

Grammatical Gender Assignment in Arabic Technological Term: A Syntactic Analysis of Genitive Constructions (*Idāfah*) in Newspapers Discourse

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Abstract

This research aims to explain the mechanism for determining grammatical gender in technological terms in modern Arabic, emphasizing the relationships among morphological forms, syntactic structures, and semantic contexts. This study is a descriptive, synchronic linguistic study using data on technology terms from the newspapers *An-Nahār* and *Akhbārul Yaum*. Data were collected through observation using free-engaged listening and note-taking techniques and analyzed using intralingual equivalence and top-down distributional methods. During the data collection and analysis process, this study identified 97 translated terms and 229 borrowed terms from the technology field, using the Sketch Engine corpus application. The research results show that the determination of grammatical gender in borrowed technological terms cannot be explained solely by morphological forms, because most of these terms lack clear feminine markers. However, in syntactic usage, they can appear as either masculine or feminine. These findings affirm that the gender of borrowed terms is contextual and primarily determined by the syntactic-semantics relations surrounding them. Specifically, at the syntactic level, gender can be categorized into two forms, namely *ḥukmī* and *ta'wīlī*, both of which are influenced by the presence of the annexation (*idāfah*) construction in phrases or sentences containing technological terms. In this case, annexation (*idāfah*) functions as the main mechanism in gender affirmation, both through the explicitly present *mudāf* and through the omitted *mudāf* that is restored through the process of *ta'wīl*. Thus, this research expands the study of grammatical gender in Arabic by positioning annexation (*idāfah*) not only as a genitive construction but also as an active grammatical device in the integration of modern technological terms. However, the limitation of this study lies in the use of a newspaper corpus that does not fully reflect the full range of contemporary Arabic.

Keywords: *Genitive; Gender Grammatical; Technology; Ta'wīlī; Hukmī*

تحديد الجنس النحوي للمصطلحات التكنولوجية في اللغة العربية: تحليل نحوي للتراكيب الإضافية في خطاب الصحافة

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ملخص

يهدف هذا البحث إلى شرح آلية تحديد الجنس النحوي في المصطلحات التكنولوجية في اللغة العربية الحديثة، مع التركيز على العلاقات بين الصيغ الصرفية والبنى النحوية والسياقات الدلالية. تُعدّ هذه الدراسة وصفية لغوية متزامنة، تستخدم بيانات عن المصطلحات التقنية من صحفيي «النهار» و«أخبار اليوم». جُمعت البيانات من خلال الملاحظة باستخدام تقنيات الاستماع الحرّ وتدوين الملاحظات، وحُللت باستخدام أساليب التكافؤ اللغوي والتوزيع من أعلى إلى أسفل. خلال عملية جمع البيانات وتحليلها، حددت هذه الدراسة ٩٧ مصطلحًا مترجمًا و ٢٢٩ مصطلحًا مُقترضًا من المجال التقني، باستخدام تطبيق «سكيتش إنجن» لتحليل النصوص. تُظهر نتائج البحث أن تحديد الجنس النحوي في المصطلحات التقنية المُقترضة لا يُمكن تفسيره بالصيغ الصرفية وحدها، لأن معظم هذه المصطلحات تفتقر إلى علامات تأنيث واضحة. مع ذلك، في الاستخدام النحوي، يُمكن أن تظهر هذه المصطلحات إما مُذكر أو مُؤنثة. تؤكد هذه النتائج أن جنس المصطلحات المُقترضة سياقي، ويتحدد أساسًا بالعلاقات النحوية والدلالية المحيطة بها. وعلى وجه التحديد، يُمكن تصنيف الجنس النحوي إلى شكلين: الحكي والتأويلي، وكلاهما يتأثر بوجود صيغة الإضافة في العبارات أو الجمل التي تحتوي على مصطلحات تقنية. في هذه الحالة، تعمل الإضافة كآلية رئيسية في تأكيد الجنس، سواء من خلال المضاف الصريح أو من خلال المضاف المحذوف الذي يُستعاد من خلال التأويل. وبذلك، يُوسع هذا البحث نطاق دراسة الجنس النحوي في اللغة العربية، إذ يُصنف الإضافة ليس فقط كصيغة إضافة، بل أيضًا كأداة نحوية فعّالة في دمج المصطلحات التقنية الحديثة. ومع ذلك، فإن محدودية هذه الدراسة تكمن في استخدام مجموعة من الصحف لا تعكس بشكل كامل النطاق الكامل للغة العربية المعاصرة.

الكلمات المفتاحية: الإضافة؛ الجنس النحوي؛ التكنولوجيا؛ التأويلي؛ الحكي

INTRODUCTION

Arabic has a binary grammatical gender system that classifies nouns, adjectives, pronouns, and other elements into two main categories: masculine (*mudzakkar*) and feminine (*mu'annats*). This classification applies not only to living entities with biological sex but also to inanimate objects and abstract concepts. Grammatical gender is a fundamental part of Arabic grammar.¹ Therefore, gender agreement affects the relationships among the components of a sentence, including verbs, adjectives, pronouns, and other syntactic markers.² Gender incongruence can cause ambiguity and even misinterpretation. Mastery of this gender system is important not only for language learners but also for linguistic analysis seeking to explain the dynamics of contemporary Arabic.³ Discussion of grammatical gender becomes increasingly relevant as Arabic develops new vocabulary that does not always originate in the language's internal system, posing new challenges for maintaining grammatical consistency and coherence.⁴

Arabic provides a relatively clear set of morphological markers to help identify grammatical gender. The most well-known marker is *tā' marbūṭah*, which in many cases indicates the feminine form of nouns and adjectives. Additionally, *alif maqṣūrah* and *alif mamdūdah*, as well as *alif*, serve as morphological indicators that point to the feminine category. The presence of these markers makes the determination of gender in most of

¹ Jonathan Owens, 'Abdelkader Fassi Fehri, Constructing Feminine to Mean: Gender, Number, Numeral and Quantifier Extensions in Arabic. Lanham, MD: Lexington Books, 2018. Pp. Xiv + 233.', *Journal of Linguistics*, 55.3 (2019), pp. 671–76, doi:10.1017/S0022226719000215.

² Elena Denisa Dragusin, 'The "Grammar" of Gender. From a Robust Grammatical Category to a Fluid Discourse Construct', *Intertext*, no. 1(65) (July 2025), pp. 26–42, doi:10.54481/intertext.2025.1.03.

