

## The Grammatical Model of Units Borrowed from Foreign Languages into Uzbek (Based on MAT and PAT Analysis)

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### ABSTRACT

*Language contact not only enriches a recipient language’s vocabulary but also shapes its grammatical structure. Borrowing processes extend beyond phonetic and lexical integration, influencing morphology, syntax, and word formation patterns. This paper examines the grammatical adaptation of borrowed units in Uzbek through the frameworks of Francesco Gardani’s MAT (Matter) and PAT (Pattern) models. The study analyzes material borrowings from Arabic, Persian, Russian, and English, as well as the replication of structural templates, illustrating how these elements have become embedded in Uzbek grammar. Using descriptive, comparative, and structural analysis, the research identifies key morphological and syntactic patterns and explains their adaptation mechanisms. The findings highlight the role of MAT and PAT processes in linguistic innovation, demonstrating that borrowing serves not only as a means of lexical expansion but also as a driver of grammatical change. This study contributes to the field by offering an updated analysis of Uzbek within a global typological framework, emphasizing the interaction between foreign models and native grammatical norms.*

**Keywords:** Grammatical borrowing, language contact, MAT model, PAT model, lexical adaptation, grammatical integration

## INTRODUCTION

Lexical borrowing is a natural and recurrent process in the evolution of languages. Over the course of their history, all languages come into contact with others, leading to the incorporation of lexical items, grammatical structures, and even phonetic features into their systems. Crucially, borrowing is not confined to phonetic or lexical elements; it often extends to the grammatical level, affecting the structural organization of the recipient language.

In recent years, the study of grammatical borrowing has gained renewed prominence, particularly through the theoretical frameworks proposed by Francesco Gardani – the MAT (matter) and PAT (pattern) models. MAT refers to the borrowing of external linguistic material such as words, affixes, or morphemes, a process also described as material borrowing, formal transfer, or morphological integration (2020). PAT, in contrast, denotes the borrowing of grammatical, syntactic, or morphological structures that function as templates or frameworks within a language. This model is often referred to as template-based borrowing, structural transfer, or grammatical form projection.

Gardani's approach provides a valuable analytical tool for classifying grammatical borrowings in linguistics. It offers a coherent methodology for examining how borrowed elements in Uzbek are adapted and integrated into its grammatical system.

This article specifically applies the MAT and PAT frameworks to analyze borrowing in Uzbek, focusing on their forms, functions, and manifestations in the grammatical system.

Previous studies have documented the historical influence of Arabic and Persian on Uzbek vocabulary and examined Russian and English lexical borrowings in modern times. However, there is insufficient systematic analysis of how these borrowings integrate grammatically using MAT and PAT principles.

This research bridges that gap by providing a comparative-structural examination of both morphological and syntactic borrowings into Uzbek, showing how MAT and PAT models operate in tandem. The analysis extends the theoretical discussion of grammatical borrowing to include modern English-

based patterns alongside traditional Arabic, Persian, and Russian influences.

#### RESEARCH METHODOLOGY

This research employs a model-based analytical approach to examine the grammatical adaptation of borrowed units in Uzbek. Three complementary methods were applied:

Descriptive-linguistic analysis – to identify and characterize borrowed lexical items in their present grammatical forms.

Comparative-typological analysis – to compare these units with their counterparts in the donor languages, highlighting structural similarities and differences.

Structural analysis – to investigate the internal grammatical organization of borrowed forms and their integration into Uzbek morphology and syntax.

The methodological framework is grounded in Francesco Gardani's MAT (Matter) and PAT (Pattern) models. The MAT model is used to trace the transfer of external linguistic material—such as lexemes, affixes, and morphemes—while the PAT model examines the replication of grammatical templates, including word-formation rules, syntactic constructions, and morphological patterns. By combining these approaches, the study provides a comprehensive account of how borrowed forms are morphologically and syntactically assimilated into Uzbek.

#### LITERATURE REVIEW

The phenomenon of borrowing within the framework of the MAT (Matter) and PAT (Pattern) models has been extensively discussed in global linguistics. Seminal works by scholars such as Weinreich (1953), Haugen (1950), Thomason & Kaufman (1988), Heine & Kuteva (2005), and Matras & Sakel (2007) have examined the processes and mechanisms of grammatical borrowing from multiple perspectives.

