Research Article

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Impact of gender on frequency of code-switching in Snapchat advertisements

Abstract: Although the phenomenon of code-switching has been a subject of interest to sociolinguists since the 1970s, to date, little research has been conducted on the impact of gender on the frequency of code-switching, especially in oral communication. The current study is an attempt to bridge this gap by comparing code-switching instances in Snapchat advertisements made by 40 Saudi influencers (20 males and 20 females) who roughly belong to the same age group. The first 100 words made by each advertiser were included in the 4,000-word corpus. Although the female sample produced more instances of code-switching ($n = 60$) than males ($n = 42$), the hypothesis that there is a significant difference between males and females in the frequency of code-switching was rejected because the difference was not statistically significant either in the number of instances (p value = 0.116) or in the number of English words (p value = 0.149).

1 Introduction

Code-switching, i.e. the alternation between two or more languages in one setting, as defined by Gumperz (1977), is a widely attested phenomenon in the speech of bilinguals and multilinguals. This linguistic phenomenon can be studied from different perspectives. It can be approached from a variationist account, comparing between two or more sociolinguistic groups. It can also be studied as a tool facilitating communication between bilinguals and as a tool to ease foreign language instruction. In addition, code-switching can be investigated in studies of bilinguals' construction of identity and affiliation with linguistic or ethnic groups. Hence, Wardhaugh and Fuller (2015) report a number of frameworks for studying code-switching, which they prefer to refer to as 'multilingual discourse'. The first framework, designed by Blom and Gumperz (1972), distinguishes between situational (i.e. context-dependent code choice) and metaphorical switching (i.e. switching for affective reasons). The rest of the frameworks intersect with these two types, yet they highlight certain functions of code-switching. For instance, code-switching for accommodation and audience design serves the affective function of constructing an identity similar to that of the interlocutor. In the same vein, the markedness model can be linked to situational switching. In this model, the marked language – also referred to as the matrix language (Myers-Scotton 2016) – is the most commonly used code in a given conversation, while any other language used in that conversation can be classified as the unmarked language. These frameworks are useful when analysing the functions of code-switching (see Section 2). Alternative classifications for code-switching categorise it into types depending on the grammatical structure of the sentence(s) in which it occurs. For example, Muysken (2000) distinguishes between intersentential and intrasentential code-switching (aka code mixing). In the first classification, switching occurs between clauses, while in the second type, switching

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occurs within the clause. Another type of code-switching is tag-switching, which involves the insertion of a tag or interjection from another language in one's speech (Milroy and Muysken 1995).

It should be noted here that the term *code-switching* in this study is used as a generic term covering all the abovementioned three types. The current study follows the aforementioned definition of Gumperz (1977). Hence, any alternation between Arabic (both Standard and Colloquial Arabic) and English in the same advertisement is counted as an instance of code-switching.

Given its high rate of occurrence in the speech of bilinguals, it is not surprising that code-switching has received considerable attention in sociolinguistic research for over four decades and is still the subject of research in areas such as first language acquisition (Kapantzoglou et al. 2021, Kavak and Gül 2020), English as a foreign language (EFL) classrooms (Saou and Hoadjli 2022, Temesgen and Hailu 2022), social media (Kuo et al. 2021, Ting and Yeo 2019, and Sutrisno and Ariesta 2019), and many other domains.

Despite being a well-researched phenomenon, code-switching has received little attention in social media platforms, especially those in which users typically communicate verbally with their audiences, such as Snapchat, TikTok, and YouTube. Indeed, there is a scarcity of research on this mode of communication, although instances of code-switching in social media platforms are more likely to be spontaneous and frequent. Code-switching in verbal communication is more spontaneous than it is in written discourse because speakers are under pressure to complete their utterances without too many pauses. Hence, bilingual speakers often resolve to code-switching as a repair strategy (see Holmes and Stubbe 2004). Code-switching to English has also been reported as being frequent in advertisements for its value as a persuasion tool (see Nerghes 2011). The frequency of code-switching in spontaneous speech on social media platforms might vary depending on sociolinguistic variables. However, very little research has addressed this issue. Hence, the current study considers variations in the frequency of Arabic–English code-switching between male and female Arabic-speaking advertisers on Snapchat. This social media platform was chosen because users are not under the pressure of producing well-rehearsed advertisements, which disappear 24 h after they are posted. Snapchat users are also under the pressure of finishing their utterances within 10 s, making their speech more spontaneous. To address the abovementioned research gap, the current study attempts to answer the following research question:

– Is there a significant difference in the frequency of code-switching between male and female advertisers in spontaneous, orally communicated ads on Snapchat?

