
CHAPTER 6

Productivity of the Suffixes: Various Dimensions

In the previous chapter, we have discussed semantic importance, morphological rules of derivation and the productivity rate of the suffixes by using a few measuring methods. Now in this chapter, we are dealing with a few aspects of productivity, where we discuss how the suffixes rank based on a few characteristics listed below:

6.1 Word class

The chosen suffixes produce nouns and adjectives, and they are attached to bases that fall under the verb and noun categories. Although those that are linked to verbal bases are referred to as primary suffixes (krit pratyaya) and those that are attached to noun bases are referred to as secondary suffixes (tadhit pratyaya) according to traditional Assamese grammar, let us ignore the distinction between primary and secondary suffixes in this case. In the following table, base category and derived category of the suffixes are listed-

Table 6.1 Base category and Derived category of the suffixes

Suffix	Base category	Derived category
-ək	Noun, Verb	Noun, Adjective
-ən	Verb, Noun	Noun, Adjective
-əna	Verb, Noun	Noun
-əti	Verb, Noun	Noun, Adjective
-əni	Verb, Noun	Noun, Adjective
-ənija	Verb	Adjective, Noun
-əruwa	Noun	Adjective, Noun
-al	Verb, Noun	Adjective, Noun
-alu	Noun	Adjective
-aru	Verb	Noun
-ami	Verb, Noun, Adjective	Noun
-ahi	Noun, Verb	Adjective, Noun
-ija	Verb, Noun	Adjective, Noun
-uwa	Noun	Adjective, Noun
-uwal	Noun, Verb	Adjective, Noun

From the list, it is seen that suffixes are limited to one and more than one-word classes in terms of the bases they are connected to and the derivatives that follow.

The first observation is that among the 15 suffixes, the number of only nouns forming and only adjective forming suffixes is less than the number of suffixes that form words of both the word classes. Only two suffixes are derived from and connected to a single class of words. The suffix *-aru* creates only noun derivatives and is only attached to verbal bases, while the suffix *-alu* produces adjective derivatives and is only attached to nominal bases. Again, when it comes to bases, the suffixes *-ɔruwa*, *-alu*, *-uwa* are connected only to nominal bases, whereas the suffixes *-ɔnija* and *-aru* are attached only to verbal bases. The remaining suffixes are attached to more than one word class.

The suffixes that are attached only to Noun bases:

-ɔruwa: batɔruwa ‘pedestrian’, *dekerua* ‘full-grown’

-alu: dɔjalu ‘one who is kind’, *kripalu* ‘kind-hearted’

-ua: b^hagɔrua ‘tired’, *g^hɔrua* ‘domestic’

The suffixes that are attached only to Verb bases:

-ɔnija: pohɔnija ‘domestic’, *g^hurɔnija* ‘round’

-aru: xikaru ‘a learner’, *zuzaru* ‘a fighter’

Both Noun and Verb bases:

-ɔk: lek^hɔk ‘writer’, *-ɔn: k^hawɔn* ‘The act of eating’, *-ɔna: g^hɔtɔna* ‘incident’, *-ɔti: bɔxɔti* ‘a place of residence’, *-ɔni: basɔni* ‘selection’, *-al: k^hɔɲal* ‘angry’, *-ahi: sɔlahi* ‘deceiving’, *-ija: bɔsɔrija* ‘annual’, *-uwal: pahual* ‘strong, mighty’

Both adjective and noun bases: -ami:

gorami ‘orthodox’, *dustami* ‘wickedness’

Coming to the derived category, the suffixes *-ɔna*, *-aru* and *-ami* form nominal derivatives, *-alu* forms adjectives and the remainder generate derivatives of both noun and adjective categories.

Only Noun derivatives:

-*ɔna*: *g^hɔtɔna* ‘incident’, *pauna* ‘liabilities and assets’,
-*aru*: *xikaru* ‘a learner’, *zuzaru* ‘a fighter’
-*ami*: *gorami* ‘orthodox’, *dustami*

Only Adjective derivatives:

-*alu*: *dɔjalu* ‘one who is kind’, *kripalu* ‘kind-hearted’

Both Noun and Adjective derivatives:

-*ɔk*: *gajɔk* ‘singer’, *hiɣxatmɔk* ‘destructive, violent’, -*ɔn*: *k^hawɔn* ‘the act of eating’,
ɔgɔɔɔn ‘countless’, -*ɔti*: *bowɔti* ‘Weaver’, *puwɔti* ‘dawn’, -*ɔni*: *nasɔni* ‘dancer’, -*ɔnija*:
pohɔnija ‘domestic’, *bilɔnija* ‘One who distributes food at a feast’ -*ɔruwa*: *dekerua* ‘fully
developed into youth or adult’, *batɔruwa* ‘pedestrian’, -*al*: *rɔxal* ‘juicy’, *zipal* ‘moist’, *eral*
‘a tether’, -*ahi*: *sɔlahi* ‘deceiving’, *mɔdahi* ‘drunkard’, ‘wickedness’, -*ija*: *paharija*
‘hilly’, *d^hulija* ‘A drummer’, -*ua*: *g^hɔrua* ‘domestic’, *bihuwa* ‘A male who performs
Bihu’, -*uwal*: *pahuwal* ‘fat, plump’, *g^hatowal* ‘A ferryman’.

From the above sections, we see that the number of suffixes that results derivatives of more than one category and the number of suffixes that get attached to bases of more than one category is more than the suffixes that are restricted to only one category.

Again, some of the suffixes result in derivatives of more than one word class, but are attached only to the bases of one word class. -*ɔnija*, -*ɔruwa*, -*ua* belong to this category. The suffixes -*ɔna* and -*ami* produce derived words of one class, but are attached to the bases of more than one class. Again, there are only two suffixes -*alu* and -*aru* which form derivatives of one word class, while getting attached to only one class of bases. While -*alu* is attached to nominal bases and forms adjective derivatives, -*aru* is attached to verbal bases and forms nominal derivatives.

Other than these eight suffixes, the rest seven suffixes fall in the category which are flexible in both ends, i.e., they are attached to bases and produce derivatives of more than one word class. -*ɔk*, -*ɔn*, -*ɔti*, -*ɔni*, -*al*, -*ahi* and -*ija* belong to this category.