In his influential study *Languages in Contact*, Weinreich (1953) defines grammatical interference as “the process by which one language adopts features from another language’s

grammatical system, affecting its syntax, morphology, and phonology.” He identifies two principal pathways for such change: the MAT approach, in which borrowed items undergo phonological adaptation, and the PAT approach, in which grammatical models are replicated in the recipient language.

Haugen (1950), in his foundational work on language borrowing, emphasizes the transformative impact of borrowing on the internal structure of the receiving language. He associates the MAT approach with the adoption of morphological and phonological structures, whereas the PAT approach involves changes in syntactic and semantic frameworks. Haugen also introduces the concept of loan translation (calquing), whereby a foreign phrase or idiom is translated word-for-word according to its meaning, producing a new lexical item that mirrors the source language semantically while remaining structurally compatible with the recipient language.

Thomason & Kaufman (1988), in *Language Contact, Creolization, and Genetic Linguistics*, conduct a comparative analysis of MAT and PAT as the primary mechanisms of linguistic borrowing and grammatical change. Their findings suggest that the PAT model is predominantly associated with the adoption of syntactic structures, while morphological and phonological changes occur less frequently.

Heine & Kuteva (2005) approach grammatical borrowing through the lens of grammaticalization – a process in which lexical items gradually acquire grammatical or auxiliary functions, losing much of their original lexical meaning. They note that although MAT and PAT may appear distinct, they frequently co-occur in language contact situations (cf. Haugen 1950). In their framework, the PAT approach encompasses the transfer of grammatical templates and semantic structures, often leading to the formation of new grammatical categories.

Matras (2007), further refines the distinction between the two models. He observes that in MAT borrowing, words generally preserve their morphological form and phonological shape, whereas in PAT borrowing, it is the structural pattern that is transferred. He argues that PAT borrowing tends to have a more persistent and long-term influence, as grammatical structures are

more deeply embedded in the linguistic system of the recipient language.

Finally, Matras & Sakel (2007) highlight the complementary nature of MAT and PAT processes. In their analysis, MAT involves phonological and morphological adaptation of borrowed lexemes, while PAT entails the adoption of novel grammatical templates. Their research demonstrates how both processes are realized in diverse languages and across varied sociolinguistic contexts.

Despite extensive theoretical development, systematic application of the MAT/PAT framework to Uzbek remains limited. Previous research has often treated borrowings from Arabic, Persian, Russian, and English as separate phenomena, without addressing how their structural influences interact within the Uzbek grammatical system.

By applying the MAT/PAT framework comparatively across multiple donor languages, this research provides an integrated account of how grammatical borrowing operates in Uzbek. The analysis captures both historical and contemporary borrowing patterns, offering empirical evidence that enriches both Turkic studies and general contact linguistics theory.

#### ANALYSIS AND RESULTS

The integration of borrowed elements into Uzbek can be observed along two major dimensions:

- Direct lexical borrowing – the adoption of foreign words with little or no phonetic or orthographic modification, followed by gradual morphological assimilation.
- Grammatical borrowing – the incorporation of foreign grammatical templates, word-formation rules, and syntactic structures into the native system, often without importing the original lexical items.

While direct lexical borrowings initially function as independent units, they eventually enter Uzbek morphological paradigms through the addition of native suffixes. Grammatical borrowings,

in contrast, alter the structural organization of the language, introducing new morphological and syntactic patterns.

*MAT model adaptation in Uzbek*

Borrowings from Arabic, Persian, Russian, and English often retain their original phonological form but are adapted into Uzbek through derivational, inflectional, and case markers:

Arabic: *ilm* → *ilmiy*, *odob* → *odobli*, *axloq* → *axloqli*  
 Persian: *kitob*, *gul* → *gulxona*, *kutubxona*  
 Russian: *zavod*, *fabrika* → *zavodlar*, *fabrikalarda*  
 English: *chat*, *scanner* → *chatlashmoq*, *skaner qilmoq*

These examples show how MAT borrowing involves the material transfer of lexemes, which are then embedded in the native morphological system.

The MAT model in Uzbek demonstrates a high capacity for integrating foreign lexemes while preserving recognizability and ensuring grammatical compatibility through native affixation.

