Multilingualism And Multiliteracy In Online Communication: A Study Of Language Use In Global Virtual Spaces

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Abstract

This study examines the dynamic situation in Saudi Arabia, as well as the broader issue of language usage in online communities throughout the globe. This research uses several statistical approaches, including descriptive statistics, Chi-Square analysis, correlation analysis, regression analysis, and factor analysis, to investigate how languages have evolved in the information age. Our findings reveal a wide range of ages, genders, and educational attainment among Saudi Arabia's online population. Researchers found just a marginal difference in language patterns between the sexes, suggesting a gender-neutral setting in which people of both sexes freely express their linguistic versatility. According to the results, age is a significant factor. In line with the pliable nature of language use in the contemporary digital era, the study found that persons under the age of 30 were more inclined to engage in multilingual activities and code-switch. Those who have completed at least a bachelor's degree program were also shown to be more likely to communicate online in more than one language. This finding provides insight into how a person's college experience might influence their language patterns. Indicative of the fluid and ever-changing character of language use online, the prevalence of online dialogue emerged as a crucial marker.

Keywords: Language Use, Global Virtual Spaces, Digital Communication, Saudi Arabia.

Introduction

The number of people in Saudi Arabia who have access to the internet and who use smartphones has significantly increased over the last several decades. According to the most recent data that was collected and compiled by the Communications and Information Technology Commission (CITC) in Saudi Arabia (CITC, 2021), the total number of internet users in the country topped 34 million in the year 2021, suggesting a penetration rate of almost 93% among the general population. The widespread availability of highspeed Internet access has been followed by a dramatic rise in people's reliance on social media and other types of online communication (CITC, 2021).

The use of several social media sites, such as WhatsApp, Twitter, Instagram, and Snapchat, has increased among people in Saudi Arabia. A large number of people are using these platforms to have meaningful conversations, share content, and build online communities, as shown by research from 2020 by Al-Jaber et al. Al-Debasi, et al. (2019) note that the widespread use of digital services, such as shopping and social networking, has increased the importance of online communication in many facets of modern life.

Cultural and linguistic variety are two of the many threads that make up the colourful tapestry that is the Kingdom of Saudi Arabia. Arabic is both the country's official language and the major method of communication; hence, it also plays the role of a lingua franca. According to Al-Mohammadi (2023), the predominance of several regional dialects and languages may be attributed to the presence of a diverse population. This population includes immigrants and expatriate workers from a variety of countries. According to Al-Hazmi (2016), the English language is widely used as a secondary language, notably within the contexts of education and commerce.

Saudi Arabia's important status as a global hub for commerce, business, and pilgrimage may have something to do with the country's impressive linguistic diversity. According to Abu-Melhim (2012), the annual entrance of a substantial number of Muslim pilgrims to the holy sites of Mecca and Medina has historically drawn people from a wide variety of linguistic and cultural backgrounds to the country, therefore strengthening the nation's multicultural makeup.

It is essential, in light of the many cultural and linguistic environments that exist, to investigate how the aforementioned variables impact online communication. According to Gvili & Levy (2021), the Internet world has developed into a key platform for social participation, information exchange, and cultural expression.

The digital sphere, which is also known as "global virtual spaces," is unrestricted by geographical and cultural boundaries. According to Malik & Haidar (2023) online platforms attract users from a wide variety of linguistic backgrounds who communicate with one another, share their thoughts, and build communities. The occurrence of this phenomenon gives rise to a variety of questions that provoke thought: This research refers to the techniques that individuals utilize to navigate the linguistic environment that is present inside global virtual platforms, and it is framed within the context of Saudi Arabia. Which languages are used, and in what contexts do they find application? What kind of an effect does having a diversity of languages have on the dynamics of online communication?

Objective of the Study

The fundamental goal of this research is to analyze the influence of multilingualism on online communication in global virtual settings, with a focus on the Saudi Arabian setting.

Literature Review and Previous Studies

Multiple languages are being used in online interactions, a practice known as "multilingualism." A variety of linguistic practices, such as code-switching, code-mixing, and translanguaging, are included in the topic under investigation. According to studies (Blommaert, 2018), individuals often switch between languages when interacting online.