2 types of bases – 2 types of derivatives: *-ɔk, -ɔn, -ɔti, -ɔni, -al, -ahi, -ija*

1 type of bases – 1 type of derivatives: *-alu, -aru*

1 type of bases – 2 types of derivatives: *-ɔnija, -ɔruwa, -ua, -ual*

2 types of bases – 1 type of derivatives: *-ɔna, -ami*

Sample A:

After arranging the suffixes in descending order according to their total number of types, tokens and hapaxes in Table 5.4, in the following tables, the suffixes are highlighted in different tables based on their categorial selection of bases as well as their resultant derivatives, to call attention to their ranking position among others. While doing this, in each table, the suffixes are highlighted in Type, Token and Hapax sections separately. Table 6.2 highlights those suffixes that only form nominal category words. Table 6.3 highlights the suffixes that form only adjectival words. Table 6.4 highlights the suffixes that form words of both categories, i.e., nominal as well as adjectival words. On the other hand, Table 6.5 highlights the suffixes that are attached to only nominal bases, Table 6.6 highlights the suffixes that are attached only to verbal bases and Table 6.7 highlights the suffixes that are attached to both nominal and verbal bases. At last, Table 6.8 highlights all those suffixes together that are open to creating words of more than one class, i.e., nominal and adjectival derivatives and the suffixes that can be attached to bases of more than one class, i.e., nominal and verbal bases.

Table 6.2 Highlighted suffixes that result in only Noun derivatives

<i>Sl</i>	<i>Type</i>	<i>Token</i>	<i>Hapax</i>
1	-ia (110)	-ɔn (459)	-ia (71)
2	-ɔn (84)	-ia (418)	-ɔn (37)
3	-ɔni (48)	-ɔk (220)	-ɔni (22)
4	-ɔk (41)	-ɔna (193)	-ɔk (17)
5	-ɔna (28)	-ɔni (159)	-ɔna -ua (7)
6	-ua (14)	-ua (51)	-ɔti (5)
7	-ɔti (8)	-al (19)	-al (2)
8	-al (7)	-ɔti (17)	-ami -ɔnija -ɔruwa (1)
9	-ɔnija (5)	-ɔnija (14)	-aru, -alu -ahi, -uwal (0)
10	-ami (3)	-ami (4)	
11	-ɔruwa, -aru -uwal (1)	-aru, - ual (2)	
12	-alu, - ahi (NIL)	-ɔruwa (1)	
13		-alu, -ahi (NIL)	

Table 6.3 Highlighted suffixes that result in only Adjective derivatives

<i>Sl</i>	<i>Type</i>	<i>Token</i>	<i>Hapax</i>
1	-ia (110)	-ɔn (459)	-ia (71)
2	-ɔn (84)	-ia (418)	-ɔn (37)
3	-ɔni (48)	-ɔk (220)	-ɔni (22)
4	-ɔk (41)	-ɔna (193)	-ɔk (17)
5	-ɔna (28)	-ɔni (159)	-ɔna -ua (7)
6	-ua (14)	-ua (51)	-ɔti (5)
7	-ɔti (8)	-al (19)	-al (2)
8	-al (7)	-ɔti (17)	-ami -ɔnija -ɔruwa (1)
9	-ɔnija (5)	-ɔnija (14)	-alu, -aru, -ahi, - uwal (0)
10	-ami (3)	-ami (4)	
11	-ɔruwa, -aru -uwal (1)	-aru, - ual (2)	
12	-alu, - ahi (0)	-ɔruwa (1)	
13		-alu, -ahi (0)	

Table 6.4 Highlighted suffixes that result in both Noun and Adj derivatives

<i>Sl</i>	<i>Type</i>	<i>Token</i>	<i>Hapax</i>
1	-ia (110)	-ɔn (459)	-ia (71)
2	-ɔn (84)	-ia (418)	-ɔn (37)
3	-ɔni (48)	-ɔk (220)	-ɔni (22)
4	-ɔk (41)	-ɔna (193)	-ɔk (17)
5	-ɔna (28)	-ɔni (159)	-ɔna -ua (7)
6	-ua (14)	-ua (51)	-ɔti (5)
7	-ɔti (8)	-al (19)	-al (2)
8	-al (7)	-ɔti (17)	-ami -ɔnija -ɔruwa (1)
9	-ɔnija (5)	-ɔnija (14)	-alu -aru, -ahi - -uwal (0)
10	-ami (3)	-ami (4)	
11	-ɔruwa, -aru -uwal (1)	-aru, -uwal (2)	
12	-alu, - ahi (0)	-ɔruwa (1)	
13		-alu, -ahi (0)	

Table 6.5 Highlighted the suffixes that are attached to only Nominal bases

<i>Sl</i>	<i>Type</i>	<i>Token</i>	<i>Hapax</i>
1	-ia (110)	-ɔn (459)	-ia (71)
2	-ɔn (84)	-ia (418)	-ɔn (37)
3	-ɔni (48)	-ɔk (220)	-ɔni (22)
4	-ɔk (41)	-ɔna (193)	-ɔk (17)
5	-ɔna (28)	-ɔni (159)	-ɔna -ua (7)
6	-ua (14)	-ua (51)	-ɔti (5)
7	-ɔti (8)	-al (19)	-al (2)
8	-al (7)	-ɔti (17)	-ami -ɔnija -ɔrua (1)
9	-ɔnija (5)	-ɔnija (14)	-alu, - -aru, -ahi, -ual (0)
10	-ami (3)	-ami (4)	
11	-ɔruwa, -aru -uwal (1)	-aru, -ual (2)	
12	-alu, -ahi (0)	-ɔruwa (1)	
13		-alu, -ahi (0)	

Table 6.6 Highlighted the suffixes that are attached to only Verbal bases

<i>Sl</i>	<i>Type</i>	<i>Token</i>	<i>Hapax</i>
1	-ia (110)	-ɔn (459)	-ia (71)
2	-ɔn (84)	-ia (418)	-ɔn (37)
3	-ɔni (48)	-ɔk (220)	-ɔni (23)
4	-ɔk (41)	-ɔna (193)	-ɔk (17)
5	-ɔna (28)	-ɔni (159)	-ɔna -ua (7)
6	-ua (14)	-ua (51)	-ɔti (5)
7	-ɔti (8)	-al (19)	-al (2)
8	-al (7)	-ɔti (17)	-ami -ɔnija -ɔruwa (1)
9	-ɔnija (5)	-ɔnija (14)	-alu, -aru -ahi, -ual (0)
10	-ami (3)	-ami (4)	
11	-ɔruwa, -aru -uwal (1)	-aru -ual (2)	
12	-alu, -ahi (0)	-ɔruwa (1)	
13		-alu, -ahi (0)	

Table 6.7 Highlighted the suffixes that are attached to both Nominal and Verbal bases