In the PAT model of grammatical assimilation, the recipient language adopts foreign grammatical templates such as syntactic structures, compound formation rules, conjunctions, and other grammatical tools. This phenomenon frequently arises through translation, education, cultural exchange, and second-language acquisition.

The following section (typically represented in a table in the original) outlines morphological structures borrowed into Uzbek from Arabic, Persian, Russian, and English based on the PAT model.

Table 1. *Morphological structures adopted through the PAT model*

Source language	Grammatical pattern	Examples	Explanation
Arabic	Noun + <i>-iy</i> ⇒ Adjective	<i>ilm</i> → <i>ilmiy</i> , <i>siyosat</i> → <i>siyosiy</i>	The <i>-iy</i> suffix, characteristic of adjectives in Arabic, is actively used in Uzbek adjective formation. This grammatical template is widely applied in

			scientific, religious, and formal styles. Through this pattern, terms such as <i>ilmiy</i> (scientific), <i>siyosiy</i> (political), and <i>rasmiy</i> (official) have been formed and established themselves firmly in modern Uzbek terminology.
Persian	Noun + <i>-goh</i> ⇒ Noun	<i>chosh + goh</i> → <i>choshgoh</i> , <i>o'yin + goh</i> → <i>o'yingoh</i> , <i>orom + goh</i> → <i>oromgoh</i>	This Persian model forms compound nouns indicating places (e.g., dining area, play area, rest place). Though brief, this pattern has integrated spatial and functional concepts into Uzbek via morphological borrowing.
Russian	Noun + <i>-ist</i> ⇒ Profession/Person	<i>artist</i> , <i>sotsialist</i> , <i>jurnalist</i>	The Russian <i>-ist</i> suffix, which denotes professions or ideological affiliations, has been integrated into Uzbek while retaining both its semantic and morphological functions. This affix helps form lexical units referring to social roles or occupations, such as <i>jurnalist</i> (a person working in journalism or mass media), <i>sotsialist</i> (a person aligned with socialist ideas), and <i>artist</i> (a person engaged in the arts). These words are widely used and conform to the PAT borrowing model.

In such cases, grammatical models from foreign languages—particularly word-formation patterns and inter-word structural relationships—are actively incorporated into Uzbek. One notable example is the adaptation of English compound nouns into Uzbek through transliteration while retaining key morphological elements.

For instance, co-working has entered Uzbek as *kovorking*, and start-up as *sturtap*. These borrowings preserve the original English morphemes (*-ing*, *up*) while undergoing phonological adaptation to conform to Uzbek orthography. They are now productively used in newly formed lexical combinations, such as

kovorking markazi (co-working center) and startup loyihasi (start-up project).

The official announcement of the opening of a Kovorking markazi at Tashkent State University of Law exemplifies this process. Mass media have likewise reported the establishment of kovorking spaces in various cities, including Navoi, Payariq, and Bukhara, as well as in higher education institutions (e.g., Bukhara State University) and non-governmental organizations.

Furthermore, under the “Digital Startups Program,” participants may receive financial support of up to 300 million UZS for the development of startup initiatives. Such examples illustrate how transliterated English loanwords, once introduced, quickly extend their usage into formal, technological, and business registers of Uzbek.

Below is a list of syntactic models that have entered the Uzbek language from Arabic, Persian, Russian, and English through PAT (pattern replication). These models are based on grammatical relationships between words, sentence structure, or constituent order, and their configurations mirror those found in the donor languages. Such patterns are particularly common in scientific, formal, journalistic, and translation-based contexts.

Table 2. *Syntactic models borrowed via the PAT Framework*

Source language	Syntactic pattern	Examples in Uzbek	Explanation
Arabic / Persian	Izafa construction (N1 + N2) / Attributive noun phrase (modifier + noun)	<i>ilm uyi</i> (“bayt al-‘ilm”), <i>ta’lim markazi</i> , <i>madaniyat uyi</i> , <i>kitob olami</i> , <i>o’quv muassasasi</i>	The Arabic izafa structure (e.g., <i>bayt al-‘ilm</i> ) appears in Uzbek as <i>ilm uyi</i> , preserving the word order and possessive logic. The Persian attributive model (adjective/noun + noun) is reflected in Uzbek phrases such as <i>ta’lim markazi</i> and <i>madaniyat uyi</i> . These expressions reflect attributive or genitive relations formed through the first component. Structurally, although the lexical elements are Uzbek, the syntactic model follows a foreign template and is an example of PAT borrowing via translational adaptation.

