboration
Femininity (FEM)	3.61	0.72	Emphasis on empathy, cooperation, and support
Long-term orientation (LTO)	3.70	0.69	Goal-oriented and future-focused communication
Indulgence (IVR)	3.55	0.74	Balance between openness and traditional restraint
Online communication skills (OCS)	3.88	0.66	High ability to express, interpret, and interact online

TABLE 5 Descriptive statistics of constructs.

Cultural dimension	Strength of effect on online communication skills	Notes
Collectivism (CVI)	Strongest ($\beta = 0.33, T = 14.43, p \leq 0.001$)	Collaboration and group harmony are highly valued in Jordan; this dimension had the largest impact on OCS.
Uncertainty avoidance (UA)	Strong ($\beta = 0.26, T = 9.94, p \leq 0.001$)	Structured communication enhances clarity and precision; a key cultural trait in Jordan.
Long-term orientation (LTO)	Moderate–Strong ($\beta = 0.24, T = 8.89, p \leq 0.001$)	Encourages consistent and goal-oriented interaction in educational and professional settings.
Femininity (FEM)	Moderate ($\beta = 0.21, T = 6.56, p \leq 0.001$)	Supports empathy, care, and relationship-building in online contexts.
Indulgence (IVR)	Moderate ($\beta = 0.22, T = 7.86, p \leq 0.001$)	Digital openness balanced with traditional restraint shapes communication style.
Power distance (PD)	Weakest (but positive) ($\beta = 0.18, T = 5.29, p \leq 0.001$)	Respect for authority restricts open expression, but structured settings improve participation and outcomes.

TABLE 6 R^2 values for the dependent variable.

Dependent variable	R^2	Adjusted R^2
Online communication skills (OCS)	0.93	0.93

Uncertainty Avoidance exhibited a substantial effect ($\beta = 0.26, T = 9.87, p \leq 0.001$), which indicates that Jordanians’ preferences for rules, clarity, and structured communication enhanced their digital competence. This finding agrees with Sohaib and Kang (2016) who indicated that users from high Uncertainty Avoidance cultures preferred formal and rules-based interaction and with Akintayo et al. (2024) who indicated that structured online platforms produced inclusion and clarity in such cultural contexts. From these findings one can deem that Jordanian learners are best assisted when the online environment provided clear rules and predictable patterns, thus fostering the development of effective communication skills.

Feminine values ($\beta = 0.21, T = 6.42, p \leq 0.001$) were also important indicators of online interactive communication in Jordan (see Table 7) emphasizing the importance of empathy, cooperativeness, and support (see Eden et al., 2024a, 2024b; Chase et al., 2002), which stated feminine-related values increase the inclusivity and trustworthiness of space in the online environment. In the Jordanian context, the coexistence of achievement-oriented and relationship-oriented values allows the tendency to emphasize relational harmony to work positively with digital collaboration.

Long-Term Orientation revealed a moderate to strong effect ($\beta = 0.24, T = 8.73, p \leq 0.001$) implying that perseverance, future planning, and consistency are supposed to be keyed for effective online interaction in Jordan. It is consistent with Ding’s (2003) findings that, in long-term oriented cultures, individuals tend to compose online messages more deliberately and carefully. This supports the value of trust and strategic communication in the Arab context as proposed by Al-Ma’aitah et al. (2024). Jordanian youth seem to aptly balance traditional cultural requirements with modern digital practices. They reflect it through a strategic and regularized pattern of online communication. One of the cultural dimensions which has an impact on such a balance between indulgence and restraint is the dimension of Indulgence. Results

indicated a significant positive effect ($\beta = 0.22, T = 7.95, p \leq 0.001$) thus highlighting hybridity in Jordanian culture where both indulgence and restraint exist.

Traditional values emphasize modesty and restraint in self-expression on the one hand, and the increased influence of electronic communication has encouraged young people to express themselves more openly, casually and freely in terms of feelings and emotional expression. These results agree with those of Eden et al. (2024a, 2024b) who pointed out that indulgent cultures communicate more expressively in digital media, as well as those of Alam and Mohanty (2023a, 2023b), who found that restraint still shapes the tone of communication in Arab societies. All these ideas account for the phenomenon of Jordanian youth communicating in an expressive manner by adopting a more relaxed way of expressing themselves in digital communication without departing from adequate respect or cultural propriety.

While Collectivism was not an explicit predictor, it turned out to be the strongest indicator of online communication skills ($\beta = 0.33, T = 14.34, p \leq 0.001$). This indicates the significance attached to group harmony, loyalty, and co-operation in Jordanian culture. After Collectivism, Uncertainty Avoidance and Long-Term Orientation were the next strongest, while Femininity and Indulgent showed effects of medium strength. Power Distance, although the weakest predictor, was nevertheless significant. This ranking indicates the cultural profile of Jordan as a society which values collaboration, structured interaction, and long-range planning but also must negotiate its way between traditional hierarchical customs and the more egalitarian modes of conduct of the electronic age.