<i>Sl</i>	<i>Type</i>	<i>Token</i>	<i>Hapax</i>
1	-ia (110)	-ɔn (459)	-ia (71)
2	-ɔn (84)	-ia (418)	-ɔn (37)
3	-ɔni (48)	-ɔk (220)	-ɔni (22)
4	-ɔk (41)	-ɔna (193)	-ɔk (17)
5	-ɔna (28)	-ɔni (159)	-ɔna -ua (7)
6	-ua (14)	-ua (51)	-ɔti (5)
7	-ɔti (8)	-al (19)	-al (2)
8	-al (7)	-ɔti (18)	-ami -ɔnija -ɔruwa (1)
9	-ɔnija (5)	-ɔnija (14)	-alu, -aru, -ahi, -ual (0)
10	-ami (3)	-ami (4)	
11	-ɔruwa, -aru -uwal (1)	-aru, -ual (2)	
12	-alu, -ahi (0)	-ɔruwa (1)	
13		-alu, -ahi (0)	

Table 6.8 Highlighted the suffixes of more than one word-class
(Derivatives and Bases)

<i>Sl</i>	<i>Type</i>	<i>Token</i>	<i>Hapax</i>
1.	-ija (110)	-ɔn (459)	-ija (71)
2.	-ɔn (84)	-ija (418)	-ɔn (37)
3.	-ɔni (48)	-ɔk (220)	-ɔni (22)
4.	-ɔk (41)	-ɔna (193)	-ɔk (17)
5.	-ɔna (28)	-ɔni (159)	-ɔna (7) -ua (7)
6.	-ua (14)	-ua (51)	-ɔti (5)
7.	-ɔti (8)	-al (19)	-al (3)
8.	-al (7)	-ɔti (17)	-ami -ɔnija -ɔruwa (1)
9.	-ɔnija (5)	-ɔnija (14)	-alu, -aru, -ahi, -uwal (0)
10.	-ami (3)	-ami (4)	
11.	-ɔruwa -aru, -uwal (1)	-aru, -uwal (2)	
12.	-alu, -ahi (0)	-ɔruwa (1)	
13.		-alu, -ahi (0)	

From derivative tables, we observe that the pure nominal suffixes *-ami* and *-aru* occupy the lower position, whereas *-ɔna* occupies somewhat the middle rank (Table 6.2). The only pure adjectival suffix *-alu* has no instances in the corpus sample and hence automatically comes to the lowest position (Table 6.3). On the other hand, when it comes to the suffixes that result in both, the rest of them show mixed occupancy, i.e., they are distributed from the upper to lower position in the ladder (Table 6.4).

When it comes to bases, *-ua* has the medial position that is attached only to the nominal bases, while another suffix that is also attached only to nominal bases *-ɔruwa* is from the lower strata (Table 6.5). In case of the suffixes which are attached only to verbal bases, *-ɔnija* and *-aru* can be observed relatively in lower rank (Table 6.6). However, in the case of the suffixes which get attached to both nominal and verbal bases, except *-alu* and *-ahi* have no instances in the corpus, others are ranked from top to medial positions (Table 6.7).

From the overall ranking of the suffixes, it is noticed that all the suffixes which are open to more than one class in terms of forming derivatives and in terms of the word class of the bases, are relatively from the upper position of the hierarchy for types, tokens and hapax. It hints that the suffixes with non-restricted word-class have tendencies to produce more words than the suffixes restricted to only one word-class.

Sample B

Now, let us examine the suffixes from the dictionary sample below. The table 6.9 and Table 6.10 highlight the suffixes based on their derivative categories. Table 6.9 shows the purely nominal suffixes, adjectival suffixes as well as the suffixes that form words both in the 2006 edition of Hemkosh. On the other hand, Table 6.10 highlights purely nominal suffixes, adjectival suffixes as well as the suffixes that produce both the word classes in the 2016 edition of Hemkosh. Again, Table 6.11 and Table 6.12 show the ranking of the suffixes based on their base-category. Table 6.11 displays the suffixes that are attached to only nominal bases, verbal bases as well as the suffixes that are attached to both kinds of bases in the 2006 edition of Hemkosh. Table 6.12 highlights the suffixes that are attached to only nominal bases, and verbal bases as well as the suffixes that are attached to both kinds of bases in the 2016 edition of Hemkosh.

Table 6.9 Highlighted suffixes based on their derivative class in 2006 edition

Sl. No.	<i>Noun Derivative</i>	<i>Adj Derivative</i>	<i>Noun and Adjective Derivative</i>
1.	-ia (783)	-ia (783)	-ia (783)
2.	-on (456)	-on (456)	-on (456)
3.	-oni (371)	-oni (371)	-oni (371)
4.	-ok (231)	-ok (231)	-ok (231)
5.	-uwa (159)	-uwa (159)	-uwa (159)
6.	-ona (49)	-ona (49)	-ona (49)
7.	-al (36)	-al (36)	-al (68)
8.	-onija (21)	-onija (21)	-onija (21)
9.	-oti (17)	-oti (17)	-oti (17)
	-oruwa (7)	-oruwa (7)	-oruwa (7)

Table 6.10 Highlighted suffixes based on their derivative class in 2016 edition

Sl. No.	<i>Noun Derivative</i>	<i>Adj Derivative</i>	<i>Noun and Adjective Derivative</i>
1.	-ia (823)	-ia (823)	-ia (823)
2.	-on (586)	-on (586)	-on (586)
3.	-oni (390)	-oni (390)	-oni (390)
4.	-ok (315)	-ok (315)	-ok (315)
5.	-uwa (167)	-uwa (167)	-uwa (167)
6.	-ona (59)	-ona (59)	-ona (59)
7.	-al (38)	-al (38)	-al (38)
8.	-onija (21)	-onija (21)	-onija (21)
9.	-oti (19)	-oti (19)	-oti (19)

	-aru, -ami (6)	-aru, -ami (6)	-aru, -ami (6)
10.	-alu, -ahi (4)	-alu, -ahi (4)	-alu, -ahi (4)
11.	-uwal (3)	-uwal (3)	-uwal (3)

10.	-alu (12)	-alu (12)	-alu (12)
11.	-ami -uwal (8)	-ami (8), -uwal (8)	-ami (8), -uwal (8)
12.	-oruwa (7)	-oruwa (7)	-oruwa (7)
13.	-aru (6)	-aru (6)	-aru (6)
	-ahi (4)	-ahi (4)	-ahi (4)

Table 6.11 Highlighted suffixes according to their base class in 2006 edition

Sl. No.	Noun base	Verbal base	Noun and verbal base
1.	-ia (783)	-ia (783)	-ia (783)
2.	-on (456)	-on (456)	-on (456)
3.	-oni (371)	-oni (371)	-oni (371)
4.	-ok (231)	-ok (231)	-ok (231)
5.	-uwa (159)	-uwa (159)	-uwa (159)
6.	-ona (49)	-ona (49)	-ona (49)
7.	-al (36)	-al (36)	-al (36)
8.	-onija (21)	-onija (21)	-onija (21)
9.	-oti (17)	-oti (17)	-oti (17)
10.	-oruwa (7)	-oruwa (7)	-oruwa (7)
11.	-aru, -ami (6)	-aru, -ami (6)	-aru, -ami (6)
12.	-alu, -ahi (4)	-alu, -ahi (4)	-alu, -ahi (4)
13.	-uwal (3)	-uwal (3)	-uwal (3)