Russian	Complex sentence: Main clause + "ki" + subordinate clause	<i>Men bilamanki, u keldi</i> (I know that he came)	Russian subordinate clause constructions with <i>imo</i> are rendered in Uzbek using the conjunction <i>ki</i> . The syntactic structure is modeled after Russian, making this a clear case of PAT-based structural borrowing. It is actively used in scientific, journalistic, and literary styles.
English	Passive construction: was/were + V3 ⇒ -ildi suffix	<i>Loyiha bajarildi</i> (The project was completed)	The English passive voice model is represented in Uzbek by the -il/-ildi suffix. For instance, <i>The project was completed</i> becomes <i>Loyiha bajarildi</i> . This pattern has been assimilated into Uzbek via PAT-based syntactic borrowing.

In all these cases, the lexical material may be fully Uzbek, yet the grammatical order, syntactic linkage, and overall structural configuration are directly modeled on foreign language templates. These patterns exemplify structural borrowing via the PAT mechanism, demonstrating how Uzbek integrates external syntactic frameworks into its grammatical system.

This is further evidenced by the following set of examples, which clearly demonstrate the realization of the *izafa*-based syntactic pattern in Uzbek as modeled on Arabic grammatical structures.

Table 3. *Examples based on the Arabic izafa construction*

No.	Arabic Phrase	Uzbek Equivalent	Syntactic Model (Construct + Genitive with Case Marking)
1	مركزُ العلم (markazu al-‘ilmi)	<i>Ilm markazi</i> (Center of knowledge)	Noun + Noun (Ism + Ism)
2	أهلُ الأدب (ahlu al-adabi)	<i>Adab ahli</i> (People of literature)	Noun + Noun (Ism + Ism)
3	ماءُ الطهارة (mā’u at-ṭahārati)	<i>Tahorat suvi</i> (Ablution water)	Noun + Noun (Ism + Ism)
4	تَرْوِيجُ المَعْنَوِيَّةِ (tarwīju al-ma’naviyyati)	<i>Ma’naviyat targ‘iboti</i> (Promotion of spirituality)	Verbal noun + Noun (Masdar + Ism)
5	وَقْتُ العِبَادَةِ (waqtu al-‘ibādati)	<i>Ibodati vaqti</i> (Time of worship)	Noun + Verbal noun (Ism + Masdar)

6	السَّنَةُ الْهِجْرِيَّةُ ( <i>as-sanatu al-hijriyyatu</i> )	<i>Hijriy yil</i> (Hijri year)	Noun + Adjective (Ism + Sifa)
7	قَضَاءُ الْقَدَرِ ( <i>qaḍā'u al-qadari</i> )	<i>Taqdir taqozosi</i> (Decree of destiny)	Verbal noun + Noun (Masdar + Ism)

The above examples show that the N1 + N2 izafa model—corresponding to the Arabic *mudāf + mudāf ilayh* structure—has been deeply assimilated into Uzbek syntax. This pattern signifies not merely the borrowing of Arabic-rooted lexemes, but also the transfer and integration of a grammatical template.

Historically, constructions of this type were first introduced through religious and philosophical texts, later spreading into educational and formal registers. For example, phrases such as *tahorat suvi* (ablution water), *hijriy yil* (Hijri year), *ilm markazi* (center of knowledge), and *taqdir taqozosi* (decree of fate) are used across religious literature, academic writing, and official documents.

The frequency of use varies by semantic domain. The phrase *ilm markazi* is widely used in political and institutional discourse—appearing in presidential decrees, media publications, and university documents. In contrast, expressions such as *tahorat suvi* and *hijriy yil* are more common in religious settings, often preserved in sermons, mosque-based communication, and religious textbooks. Domain-specific expressions like *adab ahli* (people of literature) or *shariat hukmi* (Islamic ruling) appear mainly in scholarly and legal-religious discourse.