2 Literature review

Since it is indeed difficult to encompass all the areas of focus in code-switching studies, the subsections highlight the areas pertinent to the current study, namely, the functions of code-switching (paying more attention to the function under investigation, i.e. persuasion in marketing and advertising), research on code-switching in language variation studies, and in social media and advertising.

2.1 Functions of code-switching

The functions of code-switching have attracted the interest of sociolinguists in recent decades. Some researchers, such as Appel and Muysken (2005), have tried to develop a detailed list of functions, while others, such as Holmes and Stubbe (2004), have classified the many functions into two major categories: transactional and social. These two major categories are quite useful because coming up with a comprehensive list of all the code-switching functions seems to be impossible. Transactional switches mainly serve referential purposes, such as quoting in the original language to ensure that the quotation is accurate, clarification in another code to ensure that the message has been conveyed more precisely to nonfluent speakers, and as a repair strategy in discourse. The other classification of code-switching functions revolves around the affective use of language.

Subcategories of social code-switching include personal, interpersonal, and intergroup. In the first subcategory, the speaker switches between languages to construct a social identity. In interpersonal code-switching, speakers switch codes to mark solidarity with one another. This type of switching is common among members of the same linguistic, ethnic, or religious group (Holmes and Wilson 2022). For instance, cultural and religious greetings can be used among members of the same social group to mark membership in that group. Hence, even non-Arabic-speaking Muslims are expected to greet one another in the Arabic religious greeting *salam* 'peace' and then switch to the matrix language. The same also applies to other Arabic terms showing solidarity, such as *akhi* 'brother' and *jazakallah* 'May God reward you'. Code-switching can also be intergroup, in which members who belong to different social and ethnic groups code-switch to remove the social boundaries between them.

Holmes and Stubbe (2004) assert that it is difficult to draw a clear-cut boundary between transactional and affective code-switching, as one instance of code-switching can serve both functions. Code-switching in advertisements is a clear example of how difficult it is to draw a line between affective and transactional switches. An Arabic-speaking advertiser for a tech device, for instance, may switch to English to ensure that the terms used describe the product accurately. The same code-switching instance may also intentionally serve the purpose of showing expertise in technology. Nerghes (2011) even suggests that code-switching to English is, per se, an effective persuasion technique, particularly when used along with strong arguments. This is due to the cultural connotations that English carries worldwide (Baumgardner 2006). By the same token, Kuo et al. (2021) and Luna and Peracchio (2005) support the claim that using English in code-switching is effective in commercials, as the consumers sampled in their study have had positive evaluations of products advertised using code-switching between English and minority languages.

There are a number of studies on the functions of code-switching by Arabic speakers, some of which were on data produced in social media platforms, such as Gad (2019) and Eldin (2014), both of which are discussed in more detail below. The functions of code-switching between Arabic and English in mass media, specifically TV, were analysed in Alatawi (2015). Other studies, such as Safi (1992), focused on the functions of code-switching in EFL settings, including identity formation and expressing emotions. Also, refer to Alsalami (2021), Alaslaa (2018), Albirini (2011, 2013), and Eldin (2014) for analyses of the functions of Arabic–English code-switching by native Arabic speakers. However, no previous studies, as far as the researcher is aware, have addressed Arabic–English verbal code-switching in the context of advertising in social media.

2.2 Code-switching in language and gender studies

This study compares the rate of code-switching by Saudi male and female advertisers on Snapchat. Although there are a few studies on code-switching and gender, none of the studies that compared the frequency of code-switching by male versus female speakers has focused on the topic under investigation in the current study (i.e. code-switching in advertisements communicated verbally). For instance, Babou (2021) compared code-switching instances in the speech of a sample of 88 male and female speakers; females produced more Arabic–French code-switching instances than the sampled males. The reason, Babou explains, is that the sampled females tended to construct multiple identities. More instances of Arabic–English code-switching by females in naturally occurring conversations were also reported in Ismail (2015). In another account of code-switching and constructing gender identity, Farida et al. (2018) analysed code-switching in naturally occurring conversations between female students in out-of-class interactions. The sampled female participants frequently used code-switching to construct gender identity, using the *we-code* when referring to issues pertinent to women and the *they-code* when referring to males. Gulzar et al. (2013) included the variation in intersentential code-switching. Their sample of only eight teachers (four males and four females) suggests that females code-switch more frequently than males. However, the findings are not reliable due to the small sample size and outliers in the two groups. Alsalami (2021) showed no significant difference between males and females in terms of the functions of code-switching. It should be noted that Alsalami's study did not rely on naturally occurring data but on a questionnaire distributed to a sample of Arabic speakers. Self-reporting on the functions of code-switching is risky for yielding inaccurate impressionistic responses. Mushtaq (2012)