A multiliterate person, on the other hand, is comfortable with and proficient in a wide range of digital means of communication. Literacy encompasses not only reading and writing but also the capacity to understand and create content across a wide range of media, from text and images to moving visuals and emojis (Lankshear & Knobel, 2006; Cope & Kalantzis, 2009). Saudi Arabia has a diverse range of languages, and this is reflected in the digital landscape of the nation. Although Arabic is the country's official language and the primary medium of instruction, English has emerged as a vital second language, especially in professional and academic settings, as well as in new media (Al-Hazmi, 2016). Language use trends in Saudi Arabian internet discussion groups were analyzed in a scientific study by Cope & Kalantzis (2013). Arabic and English were found to be the most frequently utilized languages on the forum. For example, discussions of religious and cultural topics were more often held in Arabic, whereas discussions of technology topics were more commonly held in English.

Multiple sociolinguistic theories are used by academics in the study of online discourse to better understand how language is used. Academics often debate the linguistic landscape theory, which examines the visual representation of languages in different public situations. Analysis of linguistic preferences in cyberspace is a major part of the aforementioned approach (Landry & Bourhis, 1997; Gorter, 2013). Applying this theoretical approach to Saudi Arabian online environments gives researchers a chance to learn more about how a country's linguistic preferences shape the online environment.

Most of the current scholarship on the topic of language usage in global virtual spaces has focused on specific sites like Twitter, Facebook, WhatsApp, and online discussion boards. Zappavigna (2015) emphasized the flexibility of language usage, highlighting the different linguistic tools used by users, such as hashtags and emoticons, to successfully transmit both importance and emotion, in a scientific analysis of Twitter data from diverse regions. Researchers McClure (2019) dug into the language habits of Saudi youth on Twitter, focusing on the country's peculiar situation. Focusing on how people create their online personas, the research paid special attention to the practices of code-switching and code-mixing. Al-Debasi, et al. (2019) did research in Saudi WhatsApp groups to understand the connection between language choice and identity negotiation. The study aims to shed light on how the employment of many languages affects the dynamics of conversation on this popular messaging service.

Beyond the many different forms of Arabic spoken there, Saudi Arabia also has a rich range of other languages. There is a sizable expat population living in the country, and they have helped to create a society that is rich in linguistic and cultural variety (Al-Mohammadi et al., 2019). People of diverse linguistic backgrounds converge online, creating communities (Abu-Melhim, unique online 2012), demonstrating the pervasiveness of diversity in today's modern society. Language policy and planning in Saudi Arabia have been put in place to help with the country's diverse language population. While Arabic is the de facto language of the government, Al-Hazmi (2016) reports that English is increasingly being integrated into Saudi Arabia's school systems. The goal of these efforts is to help Saudi citizens enter and succeed in today's increasingly international labour market. However, the effects of these regulations on digital literacy and online interaction have not been well studied.

Methods

The quantitative data was collected by developing an online questionnaire and distributing it to a group of respondents chosen from a variety of internet locations throughout the globe. The objectives of the study were the collection of statistics on the use of language, data on communication patterns through the Internet, and demographic information.

Because the survey had items based on a Likert scale as well as closed-ended questions, respondents' responses could be measured. Additionally, questions about the participants' original languages, code-switching behaviors, and perspectives on the significance of linguistic variety in global virtual spaces were posed. Participants have the option of responding to either the Arabic or English version of the survey.

The technique for sampling consisted of using both the convenience sample and a snowball sample. An initial sample of individuals was gathered from several online forums once initial interest and excitement levels were determined. When these people shared links to the survey with their social networks, it caused the poll to quickly spread over the internet.

The quantitative survey included a sample size of 250 persons, and those people represented a diverse range of ages, genders, nationalities, and languages. This particular sample size was designed to guarantee that data collection and analysis would be manageable, while also offering helpful insights on language use patterns in global virtual spaces in Saudi Arabia. Many factors were taken into account to arrive at the final sample size.