Table 6.12 Highlighted suffixes according to their base class in 2016 edition

Sl. No.	Noun base	Verbal base	Noun and verbal base
1.	-ia (823)	-ia (823)	-ia (823)
2.	-on (586)	-on (586)	-on (586)
3.	-oni (390)	-oni (390)	-oni (390)
4.	-ok (315)	-ok (315)	-ok (315)
5.	-uwa (167)	-uwa (167)	-uwa (167)
6.	-ona (59)	-ona (59)	-ona (59)
7.	-al (38)	-al (38)	-al (38)
8.	-onija (21)	-onija (21)	-onija (21)
9.	-oti (19)	-oti (19)	-oti (21)
10.	-alu (12)	-alu (12)	-alu (12)
11.	-ami -uwal (8)	-ami -uwal (8)	-ami (8) -uwal (8)
12.	-oruwa (7)	-oruwa (7)	-oruwa (7)
13.	-aru (6)	-aru (6)	-aru (6)
	-ahi (4)	-ahi (4)	-ahi (4)

Here also, *-ami* and *-aru* which are the only noun forming suffixes can be seen in the lower rank in both the editions, while *-ona* is in the middle position (table 6.9 and table 6.10); *-alu*, which is the only adjective forming suffix is also somewhat towards the lower strata (table 6.9 and table 6.10). On the other hand, the remaining suffixes of the third column (table 6.9 and table 6.10) can be seen in a mixed manner in the hierarchy.

In terms of bases, for nouns, *-uwa* is from the medial position, while *-oruwa*, and *-alu* are from the lower position. Similarly, in verbal bases, *-onija* and *-aru* belong to the lower part of the ladder. In terms of the suffixes which can be attached to both noun and

verbal bases, the suffixes can be seen from both ends in both editions of the sample B (table 6.11 and table 6.12).

Now, we can see a similarity in ranking of suffixes between sample A and sample B:

Nominal derivatives: In both the samples, among the three solely nominal suffixes, *-aru* and *-ami* are from the lower ranking.

Adjectival derivatives: However, *-alu* does not appear in sample A, because of which its ranking goes automatically towards the end. It contains only twelve types in sample B, which places it in the fifth position from the bottom.

Nominal and adjectival derivatives: The majority of the suffixes belong to this category and they show mixed distribution, i.e., they are scattered in both the upper and lower ranks in both the samples. However, most of them are particularly from the upper rank.

Nominal bases: In both the samples, *ɔruwa* and *-alu* are placed towards the end with the exception of *-uwa* which is situated relatively towards the higher stratum.

Verbal bases: Cases of bases also exhibit similarity. Both the samples exhibit that *-ɔnija* and *-aru* are positioned towards the end.

Nominal and verbal bases: In the case of the suffixes that get attached to both nominal and verbal bases, suffixes are from both the ends in the samples. While *-ia* is from the top position, *-ahi* belongs to the last placing the other suffixes in between.

Adjectival and nominal bases: The only suffix *-ami* is in the lower rank.

The general conclusion that can be drawn from the preceding finding is that there are more suffixes that are open to more than one word classes than those that are restricted to just one class of derivatives and bases. Not only are there more suffixes, but there is also a higher number of types, tokens, and hapaxes associated with those suffixes. It suggests that the suffixes with flexible categorial selection are more likely to be employed when creating new words.

Again, if we concentrate on the suffix frequency based on a single class, i.e., the adjectival suffix frequency and the nominal suffix frequency, another dimension may reveal. If the suffixes are firmly divided into two categories save for *-ɔna*, *-aru* and *-ami*,

all other suffixes are adjectival suffixes, and all other suffixes except *-alu* are nominal suffixes as well. This way, we arrive at the following results:

6.2 Number of Noun types and Adjective types formed by each suffix

Among the fifteen suffixes, except *-ɔna*, *-alu*, *-aru* and *-ami*, all other suffixes produce words from both nominal and adjectival categories. However, a few of them are more inclined towards one particular category, hence resulting in more words in that category than the other. When we loosely divide the suffixes depending on word-class, i.e., ‘Noun types’ and ‘Adjective type’, any suffix that produces words from any of these categories will fall under the respective category. This way, we get fourteen suffixes in ‘Noun’ category (Except *-alu* which is an adjectival suffix only, all others) and twelve suffixes in ‘Adjective’ category excluding *-ɔna*, *-aru* and *-ami*, which are purely nominal suffixes. The productivity of a suffix may vary depending on whether it is a nominal or adjectival suffix.

Sample A:

Let us look into this empirically from the samples. Table 6.13 lists the number of ‘noun’ types and ‘adjective’ types against each suffix, and Table 6.14 arranges the suffixes in descending order.

Table 6.13 The number of nominal and adjectival derivatives formed by each suffix

<i>Suffixes</i>	<i>Total Noun Types</i>	<i>Total Adj Types</i>	<i>Total Types</i>
-ɔk	31	10	41
-ɔn	84	0	84
-ɔna	28	-	28
-ɔti	3	5	8
-ɔni	46	2	48
-ɔnija	0	5	5
-ɔruwa	0	1	1

-al	1	6	7
-alu	-	0	-
-aru	1	-	1
-ami	3	-	3
-ahi	0	0	-
-ija	6	104	110
-ua	5	9	14
-uwal	0	1	1

Table 6.14 Hierarchy of the suffixes on descending order based on Table 4.15

SL	Noun Types	Adjective Types
1.	-on (84)	-ija (104)
2.	-oni (46)	-ok (10)
3.	-ok (31)	-ua (9)
3.	-ona (28)	-al (6)
4.	-ija (6)	-oti (5), -onija (5)
5.	-ua (5)	-oni (2)
6.	-oti (3), -ami (3)	-oruwa, -uwal (1)
7.	-al, -aru (1)	-on, -ona, -aru, -ami (0)
8.	-onija, -oruwa, -uwal (0)	-alu, -ahi (-)
9.	-alu, -ahi (-)	