compared the frequency of code-switching and code-mixing in instant messages by Urdu and English speakers. Their study concluded that there were no major differences between the two samples.

Finnis (2014), on the other hand, challenged the assumption that gender is an influential factor in the rate of code-switching. Instead, she believes that gender plays a minor role in terms of the frequency of code-switching, while the discourse type is a more influential factor affecting the code choice of individuals. In her study, males produced more speech and, hence, more instances of code-switching in the discourse of the narration of obscene jokes. The impact of discourse type does not seem to be a strong factor in the current study, given that the speakers are not discussing a topic that restricts their language use or influences their code choice for euphemistic reasons.

2.3 Studies on code-switching in social media and in advertising

Social media is a collective term for websites and applications that allow individuals to provide content in an interactive manner (Heinz 2012). The content can be in the form of written text, audio, audio-visual material, or images and can combine more than a single mode. Since the content is mostly created by individuals, the language used in social media platforms is not carefully edited, rehearsed, or revised, as would be expected in traditional media, such as TV and radio. Instead, users speak and write more casually and, hence, more freely and naturally. It has been found that the same individual may produce more instances of code-switching when speaking in social media than in traditional media (see Karlsen's 2022 comparative study on code-switching in TV and in podcasts by a Norwegian influencer). This makes the linguistic output in social media platforms a great candidate for sociolinguistic studies (Bratcher and Cabosky 2022). Thus, various studies can be found on code-switching in social media. Fiorensera and Handayani (2021) analysed the types of code-switching between English and Indonesian in a podcast. Their analysis revealed that intrasentential code-switching was the most frequent, and the number of tokens in each type was very low (one intersentential, three tags, and five intrasentential code-switching). They did not provide explanations for this low number of instances of code-switching, but it can be speculated that this is due to the speakers expecting their audience to be mostly monolinguals in Indonesian or bilinguals in languages other than English. In another study about code-switching in social media, Alrashed (2021) examined the frequency and functions of code-switching between Arabic and English in technology podcasts. The results suggest that code-switching is infrequent and the English words used in each podcast episode ranged between 4 and15%. The podcasters and their guests used code-switching mainly for discourse-related functions such as repair, contrast, and narration. In a study about code-switching on Instagram, Sutrisno and Ariesta (2019) found that Indonesian social media influencers used code-switching to shape their identity as being well educated. Code-switching between Egyptian Arabic and English was also found to be a tool used by educated individuals to save time and as a facilitative tool when expressing emotions (Gad 2019). Eldin (2014) also supports that code-switching is attested in social media, particularly on Facebook, by Arabic–English bilinguals to serve a range of discourse functions, such as clarification, emphasis, and expressing emotions. Other studies on code-switching in social media platforms are found in Nita and Lilis (2022), Lynn and Scannell (2019), and Ria (2020). However, as far as the researcher is aware, there are no gender-based comparisons on code-switching on Snapchat.

From the review of the aforementioned literature, more variationist research on code-switching in advertisements communicated verbally in social media needs to be conducted to determine whether gender is an influential factor affecting the frequency of code-switching. Therefore, the current study is an attempt to bridge this gap.

3 Methodology

The current study attempts to discover the impact of gender on the frequency of code-switching in Snapchat ads made by Saudi male and female advertisers. As mentioned at the introduction, this study follows