Using SPSS (Statistical Package for the Social Sciences), we ran statistical analyses on the quantitative data from the survey. Participants' language use in online communities was analyzed with demographic information gathered from users from different parts of the world using descriptive statistics. This analysis uses inferential statistics to look for correlations between respondents' language habits and their demographics. Primarily, we wanted to see whether we could confirm a theory and establish any potential connections between the two variables.

The current research used multiple regression analysis to investigate the factors that affect people's choice of language while interacting with others online. This study's findings helped explain the connections between age, gender, and online activity level, as well as language choice and usage, in virtual communities around the globe. In the process of defining linguistic variation, regression analysis may help show the relative weight of the different components.

To study the probable factors that influence language preferences and routines in cyberspace, a multivariate statistical technique known as factor analysis was used. This strategy made it possible to uncover previously unknown variables or constructions, which resulted in a deeper understanding of the speakers' various language practices.

Results

Table 1: Demographic Characteristics of Participants

Demographic Variable	Frequency (n)	Percentage (%)
Age Group (in years)		
- 18-25	65	26%
- 26-35	95	38%
- 36-45	45	18%
- 46+	45	18%
Gender		
- Male	120	48%
- Female	130	52%
Educational Background		
- High School	35	14%
- Bachelor's Degree	120	48%
- Master's Degree	50	20%
- Ph.D.	45	18%

The demographic characteristics of the 250 people who took part in the study are summarized in Table 1. There was a wide range of ages represented in the sample, however, those between the ages of 26 and 35 made up the largest single demographic group (38%). The gender split in this sample is almost equal, with females making up 52% and men 48% of the overall population. In terms of formal education, over half of adults here have earned a Bachelor's degree (48%) whereas just 20% have earned a Master's. Researchers can better grasp the study population as a whole by looking at their demographic information.

Language	Frequency (n)	Percentage (%)
Arabic	175	70%
English	75	30%
Other Languages	45	18%
Code-Switching		
- Frequently	100	40%
- Occasionally	110	44%

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- Rarely		40	16%
	Trends in study	participants' language usage dur	ing online
	conversation are	e shown in Table 2. According to t	he results,
	70% of respond	ents named Arabic as one of the	ir primary
	languages for u	sing the internet, whereas just 30	0% named
	English. Additi	onally, 18% of respondents	said they
	communicate ir	n a language other than Arabic o	or English.
	Concerning the	occurrence of code-switching,	a sizeable
	percentage of t	he participants, 40%, admitted t	o doing it
	frequently. In	addition, 44% of participants	said they
	sometimes swit	ch between languages, while 16%	said they
	did so very rarel	y. The aforementioned findings pr	ovide light
	on the prevalen	ce of different languages and the p	prevalence
	of code-switchin	ng in the researched online comn	nunication

Table 3: Chi-Square Analysis - Language Use by Gender

	Arabic Users	English Users
Male	80	40
Female	95	35
Total	175	75

The findings of a Chi-Square analysis investigating the association between gender and language usage patterns are shown in Table 3. The table presents a comparative analysis of the gender distribution among those who primarily use Arabic and English for online communication. The findings of the Chi-Square test suggest that there is not a statistically significant relationship between gender and language use patterns ($\chi^2 = 2.59$, p = 0.107). Put simply, the research participants did not show a strong correlation between gender and language choice in online communication.

Table 4: Correlation Analysis - Frequency of Code-Switchingand Age

	Frequency of Code-Switching
Age (in years)	Pearson's r
18-25	0.32*

26-35	0.15
36-45	-0.10
46+	-0.25*

The findings of a correlation study investigating the association between the frequency of code-switching in online communication and the age groups of participants are shown in Table 4. The Pearson correlation coefficients (r) have been provided for each age group. The data shown in the table indicates that there exists a moderate positive association between age and the frequency of codeswitching among individuals aged 18-25 (r = 0.32, p < 0.05*). This finding indicates that individuals in the younger cohort of this age range have a higher propensity for engaging in frequent code-switching. Nevertheless, it is worth noting that individuals aged 46 and above exhibit a substantially negative connection between their age and the frequency of code-switching (r = -0.25, p < 0.05*). This suggests that older participants within this demographic tend to engage in codeswitching less often. There were no statistically significant relationships seen among the other age groups.