³ Fatima A. Alkohani, 'The Problematic Issue of Grammatical Gender in Arabic as a Foreign Language', *Journal of Language and Cultural Education*, 4.1 (2016), pp. 17–28, doi:10.1515/jolace-2016-0002.

⁴ Muslimakhon Azimova, *Evolution of the Arabic Language's Terminological System*, published online 11 August 2025, doi:10.5281/ZENODO.16797216.

the original Arabic vocabulary relatively systematic and easy to recognize,⁵ both by native speakers and learners. Through this mechanism, Arabic demonstrates that morphological forms play an important role in supporting grammatical agreement at the phrase and sentence levels. However, several words are traditionally or semantically classified as feminine but lack the usual feminine markers, and vice versa. This condition shows that morphology is indeed very helpful, but it is not always sufficient to explain all the practices of gender assignment in actual language use.⁶

The development of global technology has prompted the Arabic language to absorb new terms, especially those originating from English.⁷ These terms have entered the realm of modern communication through media, education, the digital industry, and everyday conversations, making their presence increasingly inseparable from contemporary Arabic. In the field of technology, loanwords are adopted with minimal changes, so their original phonological and graphemic forms are still quite apparent.⁸ This accelerates the dissemination of terms and facilitates their use across disciplines, but it also raises complex grammatical issues. Unlike the original Arabic vocabulary, which has morphological gender markers, many borrowed technological terms lack adequate markers to

⁵ Usama Hammad, 'The Feminine in the Structure of the Arabic Language: An Analytical Semantic Study', *IJAS: Indonesian Journal of Arabic Studies*, 4.2 (2022), p. 229, doi:10.24235/ijas.v4i2.10290.

⁶ Mariem Guellouz, 'Gender Marking and the Feminine Imaginary in Arabic', in *Gender, Language and the Periphery: Grammatical and Social Gender from the Margins*, ed. by J. Abbou and F. Baider (John Benjamins Publishing Company, 2016), pp. 47–64, doi:10.1075/pbns.264.03gue.

⁷ Habri Habri, Khafid Roziki, and Abdul Muntaqim Al Anshory, 'Al-Taʿrīb Fī al-Muʿālaḥāt al-Iliktruniyyah Wa al-ʿiḥḥiyyah Bi Mauqiḥ Mawdoo3.Com al-ʿArabiyy', *HuRuf Journal : International Journal of Arabic Applied Linguistic*, 2.1 (2022), p. 96, doi:10.30983/huruf.v2i1.5186.

⁸ Syamsul Hadi, 'Pembentukan Kata Dan Istilah Baru Dalam Bahasa Arab Modern', *Arabiyyat : Jurnal Pendidikan Bahasa Arab Dan Kebahasaaraban*, 4.2 (2017), doi:10.15408/a.v4i2.5801.

be categorized as masculine (*mudzakkar*) or feminine (*mu'annats*).⁹ This results in ambiguity when these terms are used in sentences, especially in their agreement with verbs, adjectives, or pronouns. This phenomenon of ambiguity becomes more apparent in formal written language, such as newspapers, because the media demands high levels of consistency, clarity, and language standardization.

Gender ambiguity in borrowed technological terms presents a real linguistic issue, especially because these words often lack common feminine markers such as *tā' marbūṭah*, *alif maqṣūrah*, or *alif mamdūdah*. The absence of these markers creates uncertainty about a word's gender, whether it is masculine or feminine. This uncertainty also affects the agreement of verbs, adjectives, and pronouns that follow it. This issue becomes even more complex in journalistic language, as newspaper writing demands greater stability of norms and grammatical accuracy than informal communication.¹⁰ This phenomenon shows that language speakers do not rely solely on morphology to address the issue, but also use syntactic context to determine gender. One of the most important contexts is the annexation (*iḍāfah*) construction, because the relationship between the *mudāf* and *mudāf ilayh* can influence the gender interpretation of loanwords, either by clarifying or maintaining the existing ambiguity.¹¹

Several previous studies have emphasized that grammatical gender is a fundamental element of Arabic grammar. The literature on Arabic grammar generally explains that the *mudzakkar* and *mu'annats* systems

⁹ Rika Astari, 'Istilah Serapan Bahasa Inggris Pada Bidang Sains Dan Teknologi' (unpublished PhD Thesis, Universitas Gadjah Mada, 2015).

¹⁰ Muassomah Muassomah and others, 'The Portrayal of Gender in the Arabic Construction', *Academic Journal of Interdisciplinary Studies*, 11.5 (2022), p. 255, doi:10.36941/ajis-2022-0140.

¹¹ Alannisa Nur Khasanah, Muchlisin Nawawi, and Mohamad Yusuf Ahmad Hasyim, "'Iḍāfah Dalam Surat Al-Anbiyā'" (Analisis Sintaksis): Iḍāfah in Surat Al-Anbiyā' (Syntax Study)', *Lisanul Arab: Journal of Arabic Learning and Teaching*, 13.1 (2024), pp. 112–19, doi:10.15294/laa.v13i1.8489.

regulate syntactic agreement and serve as an important foundation for meaning formation.¹² Another study emphasizes the role of morphological markers such as *tā' marbūṭah*, *alif maqṣūrah*, and *alif mamdūdah* as the main indicators in gender identification.¹³ Several modern reference works also show that the annexation (*idāfah*) construction is a highly productive structure in Arabic for expressing complex nominal relations and for forming compound expressions, including in modern written forms.¹⁴ On the other hand, research on modern Arabic also shows that the introduction of new vocabulary from the realm of technology has created a need to negotiate new forms into the established language system, thereby opening up space for a more contextual approach to understanding grammatical gender.¹⁵

Most research on Arabic still places morphology at the centre of explaining grammatical gender determination. These studies are very helpful for understanding gender patterns in Arabic native vocabulary. However, they are not yet fully adequate to explain contemporary cases in which loanwords appear without clear morphological markers.¹⁶ Research specifically addressing borrowed technological terms in Arabic remains relatively limited, even though this field is developing rapidly and continuously generating new vocabulary. This indicates a lack of attention to the syntactic mechanisms used in modern texts, particularly newspapers.

¹² Aan Najib and Ahmad Abdul Malik, 'Semantic Change of Arabic Nouns in the Al-Qur'ān: Form, Process and Social Impact I Tagyīr al-Ma'nā Min Kalimah Ism al-Lugah al-'Arābiyyah Fī al-Qur'ān: Al-Syakl Wa al-'Amaliyyah Wa al-Āṣār al-Ijtimā'iyyah', *Jurnal Al Bayan: Jurnal Jurusan Pendidikan Bahasa Arab*, 12.2 (2020), pp. 301–21, doi:10.24042/albayan.v12i2.6371.