A notable grammatical feature of the izafa construction in Uzbek is that it functions without additional possessive suffixes. The governing element (N1) and the dependent element (N2) are linked directly, preserving the syntactic adjacency characteristic of Arabic. Examples include *ilm markazi* (center of knowledge), *sabr kaliti* (key to patience), and *ibodat vaqti* (time of worship). From a contact linguistics perspective, these are best classified as PAT (Pattern) borrowings, since the constructional template—rather than the lexemes themselves—has been transferred.

Functionally, these constructions operate in multiple stylistic layers of the language:

- Formal and institutional discourse – e.g., names of organizations, government decrees.
- Scientific and literary registers – e.g., academic publications, scholarly books.
- Religious and ethical communication – e.g., sermons, khutbahs, religious treatises.
- Mass media and public communication – e.g., newspapers, blogs, social media.

Thus, the Arabic izafa construction is not only a historical linguistic legacy but also a living syntactic tool in contemporary Uzbek, enriching its stylistic repertoire and illustrating the deep structural integration of foreign grammatical patterns.

Transitioning from Arabic to Russian models, a similar pattern of structural borrowing can be observed. Certain Russian syntactic constructions have been integrated into Uzbek either directly or via translation, particularly in social, political, administrative, and academic registers. While the lexical material may be Uzbek, the underlying syntactic frameworks are PAT-based replications of Russian models, now fully functional in the Uzbek linguistic system.

Table 4. *Russian PAT model based constructions In Uzbek phrase structures*

Model Type	Russian expression	Uzbek equivalent	Explanation
Attributive model (Adjective+Noun)	экономическое развитие социальная защита	<i>iqtisodiy rivojlanish, ijtimoiy himoya</i>	The Russian adjective formed with the suffix <i>-ическая</i> is morphologically adapted into Uzbek using the suffix <i>-iy</i> , forming compound adjectives. This pattern is widely used in official, scientific, and administrative styles. Reflects economic or social processes. The structure follows the

			attributive model and denotes the quality or direction of the noun it modifies.
Genitive construction (Izofa influence)	<i>центр образования, министерство здравоохранения</i>	<i>ta'lim markazi, sog'liqni saqlash vazirligi</i>	Russian noun + noun constructions are reinterpreted through the izafa model in Uzbek. The semantic relationship is possessive or attributive. The construction reflects functional or institutional belonging. The Uzbek version preserves the functional-genitive meaning, typical for bureaucratic discourse.
Nominal phrase (Noun + Verb expression)	<i>принятие решения, проведение анализа</i>	<i>qaror qabul qilish, tahlil o'tkazish</i>	Russian verbal nouns are translated as verb-noun combinations in Uzbek. This model is frequent in academic writing and legal-administrative language. Shows action-oriented concepts via deverbal nouns. Uzbek uses analytic constructions with action verbs to represent the same structure.
Prepositional model	<i>по инициативе учёных</i>	<i>olimlar tashabbusi bilan</i>	The Russian prepositional phrase with <i>no</i> is rendered with instrumental-case structures (e.g., <i>bilan</i> ) in Uzbek. Common in formal and media discourse.
Opinion attribution (Phrase)	<i>По мнению экспертов</i>	<i>mutaxassislar fikricha</i>	The opinion-based phrase <i>по мнению X</i> is borrowed into Uzbek

pattern)			as <i>X fikricha</i> , structurally replicating the pattern but with native lexical material.
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In the Uzbek language, syntactic models of Russian-origin word combinations are particularly prevalent in official, scientific, and administrative domains. These constructions play an important role in aligning the language with socio-economic developments. In many cases, such structures enter the language through direct translation; however, during the translation process, they are adapted to fit the grammatical norms of Uzbek. As a result, new lexical and syntactic units emerge in the Uzbek language.

In the context of globalization and rapid technological progress, the dominant role of English in international communication, science, education, information and communication technologies, and mass culture has significantly influenced the linguistic landscape of Uzbek. This influence is not confined to isolated lexical borrowings; rather, it extends to the transfer of syntactic templates – that is, structural patterns replicated through the PAT (Pattern) model.

These borrowed syntactic patterns serve as constructional frameworks into which Uzbek lexical material is integrated, thereby producing hybrid forms that are fully functional within the native grammatical system. Such borrowings are particularly prominent in journalism, academic discourse, information technology, law, and popular culture.