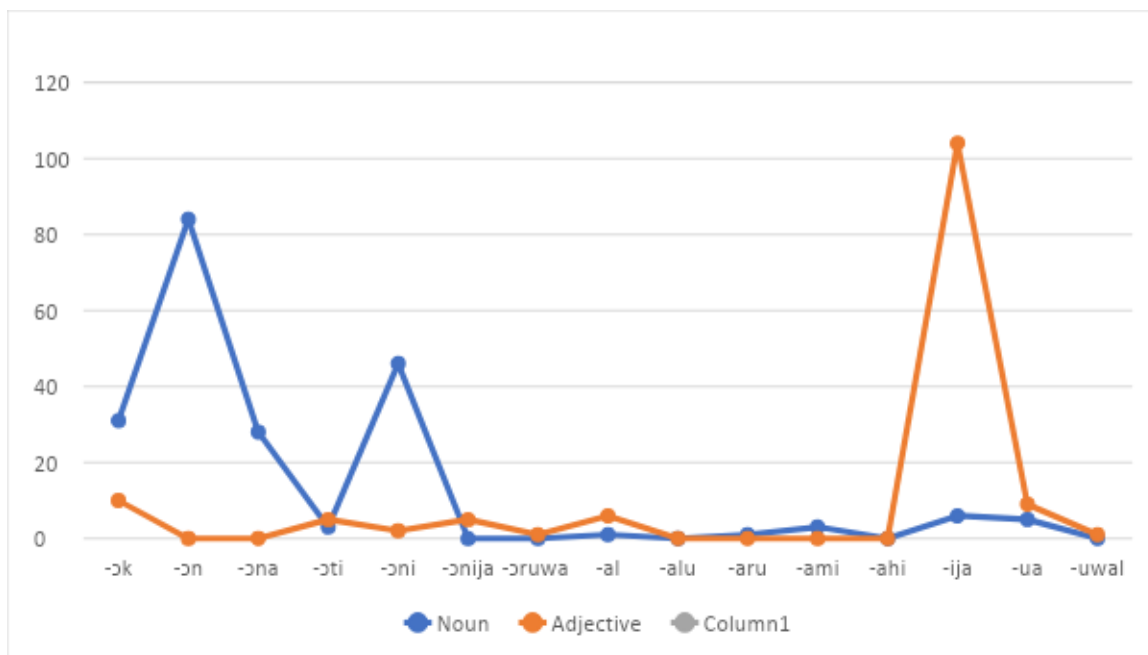


Fig 6.1 The number of nominal and adjectival derivatives for each suffix in sample A

In sample A, if the suffixes *-נא*, *-ארו* and *-אמי* are kept aside, as they produce only nominal derivatives, the suffixes *-כ*, *-נ* and *-ני* generate more nominal words than adjective terms. On the other hand, the suffixes *-תי*, *-ניא*, *-רווא* *-אל*, *-יא*, *-וא* and *-ואל* produce more adjective words than nouns. Amongst them, *-יא* creates significantly a higher proportion of adjectives than nouns, it is the most productive adjective suffix, whereas the most productive suffix among the nominal suffixes is *-נ*, followed by *-ני* and *-כ*.

Sample B:

As sample B consists of words from two editions of Hemkosh, we have shown the number of ‘noun’ types and ‘adjective’ types for each suffix in each edition. While Table 6.15 lists the number of noun and adjective types of the 2006 edition of Hemkosh, Table 6.17 arranges them in descending order to show their hierarchy. On the other hand, Table 6.16 records the number of noun and adjective types in the 2016 edition of Hemkosh and Table 6.18 displays them in descending order.

Table 6.15 The number of nominal and adjectival derivatives formed by each suffix in 2006 (Sample B)

<i>Suffixes</i>	<i>Total Noun</i>	<i>Total Adj</i>	<i>Total Types</i>
-ok	172	59	231
-on	430	26	456
-ona	49	-	49
-oti	13	4	17
-oni	364	7	371
-onija	6	15	21
-oruwa	1	7	7
-al	9	27	36
-alu	-	4	4
-aru	6	-	6
-ami	6	-	6
-ahi	-	4	4
-ija	97	686	783
-ua	33	126	159
-uwal	4	1	3

Table 6.16 The number of nominal and adjectival derivatives formed by each suffix in 2016 (sample B)

<i>Suffixes</i>	<i>Total Noun</i>	<i>Total Adj</i>	<i>Total Types</i>
-ok	235	80	315
-on	552	34	586
-ona	55	4	59
-oti	15	6	21
-oni	380	10	390
-onija	6	15	21
-oruwa	1	7	7
-al	10	28	38
-alu	0	12	12
-aru	6	0	6
-ami	8	0	8
-ahi	0	4	4
-ija	119	704	823
-ua	38	129	167
-uwal	5	3	8

Table 6.17 Hierarchy of the suffixes in descending order based on Table 6.15 (Sample B)

Sl	<i>Noun</i>	<i>Adjective</i>
1.	-on (430)	-ija (686)
2.	-oni (364)	-ua (126)
3.	-ok (172)	-ok (59)
4.	-ija (97)	-al (27)
5.	-ona (49)	-on (26)
6.	-ua (33)	-onija (15)
7.	-oti (13)	-oni, -oruwa (7)
8.	-al (9)	-oti, -alu, -ahi (4)

Table 6.18 Hierarchy of the suffixes on descending order based on Table 6.16 (Sample B)

Sl.	<i>Noun</i>	<i>Adjective</i>
1.	-on (552)	-ija (704)
2.	-oni (380)	-ua (129)
3.	-ok (235)	-ok (80)
4.	-ija (119)	-on (34)
5.	-ona (55)	-al (28)
6.	-ua (38)	-onija (15)
7.	-oti (15)	-alu (12)

9.	-oniija, -aru, -ami (6)	-uwal (1)
10.	-uwal (4)	-ona, -aru, -ami (0)
11.	-oruwa (1)	
12.	-alu, -ahi (0)	

8.	-al (10)	-oni (10)
9.	-ami (8)	-oruwa (7)
10.	-oniija (7)	-oti (6)
11.	-aru (6)	-ona (4), -ahi (4)
12.	-uwal (5)	-uwal (3)
13.	-oruwa (1)	-aru (0), -ami (0)
14.	-alu (0), -ahi (0)	