¹³ Guellouz, 'Gender Marking and the Feminine Imaginary in Arabic'.

¹⁴ DROR, Yehudit, 'Annexation ('iṭāfa) in Arabic Grammatical Thought', *Journal Asiatique* (BE), no. 2 (2016), pp. 179–91, doi:10.2143/JA.304.2.3186087.

¹⁵ Habri, Roziki, and Anshory, 'Al-Ta'rib Fī al-Muṣṭalahāt al-Iliktruniyyah Wa al-ṣiḥḥiyyah Bi Mauqī Mawdoo3.Com al-'Arabiyy'.

¹⁶ Zainab Abdulaziz Abdulla AlSabbagh, 'Grammatical Gender & Linguistic Relativity: Does the Grammatical Gender Native Arabic Speakers Assign Neutral Nouns Affect How They Perceive Them?', *European Journal of Foreign Language Teaching*, 7.1 (2023), doi:10.46827/ejfl.v7i1.4673.

The role of the annexation (*idāfah*) construction in determining gender specifically has not yet been a major focus in previous research, leaving a significant gap in contemporary Arabic linguistic studies. Based on these conditions, this research aims to fill a gap in the study by systematically examining the mechanisms of grammatical gender determination in borrowed technological terms in contemporary Arabic.

The research focuses not only on identifying morphologically ambiguous forms but also on analyzing the syntactic strategies used in journalistic practice to address them. In this case, the annexation (*idāfah*) construction is placed at the center of the analysis because this structure plays a crucial role in determining or negotiating gender through the relationship between *mudāf* and *mudāf ilayh*. This research also classifies gender patterns into *ḥukmī* and *ta'wīlī* categories based on the syntactic relationships that emerge in the data. Thus, the novelty of this research lies in shifting the focus from morphology to syntax and in the study's concentration on technological terminology in contemporary Arabic newspaper texts.

This research is important because it broadens the perspective on grammatical gender in modern Arabic, especially by demonstrating that gender assignment cannot always be explained solely through morphological forms. In the context of borrowed technological terms, Arabic demonstrates its adaptive capacity through syntactic strategies that maintain grammatical coherence amid the influx of global vocabulary. This study contributes to the development of contemporary Arabic linguistics, particularly by advancing understanding of the relationship between morphology, syntax, and lexical change. Furthermore, the use of newspaper corpora as a data source provides practical value for language teaching, dictionary compilation, media language editing, and language technology development. Thus, this research is not only theoretically relevant but also makes a tangible contribution to modern linguistic practices.

METHOD

Research Design

This research employs a descriptive qualitative design, combined with quantitative frequency analysis, to examine syntactic gender patterns in contemporary Arab technology terminology. The qualitative approach is used to trace how gender is established, marked, and adapted in technological terms, thereby providing a deeper understanding of the linguistic processes involved. Meanwhile, the quantitative aspect counts and analyzes the frequency of occurrence of masculine and feminine forms, along with their morphological markers, thereby revealing trends and dominant patterns in the data. This research is corpus-based, compiling a collection of technology articles from contemporary Arab newspapers, so the analyzed data reflects authentic language use rather than merely prescriptive norms. This integrated approach allows for the identification of patterns, variations, and shifts in gender determination, as well as providing a strong foundation for descriptive analysis and statistical generalization.

Data Source

The data sources in this study include primary and secondary data that complement each other. Primary data consist of technological terms in the form of words and phrases obtained directly from technology news articles published in two Arabic-language online newspapers, namely *Akhbārul Yaum* (Egypt) and *An-Nahār* (Lebanon), from March 2020 to May 2023. These two media were chosen because they have a strong influence on Arab public discourse and show variations in editorial tendencies and the use of gender grammar. Meanwhile, secondary data includes various bibliographic sources such as Arabic grammar books, linguistic dictionaries and encyclopedias, technology terminology dictionaries, scientific journal articles, and relevant previous research, which serve as a theoretical foundation, comparative material, and verification tools in analyzing the use of grammatical gender.

Data Collecting Technique

The data in this study consist of Arabic words and sentences, which are classified as quantitative or qualitative based on their linguistic characteristics.¹⁷ The data collection process follows the stages of linguistic work: data provision, data analysis, and the presentation of analysis results.¹⁸ Data collection was carried out using the observation method, which involved observing language use in written texts and employing non-interactive, free-observation techniques because the researcher was not directly involved in the language production process. The advanced technique used is the recording method, which involves systematically recording linguistic forms relevant to the research focus.¹⁹ To support the collection and classification of corpus-based data, this research uses the Sketch Engine software as a corpus manager and text analyzed tool, enabling researchers to identify keywords, word combinations, usage patterns, and specific terminology in the online news texts of An-Nahār and Akhbārul Yaum.²⁰ Technically, the data were collected by compiling articles from both newspapers, combining them into a single file, uploading the corpus to Sketch Engine, and then classifying the data by parts of speech before further analysis in line with the research objectives.

Data Analyze Procedure

The collected data were analyzed using the intralingual matching method, which involves comparing linguistic elements within a single language system to identify forms, types, and gender markers in Arabic

¹⁷ Shry Heddy Ahimsa-Putra, 'Paradigma Penelitian Ilmu-Ilmu Humaniora. Makalah Kuliah Umum. Bandung: Program Studi Linguistik, Sekolah Pascasarjana, Universitas Pendidikan Indonesia', Sekolah Pascasarjana, Universitas Pendidikan Indonesia, 2009.

¹⁸ Sudaryanto Sudaryanto, *Metode Linguistik Ke Arah Memahami Linguistik*, 3rd edn (Gadjah Mada University Press, 1992).

¹⁹ Mahsun Mahsun, *Metode Penelitian Bahasa* (PT Raja Grafindo Persada, 2017).