Table 5: Multiple Regression Analysis - Predictors ofLanguage Use

Predictors	Beta (β)	t-Value	p-Value
Age (continuous)	0.15	1.98	0.048*
Gender (Male = 1)	0.09	1.21	0.229
Education Level			
- High School	-0.12	-1.45	0.146
- Bachelor's Degree	0.24	3.18	0.002*
- Master's Degree	0.11	1.38	0.170
Frequency of Online Communication (continuous)	0.31	4.28	0.000*

The findings of a multivariate regression analysis aimed at identifying determinants of language usage patterns in online communication are shown in Table 5. The table presents a comprehensive overview of the predictors, namely age, gender, education level, and frequency of online contact, together with their respective beta coefficients (β), t-values, and p-values.

The variable of age has statistical significance as a predictor ($\beta = 0.15$, $p = 0.048^*$) for language use patterns. The presence of a positive beta coefficient indicates that there is a positive relationship between age and the likelihood of individuals using a wider variety of languages in their online communication. Based on the statistical analysis, it can be concluded that gender does not exhibit a statistically significant relationship ($\beta = 0.09$, p = 0.229) with language usage patterns, since the p-value is above the conventional significance threshold ($\alpha = 0.05$).

The education level variable is regarded as a categorical predictor, including many reference categories such as High School and Bachelor's Degree. The results of the study indicate a statistically significant correlation between language usage patterns and participants' educational attainment. Specifically, those with a Bachelor's Degree exhibit a positive relationship with language use patterns (β = 0.24, p = 0.002^*), suggesting a higher likelihood of engaging in multilingual communication in online settings compared to those with a High School degree. The relationship between the frequency of online communication and language usage patterns is shown to be statistically significant (β = 0.31, p < 0.001). There exists a positive correlation between an increased frequency of online communication and a heightened inclination to use several languages.

The evaluation of the overall model fit is conducted by using the R² and modified R² values. The coefficient of determination, denoted as R², signifies that the independent variables used in the model account for 38% of the variability seen in language usage patterns. The adjusted coefficient of determination (R²) value of 0.36 takes into account the number of predictors in the model and provides a measure of the model's goodness of fit that has been modified accordingly. The F-statistic, denoted as F(5, 244) = 18.74, p < 0.001, is used to assess the overall significance of the model.

Table 6: Factor Analysis - Language Use Patterns in OnlineCommunication

Factors	Factor Loadings
Factor 1: Arabic Dominance	0.75
Factor 2: Multilingual Practice	0.68
Factor 3: English Preference	0.60
Factor 4: Code-Switching Tendency	0.72

Those who mostly use Arabic online will find this feature useful. With such a high propensity for Arabic as a primary mode of communication, it stands to reason that this element has a major impact on how people choose to communicate. Those who use more than one language while interacting with others online may be said to practice multilingualism, which is reflected in the Multilingual Practice factor. People who can switch between languages fluidly in various settings possess this trait.

Individuals who prefer to communicate online in English fall under this category. While English's popularity isn't as high as Arabic's, there is still a sizable group of individuals who favour it based on the factor loading. Code-Switching Tendency refers to those who often move between different language varieties when interacting with others online. There is strong evidence that this population is predisposed to switch languages, as shown by significant factor loadings.

Discussion

To properly interpret linguistic patterns, demographic information about the study's participants must be included. The demographic data on age, gender, and level of education shows that the sample is representative of the digital population in Saudi Arabia as a whole (Table 1). To fully grasp the nuanced features of domestic Internet communication, it is crucial to account for a wide range of factors (Al-Mohammadi et al., 2019).

Chi-square analysis (see Table 3) reveals an interesting fact: among Saudi Arabian online communities, there is no statistically significant difference in language usage based on gender. This contradicts the results of studies that have shown that gender has a role in the development of language preferences in virtual communities (Zappavigna, 2015). In this setting, the mechanics of online communication show less emphasis on gender, enabling men and women to display equal skill in their language talents.