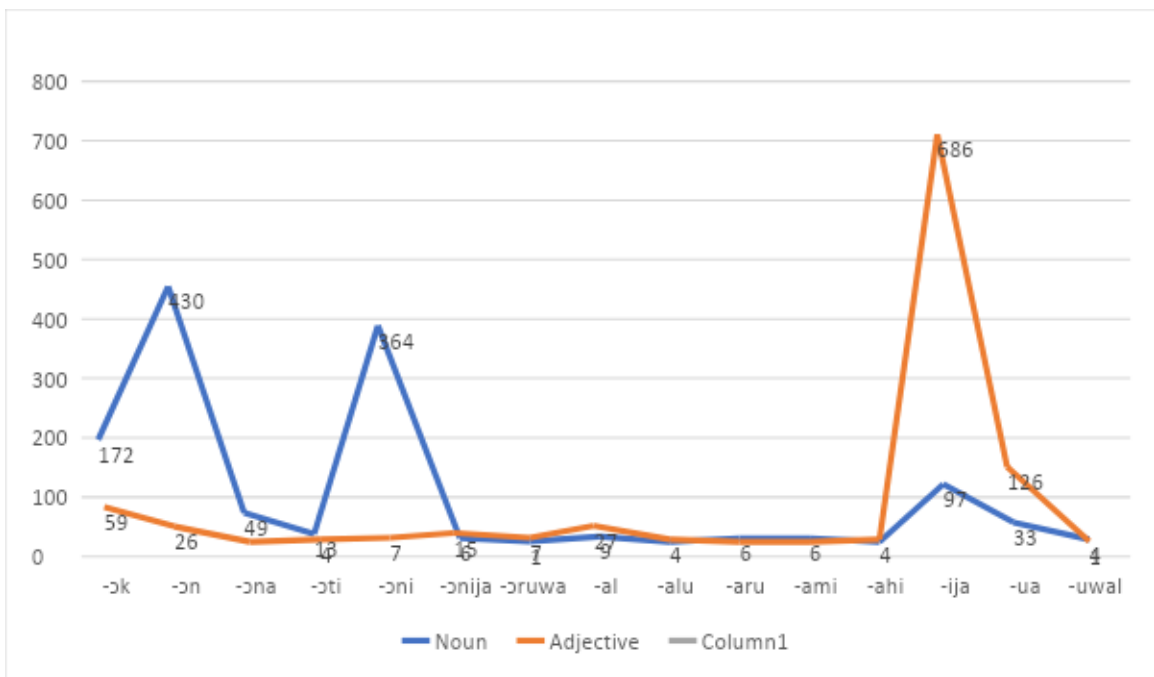


Fig 6.2 The number of nominal and adjectival derivatives for each suffix in 2006 (sample B)

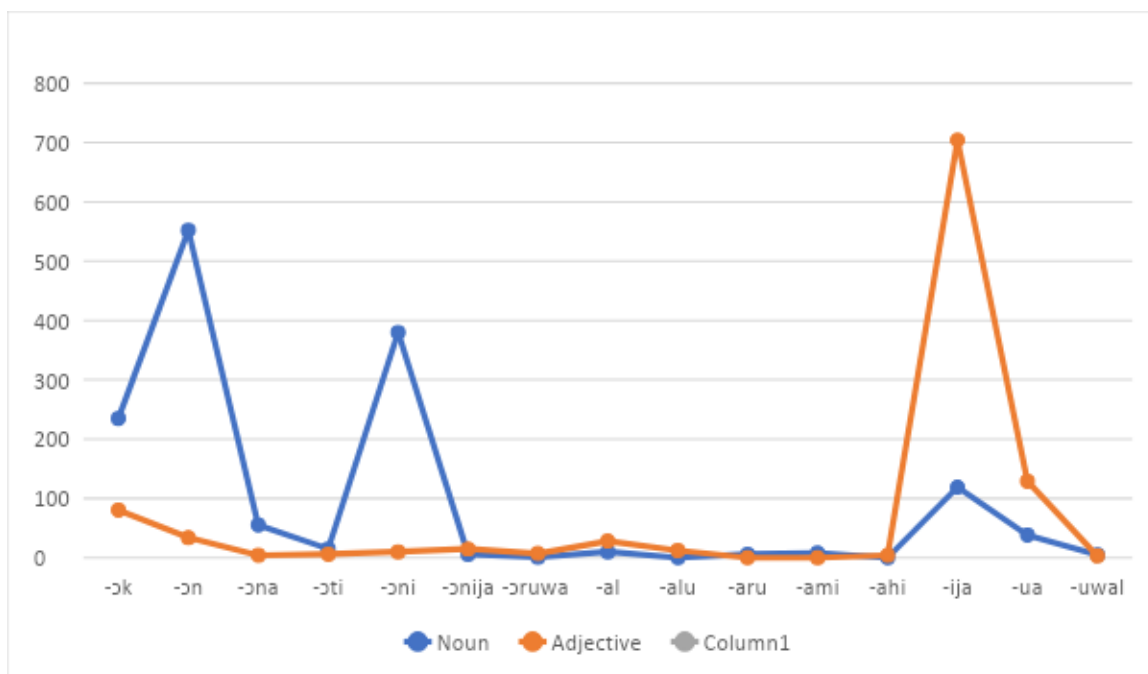


Fig 6.3 The number of nominal and adjectival derivatives for each suffix in 2016 (sample B)

In sample B, the increase of word numbers from 2006 to 2016 has slightly influenced the ranking of the suffixes within the particular word-class, however, the number of total words remained same for *-ɔnija*, *-ɔruwa* and *-ahi*. In both editions of the samples, *-ɔk*, *-ɔn*, *-ɔti*, *-ɔni* and *-uwal* have more nouns than adjectives and *-ɔnija*, *-ɔruwa*, *-al*, *-ahi*, *-ija* and *-uwa* have more adjectives than nouns. Amongst them, *-ɔn* is the most productive nominal suffix and *-ija* is the most productive as an adjective suffix.

By comparing the two samples, we see that while *-ɔti* has more adjectives than noun in sample A, it has more nouns than adjectives in sample B. Other than this suffix, in both samples, similar suffixes show similar productivity rates. While *-ija* turns out as the most productive adjective suffix in both the editions and *-ɔn* is the most productive nominal suffix among others. The suffixes *-ɔk*, *-ɔn*, *-ɔni* have more nominal words in both samples and the suffixes *-ɔnija*, *-ɔruwa*, *-al*, *-uwa* have a greater number of adjective derivatives.

Again, while trying to arrange the suffixes depending on their productivity rate in ‘Noun’ suffix and ‘Adjective’ suffix categories in descending order, we arrive at the result shown in Table 6.14 (Sample A), Table 6.17 and Table 6.18 (sample B). In both samples, the same suffixes are found to be productive in similar rates, i.e., the suffixes

which are productive as nominal or adjective suffix in sample A are the same suffixes which are also productive in sample B as nominal or adjectival suffixes.

The suffixes that are exclusively used to create words of one category, such as *-ɔna*, *-aru* and *-ami*, which are solely nominal suffixes, and *-alu*, which is solely an adjectival suffix, supposed to be more productive categorically. However, both samples refute this supposition. In actuality, these suffixes include a relatively small number of words less than the average for all other suffixes. Although primarily an adjectival suffix *-alu* has no recorded words in sample A, and only 4 and 12 words in the 2006 and 2016 editions respectively in sample B. The number of derivatives for the pure nominal suffixes *-aru* and *-ami* is similarly not very great, with 1 and 3 in sample A. *-aru* and *-ami* have 6 types in the 2006 edition and 6 and 8 types respectively in the 2016 edition of sample B. However, *-ɔna* is medially productive in both the samples.