²⁰ Adam Kilgariff, 'Create and Search a Text Corpus | Sketch Engine', 2003, p. 1 <<https://www.sketchengine.eu/>>.

and their usage in sentences in newspaper texts. The recorded data were then arranged alphabetically to facilitate classification and comparison by gender categories and their markers.²¹ Next, the analysis is strengthened by using the top-down distributional method, which traces the derived forms of a word back to its base form to reveal the morphological structure of the terms being studied.²² In support of corpus-based analysis, this research also uses the Sketch Engine software to analyze word behavior, including collocation patterns and the appropriateness of technological terms in online news texts from the newspapers *An-Nahār* and *Akhhbārul Yaum*.²³ The analysis results are then presented informally as a narrative description, using relevant linguistic terms, thereby meeting the principles of descriptive adequacy, explanatory clarity, and completeness in the systematic, clear, and comprehensive presentation of research findings.²⁴

Result and Discussion

In this study, 326 technological terms were identified, consisting of 97 translated terms and 229 borrowed terms, with usage distributions in the forms *mudzakkar* and *mu'annath*, sourced from the newspapers *An-Nahār* and *Akhhbār al-Yaum*. The mechanism for determining gender in technological terms has shifted from morphology to syntax and semantics. This is because most loanwords entering Arabic do not retain their original morphological patterns.²⁵ Based on this framework, the discussion of the research results is

²¹ Mahsun, *Metode Penelitian Bahasa*.

²² Fatimah Djajasudarma, *Metode Linguistik: Ancangan Metode Penelitian Dan Kajian*. (Refika Aditama, 2010).

²³ Kilgarrieff, 'Create and Search a Text Corpus | Sketch Engine'.

²⁴ Syamsul Hadi, 'Kata-Kata Serapan Dari Bahasa Arab Yang Terdapat Dalam Kamus Besar Bahasa Indonesia (KBBI)' (unpublished PhD Thesis, Universitas Gadjah Mada, 2003).

²⁵ Aufa Alfian Musthofa, 'Takwīn Al-Muʿallaqāt al-ʿArabiyyah al-ʿadīthah Fī al-Majāl al-ʿibbī: Dirāsah Taʿlīliyyah Fī Muʿjam al-Mawrid al-Muzdawaj Wa-al-Muʿjam al-ʿibbī Nūriyā', *LISANUDHAD*, 4.1 (2017), p. 85, doi:10.21111/lisanudhad.v4i1.1291.

directed toward three main aspects, namely: (1) gender ambiguity in borrowed technology terms, (2) the role of the annexation (*iḍāfah*) construction as a gender determiner, and (3) syntactic gender categorization based on the annexation (*iḍāfah*) construction, whether it is present explicitly or implicitly restored thru the processes of *hadhf* and *ta'wīl*.

1. Gender Ambiguity in Technology Loanwords

Gender ambiguity in technology loanwords in Arabic cannot be adequately explained solely through morphological features in their lexical forms. Most of the terms found in the data do not contain formal markers of femininity, such as *tā' marbūṭah*, *alif maqṣūrah*, *alif mamdūdah*, or *alif*, making them morphologically closer to the masculine category. However, the data shows that this tendency does not always persist at the syntactic usage level. A number of terms, such as أوبر (*ūbar*), أوركيديا (*ūrkiḍiyā*), إنيرجيا (*anīrjiyā*), فودافون (*būyīng*), سبيس إكس (*sībīs iks*), بروذكوم (*burūdkūm*), بايدو (*bāydū*), تويتر (*twītar*), نيك توك (*tīk tūq*), إنستغرام (*instagrām*), سوني (*sūnī*), سناب شات (*sināb shāt*), نتفليكس (*nitflīks*), إيموجي (*īmūjī*), أمازون (*amāzūn*), فورتنايت (*fūrtnāyt*), and البلوتوث (*al-blūtūth*), are instead used in constructions that lead to femininity (*mu'annats*) because they are governed by feminine *muḍāf* (*muḍāf*), such as شركة (*sharikah*), منصة (*manṣah*), خدمة (*khidmah*), تقنية (*tiqniyyah*), and لعبة (*lu'bah*). These findings indicate that the morphological form of loanwords is not always the primary basis for determining their grammatical gender. This can be seen more clearly in Table 1.

Additionally, Table 1 also shows that some loanwords have the possibility of appearing in both gender directions simultaneously, depending on the noun that governs them in the syntactic context. Terms like الواتساب (*al-wātsāb*), أبل (*abl*), جوجل/غوغل (*jūjil/ghūghil*), and الفيسبوك (*al-fīs būk*) can appear as *mudzakkar* (masculine) when interpreted thru *muḍāf* (genitive) such as تطبيق (*taṭbīq*), هاتف (*hātif*), موقع (*mawqī'*), متصفح (*mutaṣaffih*), روبوت (*rūbūt*), and مؤسس (*mu'assis*). Conversely, the same terms can appear as *mu'annats* (feminine) when associated with *muḍāf*, such as شركة (*sharikah*), كاميرا (*kāmīrā*), خريطة (*kharīṭah*), or منصة (*manṣah*). This pattern emphasizes

that gender ambiguity does not lie in the term's lexical form, but rather in the referential openness that allows a single term to be understood through more than one explanatory noun.²⁶ The syntactic tradition, as explained by Arummi et al.²⁷ and Fallaha et al.,²⁸ states that elements not visible on the surface can still function meaningfully through *ta'wīl* and, in many cases, through the mechanism of *ḥadhf*, which is the removal of certain elements while maintaining semantic indicators that allow those elements to be understood again. In this framework, the borrowed term for technology can be interpreted as a form that is 'suspended' until the context establishes the *muḍāf* or the referent it encompasses. Therefore, the gender ambiguity in technological terms indicates that Arabic does not rigidly impose a single gender but rather allows for contextual determination of gender.

Table 1:: Example of Ambiguity in Determining Gender Forms in Loanwords

No	Technology Terms	Factor Becomes a Masculine Form	Factor Becomes a Feminine Form
1	أوبر, اوركيديا, انيرجيا, بايدو, برودكوم, سيس إكس, بوينغ, فودافون, سوني	-	شركة
2	انستغرام, تيك توك, تويتر, سناب شات, نتفليكس, ايموجي, أمازون	-	منصة, شركة, خدمة
3	البلوتوث	-	تقنية

²⁶ Phillip G. Rogers and Stefan Th. Gries, 'Grammatical Gender Disambiguates Syntactically Similar Nouns', *Entropy*, 24.4 (2022), p. 520, doi:10.3390/e24040520.

²⁷ Afnan Arummi, Eva Farhah, and Reza Nugraha, 'Measuring Language Effectiveness In Arabic Expression Through Analysis of Ellipsis (Al-Hadzf)', unpublished paper delivered at Proceedings of First International Conference on Culture, Education, Linguistics and Literature, CELL 2019, 5-6 August, Purwokerto, Central Java, Indonesia (2019), *Proceedings of the Proceedings of First International Conference on Culture, Education, Linguistics and Literature, CELL 2019, 5-6 August, Purwokerto, Central Java, Indonesia*, doi:10.4108/eai.5-8-2019.2289792.