These results confirm the effect of Hofstede’s cultural dimensions on online communication competence in Jordan, thereby extending international findings that digital settings mirror and modify traditional cultural orientations. Evidence has also been provided that collectivism, high uncertainty avoidance, and long-term orientation provide major inputs into Jordanian students’ potency to successfully articulate their thoughts online; femininity and indulgence add more dimensions to the communication process—expressing relationships. Even Power Distance, though weaker, gets a positive shot from clear authority structures and guidance found within online spaces. All these attest to an amalgamation of cultures in online communications in Jordan: very much collectivist and structured at heart but increasingly opening up toward new frontiers of relationship sensitivity and expressive self-presentation enabled by digital spaces.

TABLE 7 : Hypothesis testing results.

Hypothesis	Path	Std. deviation	t-value	p-value	95% BCa CI	Supported
H1	Power Distance (PD) → Online Communication Skills (OCS)	0.02	5.21	≤ 0.001	[0.12, 0.23]	Yes
H2	Uncertainty Avoidance (UA) → OCS	0.01	9.87	≤ 0.001	[0.21, 0.30]	Yes
H3	Collectivism (CVI) → OCS	0.02	14.34	≤ 0.001	[0.28, 0.37]	Yes
H4	Femininity (FEM) → OCS	0.02	6.42	≤ 0.001	[0.15, 0.26]	Yes
H5	Long-Term Orientation (LTO) → OCS	0.01	8.73	≤ 0.001	[0.19, 0.29]	Yes
H6	Indulgence (IVR) → OCS	0.02	7.95	≤ 0.001	[0.17, 0.27]	Yes

$p \leq 0.05$ (), $p \leq 0.01$ (), $p \leq 0.001$. All paths are significant at the 0.001 level.

The global model has a 93% explanatory power for Online Communication Skills showing very strong explanatory power.

3.5 Research contribution and future directions

This study is important to the existing literature in its extension of Hofstede’s culture construct into the context of digital communications. This study employed a new estimation methodology using SmartPLS-SEM, to empirically confirm the cultural effects on online communications. This study is one of the very few that has explored cultural influences in Jordan. The major contribution of this paper is establishing which factor acts as the strongest predictor of online communication skills. It records the way values of collectivism continue to assert themselves in digital interaction among university students.

- 2 Teacher training: Teachers should be educated in intercultural digital communication in order to understand how to teach in mixed communication classrooms and invite the participation of those in them.
- 3 Curriculum design: Courses dealing with communication and media literacy should include modules regarding cultural diversity in online interaction within which students learn to be adaptable in international digital settings.
- 4 National policy: The insights offered may be useful to policy-makers charged with responsibility for the design of digital transformation initiatives to ensure that these changes are congruent with cultural values so that taking up technology enhances rather than conflicts with existing cultural norms.

4 Conclusion

This paper analyzed the impact of Hofstede’s cultural dimensions on the skills of online communication among students in universities in Jordan. Results validate the fact that, yes, all six dimensions do significantly impact OCS and throw light on which dimension is the strongest predictor-considering workers working individually or collectivism. Therefore, awareness of placing digital communication behavior under the control of cultural forces, with that culture found to be a collectivist force valuing social harmony and group work, needs emphasis.

6 Limitations of study

This study is subject to several limitations. First, the convenience sample employed limits the generalization of findings to the larger population of college students. Second, the cross-sectional design limits causal interpretation because the results indicate associations but not cause-and-effect relationships. Third, the study was conducted in Jordanian universities, so based on its results, cultural generalizations to other Arab or non-Arab cultures should be made with caution.

5 Policy and practical implications

The findings lead to a variety of recommendations for policymakers, educators and digital learning designers:

- 1 Digital learning design: Educational centers should incorporate cultural responsiveness training into on-line learning environments. The design of Learning Management Systems (LMS) should accommodate indirect modes of communication and design environments that foster cooperation in order to lessen cultural barriers.

7 Future research directions

Further researcher may address these limitations by:

- Utilizing probabilistic sampling techniques, to enhance representativeness.
- Conducting *longitudinal research* to explore how cultural influences on OCS evolve over time.
- Comparing *different national contexts* in the Middle East or globally to test the cultural universality of the model.

- Looking at mediating or moderating variables that may include such concepts as digital literacy, or communication apprehension, for greater insight into the underlying mechanisms.

8 Final remark

- Overall, this study contributes new empirical evidence to the relationship between culture and online communication, emphasizing that competent use of digital communication is not only a technical ability but is also a culturally based skill.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by the Institutional Review Board at Jadara University under protocol number IRB-01-01-2025-X1 dated 12-01-2025. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

IH: Software, Methodology, Writing – review & editing, Funding acquisition, Supervision, Investigation, Writing – original draft, Conceptualization, Resources, Formal analysis, Data curation, Visualization, Project administration, Validation.

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