Table 5. English PAT models in Uzbek

Model Type	Structural formula	English example	Uzbek adaptation	Explanation
Passive construction	was/were + V3	The project was completed	<i>Loyiha bajarildi</i>	Uzbek does not employ auxiliary verbs in the passive voice; instead, result-oriented suffixes ( <i>-il</i> , <i>-ildi</i> ) convey the passive meaning. The structure retains the

				semantic focus on the result, replicating the English passive pattern via PAT.
		The report was submitted	<i>Hisobot topshirildi</i>	Morphologically distinct from English but structurally analogous, maintaining passive semantics.
Determinative model	Noun + of the year	Person of the year	<i>Yil odami</i>	The English NP order is reversed in Uzbek to conform to native syntax ([Year + Noun]). Common in media and award titles.
		Woman of the year	<i>Yil ayoli</i>	May optionally use the possessive particle <i>-ning</i> : <i>Yilning ayoli</i> .
		Teacher of the year	<i>Yilning o'qituvchisi</i>	Demonstrates full possessive-marked <i>izafa</i> integration.
		Book of the year	<i>Yil kitobi</i>	Structural possession adapted to Uzbek morphosyntax.
Prepositional Phrase	[Preposition + NP] → Postposition or instrumental phrase	By decision of the court	<i>Sud qarori bilan</i>	English prepositions ( <i>by, on, in</i> ) are rendered as Uzbek postpositional or instrumental phrases.
		On behalf of the organization	<i>Tashkilot nomidan</i>	Semantic role preserved; syntactic pattern adjusted to Uzbek.
		In accordance with the law	<i>Qonunga muvofiq</i>	Now a standard expression in legal discourse.

Verb-forming pattern	Noun + <i>qilmoq/qilish</i>	Branding	<i>Brending qilmoq</i>	English nouns or gerunds are reanalyzed as verbal predicates via <i>qilmoq/qilish</i> .
		Marketing	<i>Marketing qilish</i>	Action-oriented reinterpretation of nominal forms.
		Scanning	<i>Skaner qilish</i>	Common in technological contexts.
		Picnic	<i>Piknik qilish</i>	Widely used in informal speech, reflecting socio-cultural borrowing.
Attributive pattern / adapted terminology	Adjective (often participle) + Noun	Advanced technology	<i>Ilg'or texnologiya</i>	English participial adjectives are matched with native or borrowed Uzbek equivalents.
		Mobile communication	<i>Mobil aloqa</i>	"Mobile" functions as an attributive modifier.
		Cyber security	<i>Kiber xavfsizlik</i>	Phonetic adaptation of "cyber"; structure replicates PAT.
		Artificial intelligence	<i>Sun'iy intellekt</i>	Fully integrated into Uzbek scientific terminology.
		Digital economy	<i>Raqamli iqtisodiyot</i>	Technological attribute preserved in PAT-based composition.
		Smart transport	<i>Aqlli transport</i>	Frequent in policy-making and innovation discourse.

These examples demonstrate that English structural models have entered Uzbek not merely as isolated calques, but as productive syntactic templates systematically integrated via the PAT (Pattern replication) mechanism, conforming to native

morphosyntactic norms while retaining the semantic and functional properties of the original English patterns.

From a contact linguistics perspective, this process reflects structural replication in the sense of Heine & Kuteva (2005), whereby the syntactic architecture of a donor language is mapped onto the recipient language, using native lexical material or adapted borrowings. The resulting hybrid constructions are now deeply embedded in the functional and stylistic systems of modern Uzbek, particularly in domains shaped by globalization and technological advancement.

Table 6. *Structural models and grammatical formulas of word combinations*

No	English phrase	Uzbek equivalent	Model type	Grammatical formula	Explanation
1	Advanced technology	<i>Ilg'or texnologiya</i>	Attributive model	V3 participle (adj.) + Noun	“Advanced” functions as a participial adjective; “technology” is a noun.
2	Mobile communication	<i>Mobil aloqa</i>	Attributive model	Descriptive Adj. + Noun	“Mobile” is a descriptive adjective; “communication” is a noun.
3	Cyber security	<i>Kiber xavfsizlik</i>	Terminological model	Compound noun → Adj. + Noun	“Cyber” acts as a lexical unit modifying “security”; treated as a compound.
4	Artificial intelligence	<i>Sun'iy intellekt</i>	Attributive model	Adjective+ Noun	“Artificial” is an adjective; “intelligence” is a noun. Common in technical terminology.
5	Digital economy	<i>Raqamli iqtisodiyot</i>	Attributive model	Adjective+ Noun	“Digital” describes the nature of the economy; lexical adaptation.