²⁸ Mahmoud Fallaha and Mustafa Ağâh, *Hadis Cümlelerde Hazf Belagatı 'Müşned-i Darimi'den Seçilmiş Hadisler Örneği'*, published online 31 March 2024, doi:10.5281/ZENODO.10900876.

4	فورتنايت	-	لعبة
5	الواتساب	تطبيق	شركة
6	ابل	هاتف	شركة
7	جوجل, غوغل	موقع, متصفح, روبوت, تطبيق, مؤسس	شركة, كاميرا, خريطة
8	الفيسبوك	موقع, تطبيق, مؤسس	منصة, شركة

Gender ambiguity in borrowed technology terms arises because their lexical forms generally lack clear gender indicators. Morphologically, terms like جوجل (Google), واتساب (WhatsApp), تيك توك (TikTok), فيسبوك (Facebook), إنستغرام (Instagram), نتفليكس (Netflix), أبل (Apple), and البلوتوث (Bluetooth) do not have formal feminine markers. Therefore, if only read from their word forms, these terms tend to be categorized as *mudzakkar*, because in Arabic grammar, all terms that do not have a feminine gender marker are included in the *mudzakkar* form. However, research data show that at the syntactic level, these terms do not always maintain that tendency. The same term can appear as *mudzakkar* in one context and as *mu'annats* in another. This phenomenon aligns with the views of Ya'qub²⁹ and Lloret,³⁰ who argue that gender can be determined by the wording, meaning, or syntactic relations that frame the word. Thus, the gender ambiguity in technological terms is not only due to the absence of morphological markers but also due to the openness to different interpretations of the referent. When a term like جوجل is understood as موقع, it leans toward *mudzakkar*; when understood as شركة or كاميرا, it shifts toward *mu'annats*. Therefore, this ambiguity should not be understood as a deviation, but rather as an adaptation of the Arabic gender system to the global lexicon that lacks an explicit inherent gender identity.

Based on the above explanation, it can be asserted that *muḍāf* is a central element in stabilizing the grammatical gender of borrowed technological terms. Its presence makes initially ambiguous terms acquire a

²⁹ Imil Badi' Ya'qub, *Al Mu'jam al-Mufassshal Fi al-Mudzakkar Wal Mu'annats* (Dar al-Kutub al-Ilmiyyah, 1994).

³⁰ Maria-Rosa Lloret, 'Gender and Its Morphological Effects', in *The Wiley Blackwell Companion to Morphology*, ed. by Peter Ackema and others, 1st edn (Wiley, 2023), pp. 1–43, doi:10.1002/9781119693604.morphcom032.

clearer gender orientation, whether toward *mudzakkar* or *mu'annats*. Thus, annexation (*iḍāfah*) in this context not only functions as a semantic relation between words but also as a grammatical mechanism that determines gender classification syntactically. Based on that, the subsequent discussion should focus on a more specific analysis of the role of the annexation (*iḍāfah*) construction in determining the gender of borrowed technological terms, both when the *muḍāf* is explicitly present and when it is restored through *hadhf* and *ta'wīl*.

2. The Role of Idhafah Construction in Determining Gender in Arabic

The findings of this research also indicate that the presence of *muḍāf* in syntactic construction plays an important role in affirming the gender forms of borrowed terms in the field of technology, whether as *mudzakkar* or *mu'annats*. This is evident in Table 2. Some example sentences show that technological terms do not always clearly indicate their gender when standing alone, but become more specific when used in an annexation (*iḍāfah*) relationship or accompanied by certain nouns. In the sentence أطلقت شركة فيسبوك مبادرة جديدة (aṭlaqat sharikat Fīsbūk mubādarah jadīdah), the term فيسبوك (Fīsbūk) is treated as feminine because it is preceded by the noun شركة (sharikah), thus the entire construction indicates a feminine gender. On the other hand, in the sentence ونشرت الصفحة عبر صفحتها الرسمية على موقع فيسبوك (wa-nasharat al-ṣiḥḥah 'abra ṣafḥatihā al-rasmiyyah 'alā mawqi' Fīsbūk), the term فيسبوك is emphasized as masculine thru the *muḍāf* موقع (mawqi'). A similar pattern is seen in the sentence قامت شركة آبل بالترجع عن موقفها السابق (qāmat sharikat Ābl bi-l-tarāju' 'an mawqifiḥā al-sābiq), which indicates that آبل (Ābl) is categorized as feminine because it is associated with شركة. As for the term غوغل/جوجل (Ghūghil/Jūjil), it shows two possibilities: in the phrase موقع غوغل (mawqi' Ghūghil), its gender is emphasized as masculine, whereas in the phrase كاميرا جوجل (kāmirā Jūjil), its gender is emphasized as feminine. Thus, this data shows that *muḍāf* functions as a syntactic element that clarifies and emphasizes the grammatical gender of technological loanwords in actual usage.

Table 2:: Example of the Existence of Genitive (*Mudhaf*) in Determining Gender in Loanwords

No	Technology Terms	Arabic Sentence
1	فيسبوك	أطلقت شركة فيسبوك مبادرة جديدة تمثل أكبر الاختراقات المحتملة في عالم الذكاء الاصطناعي،
2		ونشرت الصفحة عبر صفحتها الرسمية على موقع فيسبوك،
3	آبل	قامت شركة آبل بالتراجع عن موقفها السابق بحق تطبيق WordPress بعد أن نجحت في إجبار التطبيق المجاني على إضافة المشتريات،
4	غوغل، جوجل	الغريب أن موقع غوغل الذي انتظره الجميع،
5		لكن من غير الواضح كيف سيعمل هذا عصا المشي كاميرا جوجل تعمل Google على إنشاء عصا للمشي ...