Gumperz's (1977) definition of code-switching. Thus, only switches between Arabic and English in the same advertisement were counted as code-switching tokens. Switching between two Arabic varieties is beyond the focus of the current study. It should also be noted that this study follows Schippers and Versteegh's (1987) approach in distinguishing between code-switching and lexical borrowing, which suggests that words that have entered the Arabic lexicon are considered borrowed words, whether they have been adapted to the phonology and morphology of Arabic or not. Therefore, words that have become part of the Arabic lexicon (e.g. *burgar* 'burger', *warsha* 'workshop', and *kart* 'card') were not counted as code-switched words in the current study. Moreover, proper nouns, place names, and brand names were not counted as code-switching because these words are typically shared across various languages and speakers do not have the freedom to choose between any of the two codes when using them (see Halmari and Regetz 2011, Torres and Potowski 2016). Thus, code-switching in the current study had to meet the following criteria: the two codes are used in the same advertisement, and the English word has to have an Arabic equivalent and is not a borrowed word to Arabic. One potential limitation of this method of distinguishing between code-switching and borrowing is that there are no non-standard Arabic dictionaries. The scholarly efforts to document loanwords in non-standard Arabic are also scarce. Hence, classifying some tokens in the data as loanwords rather than code-switching instances is left for the researcher, who frequently consulted colleagues and friends to verify their classifications.

There are many reasons for selecting advertisements on Snapchat as the subject of research in the current study. First, the advertisements are not made by professionally trained advertisers but by individuals who are not expected to read scripted advertisements or do rehearsals before filming their orally communicated ads. Second, unlike many other social media platforms, such as YouTube, Twitter, and Facebook, content published on Snapchat disappears after 24 h, putting the advertisers on this platform under less pressure in terms of revising and improving the graphics and design of their ads. They instead typically film a product and describe it while they show how it is used or how it is better than other similar products. This lack of attention to what terms to use and how to deliver the content increases the spontaneity of the data included in the study.

Most of the studies reviewed in the literature review section reported a significant difference between males and females in the rate of code-switching (e.g. Babou 2021, Gulzar et al. 2013, Ismail 2015, Kane 2020). Therefore, the current study hypothesises that gender is a sociolinguistic variable that may influence the rate of code-switching in spoken advertisements, and the following hypothesis was formulated:

> H_0 There is no significant difference between males and females in the frequency of code-switching in spoken advertisements on Snapchat.

> H_1 There is a significant difference between males and females in the frequency of code-switching in spoken advertisements on Snapchat.

3.1 Participants

The sampled advertisers have little, if any, training in advertising. However, the large number of followers they have on Snapchat makes them preferable advertisers for local businesses. To examine the impact of gender on the frequency of code-switching, advertisements made by 40 equally distributed Saudi male and female influencers were transcribed, and the instances of Arabic–English code-switching were calculated. The study used a cluster convenience sampling method, where advertisers who met the criteria of frequently advertising on Snapchat and being Saudi nationals living in Saudi Arabia were included in the sample. Cluster convenience sampling was implemented given the very small number of advertisers, making it difficult to use more rigorous sampling methods. To maximise the accuracy of the comparison between the two groups, some Saudi advertisers who reside in English-speaking countries were excluded from the study, as such individuals may not represent the study population. Moreover, the 4,000-word corpus was compiled from advertisements made by 40 advertisers, producing 100 words each. Additionally, only the first 100 words in each

Table 1: Data size

Gender	Males	Females
Participants	20 participants (100 words each)	20 participants (100 words each)
Total no. of words	2,000	2,000

advertisement were included in the analysis. Interjections, such as ah, aha, and oh, were not counted as words. Comparing the participants based on the number of words, rather than minutes of speech, yields a more accurate comparison because not all the participants speak at the same pace. Moreover, advertisers frequently make pauses during the speech while music is played in the background, which would affect the homogeneity of the data if the comparison was based on the length of the advertisement or the duration of speech.

3.2 Data size

The number of words included in the analysis is 4,000 words (2,000 words by the male sample and 2,000 words by the female sample). Each of the 40 sampled advertisers produced 100 words. The reason for choosing to include only 100 words from each advertiser is that Snapchat advertisements are not detailed. Most of the ads included in the analysis lasted for less than 2 min.

The data were transcribed, and the instances of code-switching were annotated. The annotated instances of code-switching in the corpus made by members of both groups were tabulated in two Excel sheets to facilitate processing the data quantitatively. The number of code-switching tokens made by each advertiser and the number of English words they produced were added to the Excel sheet pertinent to their socio-linguistic group. Then, the total code-switching instances and total number of English words produced by each group were calculated. The average of code-switching occurrences and standard deviation in each group were also calculated. Finally, a t-test was run to test whether the difference between the two groups in the frequency of code-switching was significant. Table 1 shows the distribution of the data.