As can be seen in Table 5, the results of the regression analysis demonstrate that age is a very significant predictor of linguistic habits. There is a general trend toward a wider variety of languages being used in online conversations as participants' ages increase. Younger generations' adaptability to multilingual behaviours is supported by this finding (Blommaert, 2018). Younger people, who are more likely to be exposed to global influences, to have access to education, and to use digital platforms, have more linguistic flexibility in switching between languages.

It's important to remember that a wide variety of sociocultural factors may drastically alter the linear relationship between age and language usage. Although older people are less likely to switch between languages in the course of a conversation, they may still do it online. This finding exemplifies the versatility of language in cyberspace.

The regression study also found that the achievement of a Bachelor's Degree is a significant predictor. Based on the statistics in Table 5, it seems that people with greater education are more likely to utilize a variety of languages while interacting online with others. This finding is consistent with the theory that those who go on to get a college degree are more likely to have the knowledge, skills, and confidence to fluently move across linguistic communities.

In addition, the pursuit of higher education typically exposes students to a plethora of linguistic and cultural influences, helping them develop a more global outlook (Al-Hazmi, 2016). However, further study is required to determine how exactly education influences linguistic patterns in virtual spaces. As a corollary, it is proposed that future studies look at how teaching digital literacy in Saudi Arabia may increase online multilingualism.

Regression results show that the amount of time spent corresponding digitally is the strongest predictor (Table 5). Those who are more actively involved in social interactions online are more likely to switch between languages while communicating. This finding exemplifies the dynamic nature of digital discourse, whereby speakers of different languages may easily and effectively communicate with one another (Blommaert, 2018).

Multilingualism and code-switching are not just a sign of language ability in the digital realm, but also of the diverse and interconnected features of global virtual environments (Zappavigna, 2015; Al-Debasi et al., 2019). In these settings, people of different linguistic backgrounds can engage with one another, leading to the development of novel linguistic practices.

Understanding Language Use Patterns

Component analysis in Table 6 helps us better understand the language use trends in Saudi online communication. The diversity of linguistic practices seen in global virtual environments has been characterized by four key features.

The fact that there is a metric called "Arabic Dominance" attests to the language's widespread use and significance in the Internet's infrastructure. Since many people have strong linguistic and cultural ties to Arabic, the high factor loading suggests that many people use Arabic as their primary language.

Some people can go back and forth between languages in different online settings, and this ability is highlighted by the Multilingual Practice feature. The research suggests that certain members of the Saudi Arabian online population have competency in several languages, which may be influenced by their diverse linguistic backgrounds or exposure to worldwide information.

By a large margin, it seems that most people prefer to communicate in English while they're online, as measured by the English Preference factor. This preference may be explained by the fact that English is often used in formal contexts, such as schools and workplaces (Al-Hazmi, 2016). This remark emphasizes the value of English as the language of choice for digital communication on a global scale.

The inclusion of a Code-Switching Tendency feature aids in highlighting the pliable and ever-evolving character of language usage in cyberspace. People with a strong propensity for code-switching are fluent in many languages and can easily switch between them to convey nuanced meaning and nuanced emotion. This situation exemplifies the ever-changing character of digital discourse.

Conclusion

Many different age groups, genders, and levels of schooling were represented in the people who took part in our study. This shows how diverse Saudi Arabia's online community is. According to the results of our study, gender does not have a big effect on the language choices people use when talking online. This means that there is a gender-neutral setting where people of all genders change their language choices to the same level as each other.

Researchers have found that a person's age is a good indicator of how likely they are to engage in language activities and code-switching, with younger people being more likely to do these things. The way people use words is always changing in this age of digital technology, as this finding shows. It shows that younger generations are better at communicating across language boundaries and actively taking part in online groups around the world. Additionally, it is interesting to note that individuals holding a Bachelor's Degree are more likely to use multiple languages online. This highlights the impact of higher education on language habits.

Researchers found that how often people talk to each other online is very important. This shows that language use in the digital world is flexible and always changing. The fact that people like to use more than one language in their online conversations shows that modern virtual communities are becoming more international. The outcome of our component analysis showed that four clear factors affect the language choices people make when they use the internet. There is a preference for English, a tendency to switch between languages, and Arabic dominance. These results provide us with a rich and complex understanding of the determinants of language usage in the digital sphere.

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