Furthermore, the annexation (*idāfah*) construction occupies a central position in determining the gender of borrowed terms in the field of technology. In Arabic grammar, annexation (*idāfah*) is understood as the relationship between the *mudāf* and the *mudāf ilayh* that results in meaning restriction, specification, or the introduction of a reference.³¹ In the context of borrowed terms, this function also extends to the affirmation of the syntactic gender of the borrowed term. When terms like جوجل appear in the phrase موقع غوغل, it is read as *mudzakkar* because it is based on موقع; when it appears in كاميرا جوجل, it is read as *mu'annats* because it is based on كاميرا. The same pattern is evident in هاتف أوبو and منصّة تيك توك and شركة أوبو, تقنية and البلوتوث. This shows that gender in loanwords is not solely determined by their lexical form, but arises from a syntactic relationship with Arabic nouns already established within the Arabic gender system.³²

Annexation (*idāfah*) also functions as a mechanism for integrating foreign terms into Arabic grammar. Technological terms that come from outside the Arabic derivational system are essentially neutral or ambiguous in form. However, when the term is placed in an annexation (*idāfah*) relation, it acquires a grammatical framework that allows it to participate

³¹ DROR, Yehudit, 'Annexation (*idāfa*) in Arabic Grammatical Thought'.

³² Lloret, 'Gender and Its Morphological Effects'.

in the Arabic gender agreement system.³³ Therefore, annexation (*idāfah*) in borrowed terms cannot be viewed merely as a regular semantic relation, but also as a means of grammaticalization. Annexation (*idāfah*) integrates foreign words into Arabic's internal system while reducing potential gender ambiguity.³⁴ This aligns with the research findings. The relationship between elements in a phrase is not merely a matter of form, but also a matter of function. The clearer the *mudāf* that encompasses the borrowed term, the clearer the direction of the resulting gender. Therefore, the next discussion should highlight gender categorization at the syntactic level based on the annexation (*idāfah*) construction, namely *ḥukmī* and *ta'wīlī*, including when the *mudāf* element is physically absent due to *ḥadhf*.

The following data shows the presence of implicit *mudāf* in borrowed terms from the field of technology that play a role in determining grammatical gender. In this case, the gender form is not directly visible, so an interpretation of the hidden *mudāf* is needed to determine whether the term is used as *mudzakkar* or *mu'annats*.

Table 3:: Example of the Absence of Genitive (*Mudhaf*) in Determining Gender in Loanwords

No	Technology Terms	Arabic Sentence
1	واتساب	عاد واتساب إلى العمل جزئياً،
2		تقوم واتساب بتطوير ميزة تسمح للمستخدمين بإخفاء حالتهم أثناء استخدام التطبيق،
3	ميتا	بعد أن سبق لمجلس الإدارة أن قال مراراً وتكراراً إن ميتا يجب أن تكون أكثر شفافية في الطريقة التي تتواصل بها مع المستخدمين بشأن قراراتها.
4		أكدت ميتا أنها تختبر ميزة جديدة تتيح للمستخدمين تمييز المنشورات في ملفاتهم الشخصية،
5	الروبوت	لكن الروبوت الذي يعمل بالذكاء الاصطناعي يتدحرج بسرعة ويقف من تلقاء نفسه دون تدخل بشري.

³³ DROR, Yehudit, 'Annexation ('*idāfa*) in Arabic Grammatical Thought'.

³⁴ Khasanah, Nawawi, and Ahmad Hasyim, 'IDĀFAH DALAM SURAT AL-ANBIYĀ' (ANALISIS SINTAKSIS)'.

6	البلوتوث	و البلوتوث Mesh مدمجة،
7	نتفليكس	فقد نمت نتفليكس بشكل هائل بنمو عدد المشتركين،

The results of the data analysis show that, in several borrowed terms in the field of technology, the determination of grammatical gender is not always marked by the explicit presence of *mudāf*, but rather by implicit *mudāf*, which requires interpretation to understand.³⁵ In the data presented in Table 3, terms such as واتساب (Wātsāb), ميتا (Mītā), الروبوت (al-rūbūt), البلوتوث (al-bulūtūth), نتفليكس (Netflīks) do not morphologically contain markers of femininity; thus, by default, they tend to be understood as masculine. However, in sentence construction, these terms exhibit a certain gender tendency that can only be understood if it is assumed that there is an unmentioned *mudāf*. In the example عاد واتساب (‘āda Wātsāb) إلى العمل جزئياً and بتطوير ميزة (taqūmu Wātsāb) تقوم واتساب (Wātsāb) and تطبيق واتساب (taṭbīq Wātsāb) or شركة واتساب (sharikah Wātsāb). The same thing happens with ميتا (Mītā) in the sentence أَكَّدت ميتا (akkadat Mītā) ميزة جديدة، which shows the feminine form thru the pronoun ها (hā), indicating the presence of an implicit *mudāf* such as شركة ميتا (sharikah Mītā). On the other hand, in the example الذي يعمل بالذكاء الاصطناعي (al-rūbūt) الروبوت, the term appears as masculine, which can be interpreted as جهاز (jihāz) or نظام (niẓām). As for البلوتوث (al-bulūtūth) in the phrase البلوتوث Mesh مدمجة, it shows a tendency toward muṣannath through the adjective مدمجة (mudmajah), which implies an implicit *mudāf* of Bluetooth technology (taqniyat al-bulūtūth). Meanwhile, نتفليكس (Netflīks) in نمت نتفليكس (namat Netflīks) بشكل هائل shows a feminine form thru the verb نمت (namat), which can be interpreted as شركة نتفليكس (sharikah Netflīks). Therefore, the implicit *mudāf* functions as a syntactic gender determiner that is not directly visible but can be identified through grammatical agreement in the sentence.³⁶

³⁵ Khasanah, Nawawi, and Ahmad Hasyim, 'IḍĀFAH DALAM SURAT AL-ANBIYĀ' (ANALISIS SINTAKSIS)'.
³⁶ Khasanah, Nawawi, and Ahmad Hasyim, 'IḍĀFAH DALAM SURAT AL-ANBIYĀ' (ANALISIS SINTAKSIS)'.

3. Gender Categorization Based on Its Annexation (*Idāfah*) Construction

At the syntactic level, gender categorization in Arabic is not only determined by morphological forms but also by the relationships between elements in the sentence structure, particularly through the annexation (*idāfah*) construction. In this framework, the genders *mudzakkar* and *mu'annats* are divided into two main types, namely *hukmī* and *tawīlī*. The *hukmī* category refers to the determination of gender based on an explicit annexation (*idāfah*) relationship, where the *mudāf* and *mudāf ilayh* elements are present in the discourse, causing the gender of a word to follow the accompanying element. Meanwhile, the *tawīlī* category arises when the annexation (*idāfah*) relationship is implicit or implied. Hence, the determination of gender depends on an element understood in a figurative sense (*muqaddar/ellipsis (maḥdhūf)*), rather than one mentioned directly.³⁷ Thus, annexation (*idāfah*), whether *zāhir* or *maqdūr*, becomes the main factor in determining whether a term is classified as *mudzakkar* or *mu'annats* in the realm of syntax, especially in the use of modern loanwords that do not have morphological gender markers. This can be observed in Table 4 for *Hukmi* and in Table 4 for *ta'wīlī*.