When attempting to identify the most prevalent or productive adjectival and nominal suffixes, we find that the most productive ones are those that are loosely restricted to more than one class, even though the weight of their derivatives may be greater for some classes. As an illustration, in sample A, the suffix *-ija* contains 104 adjectival derivatives but only 6 noun derivatives. *-ija* has 686 adjectival derivatives and 97 nominative derivatives in the 2006 edition, 704 adjectival derivatives and 119 nominative derivatives in sample B. The stark contrast between adjectival and nominal usage may suggest that the suffix *-ija* must be a typical adjectival suffix. Similar to this, sample A records only 10, 0, and 2 adjectival derivatives for the productive nominal suffixes *-ɔk*, *-ɔn*, and *-ɔni* against 31, 84, and 46 nominal derivatives. In sample B, the same suffixes record 172, 430, 364 nominal derivatives against 59, 26 and 7 adjectival derivatives in 2006 ed. and 235, 552, and 380 nouns in contrast to 80, 34, and 10 adjectives in 2016 ed., respectively. This leads us to believe that these three suffixes are most likely the prototypical nominal suffixes. Though the number is modest, even if we classify them as archetypal adjectival or nominal suffixes, they nevertheless permit derivatives of other classes. This finding suggests that the most productive adjectival and nominal suffixes are typically those that are applicable to several classes. On the other hand, suffixes that are limited to only one tend to produce fewer words and are

consequently less common or productive. The reason could be that when creating new words, speakers or creators are prone to select options that adhere to fewer rules. One more thing to note is that the suffixes that are categorically demonstrated to be productive are also those that are typically productive among the other suffixes.

6.3 Competing suffixes

There are several suffixes that are phonologically different from each other, but they result in words of similar kinds. They are attached to similar kinds of bases and produce similar category words. These are called competing affixes, which are different affixes with the same meaning and domain of application (Booij, 2012). A few suffixes function as feminine suffixes, agentive suffixes, and help to create words that are expressive in the language. Eight of the fifteen suffixes, including *-ɔk*, *-ɔti*, *-ɔni*, *-aru*, *-ahi*, *-ija*, *-ua*, and *-uwal*, also result in words that indicate agency. In addition to other word types, the suffixes *-ɔti* and *-ɔni* are used to indicate a few nouns as feminine. Again, a few suffixes are employed in creating expressive words of the language. A few expressive words are formed with the suffixes *-ɔni* and *-ija*.

6.3.1 Agentive markers

Agent means someone or something which does or performs an action. In Assamese, agentive nouns can be formed two ways, one by attaching an agentive suffix to a verbal root and another one is by attaching an agentive suffix to a nominal base.

Verbal agentive:

- [[*pɔr^h* ‘to read’]_V *uɔi*]_N → *pɔrhuoi* ‘A reader’
- [[*ga* ‘to sing’]_V *ɔk*]_N → *gajɔk* ‘A singer’
- [[*xik* ‘to learn’]_V *aru*]_N → *xikaru* ‘A learner’
- [[*zuz* ‘to fight’]_V *aru*]_N → *zuzaru* ‘A fighter’
- [[*bɔga* ‘to climb’]_V *ua*]_N → *bɔgua* ‘A climber’

Nominal agentive:

- [[*pat^h* ‘lesson’]_N *ɔk*]_N → *pat^hɔk* ‘reader’
- [[*xohai* ‘help’]_N *ɔk*]_N → *xohaijɔk* ‘helper’
- [[*krixixi* ‘agriculture’]_N *ɔk*]_N → *krixɔk* ‘Farmer’

[[*bihu*²⁷]_N *ua*]_N → *bihua* ‘A Bihu dancer’

[[*rɔn* ‘fight’]_N *ua*]_N → *rɔnuɑ* ‘A fighter’

Let us check their distribution in the corpus in terms of type, token and hapax:

The Agentive suffixes: *-ɔk*, *-ɔti*, *-ɔni*, *-aru*, *-ahi*, *-ija*, *-ua*, *-uwal*

Sample A:

Table 6.19 Number of Agentive Type, Token and Hapaxes in Sample A

<i>Sl</i>	<i>Suffixes</i>	<i>Type</i>	<i>Token</i>	<i>Hapax</i>
1.	<i>-ɔk</i>	26	114	12
2.	<i>-ɔti</i>	-	-	-
3.	<i>-ɔni</i>	2	2	2
4.	<i>-aru</i>	1	2	0
5.	<i>-ahi</i>	-	-	-
6.	<i>-ija</i>	1	1	1
7.	<i>-ua</i>	4	4	4
8.	<i>-uwal</i>	-	-	-

Table 6.20 Suffixes on descending order based on Table 6.19

<i>Sl</i>	<i>Type</i>	<i>Token</i>	<i>Hapax</i>
1	<i>-ɔk</i> (26)	<i>-ɔk</i> (114)	<i>-ɔk</i> (12)
2	<i>-ua</i> (4)	<i>-ua</i> (4)	<i>-ua</i> (4)
3	<i>-ɔni</i> (2)	<i>-ɔni</i> , <i>-aru</i> (2)	<i>-ɔni</i> (2)
4	<i>-aru</i> , <i>-ija</i> (1)	<i>-ija</i> (1)	<i>-ija</i> (1)
5	<i>-ɔti</i> (-) <i>-ahi</i> (-) <i>-uwal</i> (-)	<i>-ɔti</i> (-) <i>-ahi</i> (-) <i>-uwal</i> (-)	<i>-ɔti</i> (-) <i>-aru</i> (0) <i>-ahi</i> (-) <i>-uwal</i> (-)

We have already found that *-ahi* does not register any words in Sample A. Again, the suffixes *-ɔti* and *-uwal* do not have any agentive words in the sample. Besides these three suffixes, the other suffixes *-ɔk*, *-ɔni*, *-aru*, *-ija* and *-ua* have a few agentive nouns in the corpus sample. Among these we can see that *-ɔk* has the highest number of agentive nouns in the sample A.