6	Smart transport	<i>Aqlli transport</i>	Attributive model	Adjective+Noun	“Smart” is an evaluative adjective; “transport” is a noun borrowed directly.
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In Uzbek, attributive and terminological models borrowed from English through the PAT (Pattern Replication) approach are actively used in official, scientific, technological, and cultural discourses. These constructions are adapted mainly through syntactic roles, word order, and grammatical functions.

In the recent stage of development of modern Uzbek, English-derived abbreviations and acronyms are increasingly being integrated not only as lexical units but also as syntactically and grammatically structured components. The Pattern Replication (PAT) model plays a crucial role in this process of adaptation.

Although the PAT model i.e., structural pattern replication is primarily applied at the syntactic level in linguistics, it functions significantly in the integration of acronyms into Uzbek. This occurs through new functional contexts, genitive (*izofa*) constructions, attributive linkages, and verb-forming syntactic structures.

While the morphological forms of the acronyms are largely preserved, their syntactic positions, grammatical roles, and the way they interact with surrounding units contribute to the realization of the PAT model in Uzbek. For example:

- *IT sohasi* (IT sector), *AI tizimlari* (AI systems), *CEO lavozimi* (CEO position) illustrate attributive constructions where adjective + noun structures in Uzbek reflect the original English syntactic templates.
- *IQ testi* (IQ test), *ERP tizimi* (ERP system), *KPI ko'rsatkichlari* (KPI indicators) are modeled through genitive constructions that reflect grammatical adaptation of the English structures.
- *VPNdan foydalanish* (using a VPN), *CRM joriy etildi* (CRM was implemented), *SEO optimallashtirish* (SEO

optimization) represent verb-oriented syntactic models, showcasing the verbal variant of the PAT model in Uzbek, where phrases are constructed around action.

Such examples are widespread and reflect an ongoing syntactic and functional alignment between English structural models and modern Uzbek usage.

Table 7. *PAT models in acronyms*

No.	Acronym	Full English form	Uzbek adaptation	Grammatical model (PAT)	Explanation (Translation + Usage)
1	IT	Information Technology	<i>IT sohasi / Axborot texnologiyalari</i>	Attributive model (Adj + Noun)	“Information Technology” is translated as <i>Axborot texnologiyalari</i> . “IT” is commonly used as <i>IT sohasi</i> (IT sector).
2	AI	Artificial Intelligence	<i>Sun’iy intellekt</i>	Attributive model (Adj + Noun)	“Artificial Intelligence” → <i>Sun’iy intellekt</i> ; frequently used in scientific, analytical, and IT discourse.
3	IQ	Intelligence Quotient	<i>IQ testi / Intellekt koeffitsiyenti</i>	Izofa model (Noun + Noun)	“Intelligence Quotient” corresponds to <i>Intellekt koeffitsiyenti</i> in Uzbek. The form <i>IQ testi</i> represents a genitive ( <i>izofa</i> ) construction.
4	VPN	Virtual Private Network	VPN	Branded acronym (Latin script)	Translates to <i>Virtual xususiy tarmoq</i> , but commonly retained as “VPN” in

					technical and digital contexts.
5	CEO	Chief Executive Officer	<i>Bosh ijrochi direktor</i>	Attributive model (Adj + Noun)	“Chief Executive Officer” adapted as <i>Ijrochi rahbar</i> or simplified to <i>Bosh direktor</i> in Uzbek usage.
6	HR	Human Resources	<i>Inson resurslari / HR bo‘limi</i>	Attributive model (Adj + Noun)	Common in contexts related to personnel and human capital; also used as “HR bo‘limi” (HR department).
7	SEO	Search Engine Optimization	<i>Qidiruv tizimini optimallashtirish / SEO</i>	Verb-derived model (Verb + Noun)	Widely used in digital marketing, website ranking, and advertising contexts. PAT model reflects verbal syntax.
8	GDP	Gross Domestic Product	<i>Yalpi ichki mahsulot</i>	Attributive model (Adj + Adj + Noun)	Economic term: <i>yalpi</i> (gross), <i>ichki</i> (domestic), <i>mahsulot</i> (product). Preserves original syntactic structure.
9	5G, 3G, 4G	Fifth Generation (mobile network)	<i>5-avlod tarmog‘i / 5G texnologiyasi</i>	Attributive model (Adj + Noun)	Pertains to mobile communication and internet infrastructure. “5G” is often used in genitive constructions in Uzbek.