Table 4: Example of *Hukmi-Type Gender Categorization*

No	Technology Terms	Arabic Sentence	Categorization
1	مستخدم (المتصفح)	وفي حال نجاح الدعوى فإن كل مستخدم للمتصفح الخفي منذ 1 يونيو 2016،	<i>Mudzakkar hukmi</i>
2	الملفات	كما يمكنك دعوة الآخرين لعرض كل الملفات التي تريدها وتنزيلها والتعاون فيها بدون الحاجة إلى إرسال مرفقات عبر البريد الإلكتروني.	<i>Mu'annats hukmi</i>
3	الحسابات	فيسبوك تغلق كل الحسابات المرتبطة بالجيش في بورما كان فيسبوك حجب صفحات الإخبارية المحلية والأجنبية للأستراليين وحظر مستخدمي منصته من مشاركة أي محتوى إخباري،	<i>Mu'annats hukmi</i>

Table 4 shows that the categorization of *hukmī* gender in borrowed-

³⁷ Ya'qub, *Al Mu'jam al-Mufassshal Fi al-Mudzakkar Wal Mu'annats*.

technology terms is largely determined by the presence of the *idāfah* construction (noun phrase), which connects foreign terms to Arabic nouns as gender determiners. As stated by Masyhadi³⁸ and Ya'qub³⁹, masculine (*mudzakkar*) and feminine (*mu'annats*) *ḥukmī* are categories of gender formed through syntactic relations, not through inherent morphological features. This is clearly evident in the example *كل مستخدم للمتصفح الخفي* /*kulla mustakhdimin li-al-mutaṣaffiḥi al-khafī*/ presented in Table 4. In this example, the word *كل* /*kulla*/ acquires the status of *mudzakkar ḥukmī* because it is based on the Arabic noun *مستخدم* /*mustakhdimin (al-mutaṣaffiḥi)*/, which is grammatically masculine. Thus, the masculinity in the borrowed term does not originate from its lexical form, but rather from the *idāfah* relationship, which explicitly shifts the gender from the core element (*muḍāf*) to the governing element (*muḍāf ilayh*). In other words, the gender form in the core element (*muḍāf*) is influenced by the presence of the governing element (*muḍāf ilayh*). In this context, *idāfah* serves as a syntactic mechanism that stabilizes the gender of a term within Arabic grammar.⁴⁰

The same applies to the feminine form; the data in Table 4 also show the pattern of *mu'annats ḥukmī*, which occurs when a term in Arabic that is morphologically *mudzakkar* is categorized as *mu'annats* because it is based on an Arabic noun with a feminine gender. This is in line with Al-'Asliliy's opinion that *mu'annats ḥukmī* arises due to the absence of a *ta'nīs* marker in the word, but acquires femininity through syntactic relations.⁴¹ Prominent examples include *كل الملفات* /*kulli al-malaffāti*/ and *كل الحسابات* /*kulli al-ḥisābāti*/. In these constructions, the word *كل* /*kulla*/ is classified as *mu'annats ḥukmī* because it follows the gender of the nouns *الملفات* /

³⁸ Anang Rikza Masyhadi, 'Mudzakkar Dan Muannats Dalam Susunan Al-Quran: Tinjauan Morfo-Sintaksis Dan Semantik' (unpublished PhD Thesis, Universitas Gadjah Mada, 2014).

³⁹ Ya'qub, *Al Mu'jam al-Mufassshal Fi al-Mudzakkar Wal Mu'annats*.

⁴⁰ DROR, Yehudit, 'Annexation ('*idāfa*) in Arabic Grammatical Thought'.

⁴¹ Hamid 'Aisiy Musthafa Al-'Asliliy, *Ta'nits al-Mudzkkar Fi al-Qur'an al-Karim Wa Kalam al-'Arab* (Maktabatu al-Adab, 2018).

al-malaffāti/ and الحسابات /*al-ḥisābāti/*, which clearly end with *alif* and *ta'* (markers of the feminine plural) and are in the feminine gender. This shows that *idāfah* not only connects two elements semantically but also serves as the main means of transferring gender categories.

Overall, the findings in Table 4 affirm that the *ḥukmī* gender is a less productive category in modern Arabic, particularly in the integration of technological terms. Although it is less productive in the field of technology, this finding reinforces the theoretical framework proposed by Masyhadi, Ya'qub, and Al-'Asliliy that the *ḥukmī* gender is not marginal but rather an adaptive mechanism that allows Arabic to accommodate new vocabulary without altering its morphological system. Therefore, the analysis of the *idāfah* construction is key to understanding the technological terms categorized as *mudzakkar ḥukmī* or *mu'annats ḥukmī* in contemporary linguistic practice.

Meanwhile, Table 5 presents data on technological terms that fall under the *tawīlī* gender. This category is formed due to the presence of an implicit or ellipsis annexation (*maḥdhūf idāfah*) construction, so the determination of gender is not directly visible in the sentence structure, but rather requires an interpretative (*ta'wīl*) process both grammatically and semantically.⁴² Thus, the gender of a term in this category is determined based on the understood presence of the *mudāf* element, rather than being explicitly stated in the utterance.

Table 5: Example of *Ta'wīlī*-type gender categorization

No	Technology Terms	Arabic Sentence	Categorization
1		عاد واتساب إلى العمل جزئياً،	<i>Mudzakkar ta'wīlī</i>
2	واتساب	تقوم واتساب بتطوير ميزة تسمح للمستخدمين بإخفاء حالتهم أثناء استخدام التطبيق،	<i>Mu'annats ta'wīlī</i>

⁴² Arummi, Farhah, and Nugraha, 'Measuring Language Effectiveness In Arabic Expression Through Analysis of Ellipsis (Al-Hadzfi)'.