Table 2: Code-switching by male and female advertisers

Male advertisers	CS instances	E words	Female advertisers	CS instances	E words
M1	1	1	F1	1	1
M2	0	0	F2	1	1
M3	5	6	F3	3	3
M4	2	2	F4	6	6
M5	1	1	F5	4	5
M6	4	7	F6	1	1
M7	3	3	F7	0	0
M8	0	0	F8	4	4
M9	4	4	F9	7	8
M10	2	2	F10	8	9
M11	0	0	F11	0	0
M12	3	3	F12	2	2
M13	1	1	F13	1	1
M14	8	10	F14	1	1
M15	2	3	F15	4	4
M16	2	2	F16	3	3
M17	2	2	F17	1	3
M18	0	0	F18	2	2
M19	1	1	F19	2	2
M20	1	1	F20	9	13
Total	**42**	**49**	**20**	**60**	**69**

4 Results

The Saudi Snapchat advertisers included in this study mostly spoke Arabic when advertising products, with few instances of code-switching to English. This is expected for two reasons. First, the intended audience comprises mostly Arabic monolinguals. Second, most advertisers have intermediate-to-low English proficiency. However, code-switching is used by the majority of the sampled advertisers. The data showed that only 6 advertisers, out of the polled 40, did not produce any instances of code-switching in the first 100 words of their advertisements. The rest of the participants had code-switching instances as follows: one instance ($n = 11$), two instances ($n = 8$), three instances ($n = 4$), four instances ($n = 5$), and five to nine ($n = 6$). Table 2 compares the instances of code-switching by male and female advertisers.

Figure 1 provides a visual representation of the data in Table 1.

It can be observed in the aforementioned table that both sampled male and female advertisers produced very few English words (2.45% of the total number of words by males and 3.45% by females). It is also noticed that the mode (i.e. the most frequent number) in the males' dataset is one-word code-switching instance. Only four males (M3, M6, M14, and M15) produced code-switching instances containing more than one word. This was also attested in the data of female advertisers (only five made more than a one-word-long instance of code-switching: F5, F9, F10, F17, and F20). Below are two examples from the data:

1)   M1:
       Yḥiṭun   ʕalayh   **sticker**
       They.put   on.it   sticker
       They put a sticker on it
2)   F3:
       Ana   ṭalabt   **gloves**
       I   ordered   gloves
       I ordered gloves

In these two examples, the advertisers M1 and F3 used the English words *sticker* and *gloves* despite the existence of Arabic words for these items (i.e. *lasiq* and *quffazat*). Section 5 is a detailed discussion of the results in light of the research questions.
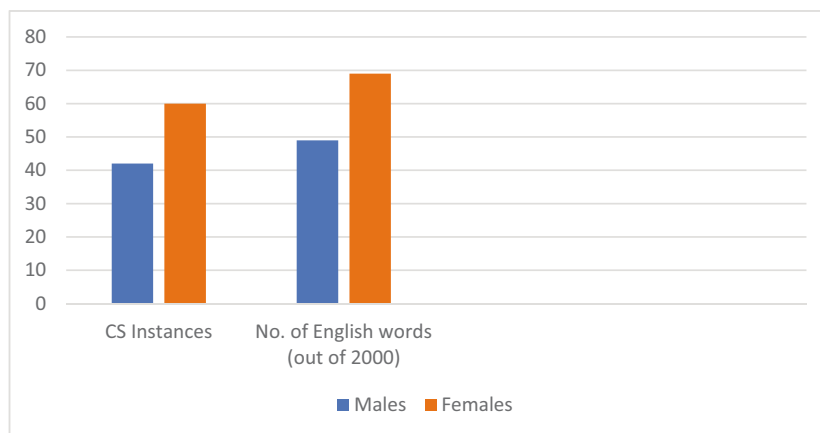

Figure 1: Code-switching instances and number of English words produced by the sample.

5 Discussion

The current study aimed to determine whether there is a significant difference between male and female advertisers in orally communicated advertisements on Snapchat. In this section, the findings are discussed, the data from the two groups are tested for significance, and a comparison of the findings of the current study with other studies in the literature is made.

As detailed in the previous section, a sample of 40 Saudi advertisers (20 males and 20 females) produced an evenly distributed corpus of 4,000 words. The male advertisers produced a total of 42 instances of code-switching in their ads, containing 49 English words. The code-switching instances are slightly higher in the data of females (60, containing 69 English words). Males had an average of 2.1 code-switching instances, while females had an average of 3 code-switching instances. The average number of English words produced by the male advertisers was 2.45, while females had an average of 3.45. Variation from the mean is also slightly higher in the data of females ($\sigma = 2.6$) compared with the variation in the data of males ($\sigma = 1.9$). This indicates that slightly more individual differences can be found in the data of female advertisers.