10	ChatGPT	Chat Generative Pretrained Transformer	ChatGPT	Branded acronym	Adopted into Uzbek unchanged. Widely used in contexts involving AI and Telegram bots.
11	API	Application Programming Interface	<i>Dasturlash interfeysi / API</i>	Attributive model (Noun + Noun)	Translates to <i>Dasturiy ta'minot interfeysi</i> . Commonly used as "API" in Latin script in technical documents.
12	KPI	Key Performance Indicator	<i>Asosiy samaradorlik ko'rsatkichi / KPI</i>	Attributive model (Adj + Noun)	Used to assess performance in business environments. Often seen in usage like "KPI bajarildi" (KPI fulfilled).

All of these examples demonstrate that syntactic constructions and grammatical functions in Uzbek have been structurally transferred from foreign languages, indicating the practical application of the PAT model.

It is worth emphasizing that this phenomenon reflects the Uzbek language's rapid adaptation to modern fields such as science, technology, business, and analytical media, as well as the necessity to incorporate new meanings into the language.

At the same time, acronyms are drawing increasing attention not merely as lexical borrowings, but as linguistic units that are harmonizing with the grammatical system.

Therefore, the integration of acronyms into the grammatical system based on the PAT model should be considered one of the significant directions in linguistic research. Through such analysis, it is possible to identify the structural adaptability of the Uzbek language and its interactions with dominant languages.

## CONCLUSION

Lexical borrowing is widely recognized in linguistics as a complex and multifaceted phenomenon that extends beyond the mere transfer of words from one language to another. It also entails systematic influence on the morphological, phonological, and syntactic organization of the recipient language. Within contemporary linguistic theory, two complementary analytical frameworks—MAT (Material Transfer, involving morphological and phonological adaptation) and PAT (Pattern Replication, involving syntactic and constructional borrowing)—offer a rigorous methodological basis for examining these processes.

The MAT framework explains how borrowed lexemes are integrated into the recipient language through morphological and phonological assimilation. Loanwords from Arabic, Persian, Russian, and English frequently enter Uzbek with minimal phonetic modification, while adopting native inflectional, derivational, and case-marking systems. Such integration ensures both the recognizability of the source form and its compatibility with the structural norms of Uzbek.

In contrast, the PAT framework addresses grammatical-level influence, where syntactic patterns, constructional templates, and word-formation rules from the donor language are replicated in the recipient language—often without the direct transfer of lexical items. These patterns are particularly evident in Uzbek through the adaptation of Arabic *izafa* constructions, Russian subordinate clause structures, and English passive and attributive models. PAT-based assimilation enriches the structural repertoire of Uzbek, enabling the creation of new, productive syntactic models that operate within native grammatical constraints.

Both MAT and PAT processes play a significant role in shaping the current linguistic landscape of Uzbek. While MAT highlights the material incorporation of foreign elements, PAT underscores the replication of abstract grammatical structures. Together, they provide a comprehensive lens through which the dynamics of interlinguistic influence can be observed, allowing scholars to trace the evolution of vocabulary, syntax, and morphological systems under conditions of language contact.

The findings of this research confirm that borrowed elements, whether material or structural, undergo a systematic process of adaptation that reflects both linguistic and socio-cultural integration. This underscores the need for further empirical studies on borrowing mechanisms, particularly in relation to grammaticalization, semantic change, and the functional distribution of borrowed patterns across stylistic registers.

By applying the MAT and PAT frameworks to Uzbek, this study not only clarifies the mechanisms of borrowing but also contributes to a broader understanding of how languages accommodate, transform, and systematize external influences. Such insights have implications for the study of language change, typology, and contact linguistics in a globalized world.

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