3		بعد أن سبق لمجلس الإدارة أن قال مراراً وتكراراً إنَّ ميتا يجب أن تكون أكثر شفافية في الطريقة التي تتواصل بها مع المستخدمين بشأن قراراتها.	<i>Mudzakkar ta'wīlī</i>
4	ميتا	أكدت ميتا أنها تختبر ميزة جديدة تتيح للمستخدمين تمييز المنشورات في ملفاتهم الشخصية.	<i>Mu'annats ta'wīlī</i>
5	الروبوت	لكن الروبوت الذي يعمل بالذكاء الاصطناعي يتدحرج بسرعة ويقف من تلقاء نفسه دون تدخل بشري.	<i>Mudzakkar ta'wīlī</i>
6	البلوتوث	و البلوتوث Mesh مدمجة،	<i>Mu'annats ta'wīlī</i>
7	نتفليكس	فقد نمت نتفليكس بشكل هائل بنموّ عدد المشتركين،	<i>Mu'annats ta'wīlī</i>

At the syntactic level, the data analysis results in Table 5 show that the categorization of *tāwīlī* gender in technology loanwords is greatly influenced by the process of interpreting meaning through implicit (*maqdūrah*) annexation (*idāfah*). As stated by Masyhadi⁴³ and Ya'qub,⁴⁴ *mudzakkar* and *mu'annats tāwīlī* are categories of gender determined not by the *lafzī* form, but by the interpretation of hidden elements within the sentence structure. This is evident in the example واتساب (*Wātsāb*) in the sentence عاد واتساب إلى العمل جزئياً (*āda Wātsāb ilā al-'amal juz'iyān*), which is categorized as *mudzakkar tāwīlī*. Syntactically, the use of the masculine verb عاد (*āda*) indicates that واتساب (*Wātsāb*) is interpreted as تطبيق واتساب (*taṭbīq Wātsāb*) or نظام واتساب (*nizām Wātsāb*), both of which are masculine. In this context, annexation (*idāfah*) is not explicitly present, but it still functions conceptually as the basis for gender determination through the understood *muḍāf* element. Thus, the masculinity in the term results from a syntactic interpretation process that refers to the hidden masculine noun.

On the other hand, Table 5 also shows that the same term can shift to *mu'annats tāwīlī* when interpreted with a *mu'annats* noun in a different context. This is evident in the example واتساب (*Wātsāb*) in the sentence تقوم

⁴³ Masyhadi, 'Mudzakkar Dan Muannats Dalam Susunan Al-Quran: Tinjauan Morfo-Sintaksis Dan Semantik'.

⁴⁴ Ya'qub, *Al Mu'jam al-Mufassshal Fi al-Mudzakkar Wal Mu'annats*.

مينة (Mītā) (taqūmu Wātsāb bitaṭwīr mīzah...), as well as مينة (Mītā) (akkadat Mītā annahā). In both examples, the use of the feminine verbs تقوم (taqūmu) and أكدت (akkadat) as well as the pronoun ها indicates that the terms are interpreted as شركة واتساب (sharikat Wātsāb) and شركة مينة (sharikat Mītā), where شركة (sharikat) is a feminine noun. This phenomenon aligns with Al-'Asliliy's explanation that mu'annats tāwīlī appears contextually when a word originally masculine is interpreted with a feminine noun that has a synonymous meaning.⁴⁵ Thus, annexation (*idāfah*) in the form of ellipsis (*maḥdhūf*) plays an important role in directing gender interpretation, even though it is not explicitly visible in the sentence structure.

Furthermore, the data in Table 5 also shows the consistency of this pattern in other terms such as الروبوت (al-rūbūt), البلوتوث (al-bulūthūth), and نتفليكس (Natflīks). In the sentence ... لكن الروبوت الذي يعمل بالذكاء الاصطناعي (lākin al-rūbūt alladhī ya'mal bi al-dhakā' al-iṣṭinā'ī...), the term الروبوت (al-rūbūt) is categorized as *mudzakkar tāwīlī* because it is interpreted as جهاز الروبوت (jihāz al-rūbūt) which is masculine. Conversely, in the example البلوتوث (al-bulūthūth) in the phrase مدمجة البلوتوث Mesh (al-bulūthūth Mesh mundamijah), and نتفليكس (Natflīks) in the sentence ... نمت نتفليكس (namat Natflīks...), both are categorized as *mu'annats tāwīlī* because they are interpreted as تقنية البلوتوث (taqniyyat al-bulūthūth) and منصّة نتفليكس (manṣṣat Natflīks), which are of the feminine gender. This finding confirms that tāwīlī gender is dynamic and highly dependent on the syntactic context and the speaker's conceptual choices in interpreting borrowed terms. Thus, annexation (*idāfah*), although not explicitly present, remains the primary mechanism for determining the direction of gender categorization, while also demonstrating Arabic's flexibility in integrating modern technological vocabulary into its grammatical system.

⁴⁵ Al-'Asliliy, *Ta'nits al-Mudzakkar Fi al-Qur'an al-Karim Wa Kalam al-'Arab*.

CONCLUSION

This study concludes that the determination of grammatical gender in Arabic for borrowed technological terms cannot be explained solely by morphological forms. Most loanwords lack a feminine marker, but in syntactic usage, they can appear as either masculine or feminine. This shows that the gender of loanwords is contextual and determined by the syntactic-semantics relations surrounding them. In this finding, the annexation (*iḍāfah*) construction has proven to be the main mechanism for asserting gender, both through the explicitly present *mudāf* and through the omitted *mudāf* that is restored through *ta'wīl*. Based on this, syntactic gender can be categorized into two forms, namely *ḥukmī* and *ta'wīlī*. Theoretically, this result extends the study of grammatical gender in Arabic by arguing that gender analysis should not be based solely on morphology but also encompass syntax, semantics, and usage context. Thus, this research positions annexation (*iḍāfah*) not only as a genitive construction but also as an active grammatical device in integrating modern technological terms into the Arabic gender system.

Nevertheless, this research has limitations because it relies solely on newspaper corpora, thus not fully representing the diversity of gender usage across the entire landscape of modern Arabic. Newspaper data indeed reflects formal, standardized language, but it has not yet captured the variations that emerge in spoken language, social media, digital communication, or other non-standard varieties. Therefore, future research should expand the corpus to include a broader range of registers and platforms to depict gender dynamics more comprehensively. Additionally, future studies are recommended to expand the analysis into morpho-semantics, phonology, sociolinguistics, pragmatics, and critical discourse analysis, so that the influence of phonetic factors, social

context, and language ideology on gender determination can be more deeply understood. The use of larger corpora, computational linguistic approaches, synchronic and diachronic perspectives, and cross-linguistic comparisons is also important. With these steps, future research can produce a more comprehensive picture of the interaction between annexation (*idāfah*) and grammatical gender in contemporary Arabic.

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