A t-test significance test reveals that although the female participants produced more instances of code-switching in orally communicated advertisements, the difference between the sampled male and female advertisers is not statistically significant, at a p value of 0.116. Female speakers have also produced more instances of English words. However, the difference between the two groups was not significant, with a p value of 1.49. Hence, the hypothesis that there is a significant difference in the frequency of code-switching between male and female advertisers in spoken advertisements on Snapchat is rejected.

The data of this study showed that females code-switched more often than males. This finding was also reported in some studies reviewed in Section 2 (i.e. Babou 2021, Gulzar et al. 2013, Ismail 2015). The data, though, do not support the hypothesis that gender significantly contributes to the frequency of code-switching, as the difference between the two groups is not statistically significant. Since females in the current study code-switched more than males, the current study provides counterevidence to studies suggesting that males code-switch more than females, such as Huang et al. (2020), in which male speakers code-switch significantly more than female speakers. It should be noted, however, that the Mandarin–English bilinguals in their study were young speakers aged between 5 and 6, unlike the sample in this study and other studies reviewed in Section 2, which comprised adult speakers. The different behaviour in the study of Huang et al. (2020) could be due to belonging to a different age group or to differences between various study populations. Therefore, the data of the current study supported the claim made by Finnis (2014) (see Section 2) who argued against the assumption that gender is a crucial factor in terms of code-switching frequency.

Although, as discussed above, findings similar to the findings of the current study were reported in the literature, the more frequent use of code-switching by bilingual females is quite interesting, given that it seemingly contradicts with the findings of classical works on language gender showing females' preference for more standard forms (e.g. Fischer 1958, Romaine 1984, Trudgill 1983). Indeed, if code-switching is a non-standard linguistic feature, why would female bilinguals produce more instances of it? One potential explanation for females' slightly more frequent Arabic–English code-switching in the current study is that they may consider it a prestigious linguistic feature. Females have, indeed, been reported in the literature to be more sensitive to linguistic prestige (e.g. Gordon 1997, Trudgill 1972, Ness 1999).

6 Conclusion

The study investigated the frequency of Arabic–English code-switching in Snapchat advertisements. Albeit being a social media platform where users typically communicate with their viewers freely and naturally, no previous research, to the best of the researcher's knowledge, has been conducted on code-switching on this platform. Additionally, scarce research has been implemented on the frequency of code-switching among male and female speakers. Hence, the current study attempted to bridge this gap by comparing Arabic–English code-switching instances made by male and female Arabic speakers in Snapchat advertisements. The sample

consisted of 40 male and female speakers distributed evenly. Each group produced a total of 2,000 words (100 words per participant). All the instances produced by both males and females were intrasentential, and the number of words per switch was low. A quantitative analysis of the data revealed that females produced more instances of code-switching and more English words than males. However, the difference between the two groups was not statistically significant, and the theory that there is a gender-based difference was rejected. These findings can have valuable insights for advertisers targeting different social groups. For example, code-choice, the rate of the use, or even avoidance, of code-switching can be tailored to the social group targeted by the advertisement based on their linguistic practices.

Careful measures were taken to ensure the elimination of variables other than gender, such as collecting data from speakers who roughly belong to the same age group and who spoke in similar circumstances (advertised on Snapchat for products to a largely monolingual audience). Additionally, all the data were from the first 100 words in the advertisements of each of the 40 members included in the sample. Additionally, only Snapchat advertisers who reside in Saudi Arabia were included in the sample. However, there were factors that could not be controlled due to the nature of the sample. For instance, the exact age of each participant could not be determined due to the difficulty of communicating with the advertisers directly to gather demographic data. Moreover, the exact English competence level of each participant could not be determined. Although competence in the two languages is of great importance in the phenomenon of code-switching, the data of some participants suggest a contrary impact of competence on the frequency of code-switching. For instance, two of the male participants (M2 and M11) made no code-switches from Arabic to English despite being fluent English speakers. On the other hand, M14, who has little command of the English language, has produced eight instances of code-switching. This calls for a thorough comparative account of the frequency of code-switching by speakers with different competence levels in future research. Additionally, the study recommends investigating the types and functions of code-switches made by advertisers in future research.

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