²⁷ Bihu is an Assamese harvest festival which traditionally celebrates the change of seasons

Sample B:

Table 6.21 Number of Agentive Types in 2006 ed. (sample B)

Sl	Suffixes	Type
1.	<i>-ək</i>	172
2.	<i>-əti</i>	9
3.	<i>-əni</i>	9
4.	<i>-aru</i>	6
5.	<i>-ahi</i>	1
6.	<i>-ija</i>	17
7.	<i>-ua</i>	12
8.	<i>-uwal</i>	1

Table 6.22 Suffixes on descending order based on Table 6.21

Sl	Type
1	<i>-ək</i> (172)
2	<i>-ija</i> (17)
3	<i>-ua</i> (12)
4	<i>-əti, -əni</i> (9)
6	<i>-aru</i> (6)
7	<i>-ahi</i> (1)
8	<i>-uwal</i> (1)

Table 6.23 Number of Agentive Types in 2016 ed. (sample B)

Sl	Suffixes	Type
1.	<i>-ək</i>	222
2.	<i>-əti</i>	10
3.	<i>-əni</i>	9
4.	<i>-aru</i>	6
5.	<i>-ahi</i>	1
6.	<i>-ija</i>	18
7.	<i>-ua</i>	12
8.	<i>-uwal</i>	1

Table 6.24 Suffixes on descending order based on Table 6.23

Sl	Type
1	<i>-ək</i> (222)
2	<i>-ija</i> (18)
3	<i>-ua</i> (12)
4	<i>-əti</i> (10)
5	<i>-əni</i> (9)
6	<i>-aru</i> (6)
7	<i>-ahi</i> (1)
8	<i>-uwal</i> (1)

In both editions of the dictionary in sample B, we see that the number of agentive words is comparatively similar or near to similar with one or two increase in the number except for the suffix *-ək*. *-ək* registers 172 agentive words in 2006 and the number increases to 222 in the 2026 edition. It hints that the function of *-ək* as an agentive suffix has accelerated over the period of ten years.

In Sample A, the agentive noun ending *-ija* has only one type, however in Sample B, it contains 17 and 18 types in the two editions respectively, placing it in the second rank. In Sample B, the agentive noun ending *-uwal* is in the lowest rank, having only 1 type in both editions of the dictionary.

Now, coming to the words formed by the suffixes, except for the suffix *-ɔk*, the other suffixes form agentive words which indicate an animate entity or a person who is involved in certain activities. Most of the agentive words formed by *-ɔti* and *-ɔni* are feminine agentive words and they are attached to both verbal and nominal bases. For example, *boṽɔti* ‘flowing, as a stream’ → *bo* ‘to flow’ + *ɔti* (verbal base), *nasɔni* ‘A dancer’ → *nas* ‘to dance’ + *ɔni* (verbal base), *mɔŋɔlɔti* ‘one who practises divination’ → *mɔŋɔl* ‘a magical work’ + *ɔti* (noun base), *sakɔrɔni* ‘A maid’ → *sakɔr* ‘a servant’ + *ɔni* (noun base). For *ɔni-*, except the word *xad^hɔni* ‘A tax gatherer’ of Sample B, all the agentive words it registers are feminine agentive words. *-aru* and *-uwal* are attached to verbal bases to denote nouns of agency (*xikaru* ‘learner’ → *xik* ‘to learn’ + *aru*, *dakuwal* ‘postman’ → *dal* ‘mail’ + *uwal*) *-ahi*, *-ija* and *-uwa* are attached to both verbal and nominal bases (*mɔdahi* ‘alcoholic person’ → *mɔd* ‘alcohol’ + *ahi*, *d^hulija* ‘a drummer’ → *d^hol* ‘drum’ + *ija*, *bɔnua* ‘a worker’ → *bɔn* ‘work’ + *uwa*). In the case of *-uwal*, most of them are attached to nominal bases and only a few are verbs. (*g^hatowal* ‘a ferryman’ → *g^hat* ‘port’ + *uwal*)

The only suffix *-ɔk* which forms agentive words that comprise both animate and non-animate doers. For example, *awiskarɔk* → *awiskar* ‘to discover’ + *ɔk* means one who discovers something, *k^hetijɔk* → *k^heti* ‘farming’ + *ɔk* means a person who is involved in cultivation and these are animate agents. Again, *ɔpɔtrinɔnaxɔk* → *ɔpɔ* ‘Pre’ + *trinɔ* ‘grass’ + *nax* ‘to destroy’ + *ɔk* meaning weedicide i.e., something which destroys unwanted plants, *urbɔrɔk* → *urbɔr* ‘fertile’ + *ɔk* meaning fertiliser, i.e., a natural or artificial material which is added to soil or plants to promote growth or productivity, are non-animate agents. Certain words can indicate both animate and inanimate agents, which can be understood only from the pragmatic context. For example, *andolɔk* → *andol* ‘to agitate’ + *ɔk* means agitator, i.e., something or someone that puts something into motion. It can mean both a political agitator or a washing machine agitator and, in both cases, they are agents. *ussedɔk* → *used* ‘to abolish’ + *ɔk* meaning an abolisher or an

ejector. If a person abolishes something s/he is a *ussedək* and if a device that causes something to be removed is also called an *ussedək*, such as a vacuum ejector.

Again, a few non-animate doers can be extended from concrete to abstract domains. *binaxək* বিনাশক → *binax* ‘to destroy’ + *ək* which means a destroyer or a killer, it can be a concrete object like a pesticide or it can also mean an abstract entity such as a mental power or force which may annihilate ill-effects of our misdeeds (পাপ বিনাশক শক্তি *pap binaxək xəḳti* ‘A power that eradicates sin’). *prətibəndʰək* প্রতিবন্ধক → *prəti* ‘Pre’ + *bəndʰə* ‘close’ + *ək* meaning an obstructor or a barrier which can be both physical as well as mental.

As can be seen, the inclusion of more than one element may invite a greater number of words under a suffix. The agentive suffix *-ək* has a more flexible domain of agency than the other agentive suffixes as it can be used in both animate and inanimate domains. Perhaps as a result, the suffix *-ək* embraces more agentive words than any other and stands out as the most productive agentive suffix overall.

6.3.2 Feminine markers: *-əṭi*, *-əṇi*

Sample A:

Table 6.25 Number of feminine words in sample A

Sl	Suffixes	Type	Token	Hapax
1.	<i>-əṭi</i>	3	3	3
2.	<i>-əṇi</i>	2	2	2

Table 6.26 Suffixes on descending order based on Table 4.23

Sl	Type	Token	Hapax
1	<i>-əṭi</i>	3	3
2	<i>-əṇi</i>	2	2

Sample B:

Table 6.27 Number of feminine words in 2006 ed. (sample B)

Sl	Suffixes	Type
1.	<i>-əṭi</i>	8
2.	<i>-əṇi</i>	12

Table 6.28 Suffixes in descending order based on Table 6.27

Sl	Type
1	<i>-əṇi</i> (12)
2	<i>-əṭi</i> (8)

Table 6.29 Number of feminine words in 2016 ed. (sample B)

Sl	Suffixes	Type
3.	- <i>ɔti</i>	8
4.	- <i>ɔni</i>	13

Table 6.30 Suffixes on descending order based on Table 6.29

Sl	Type
1	- <i>ɔni</i> (13)
2	- <i>ɔti</i> (8)

The overall number of feminine words for *-ɔti* and *-ɔni* is relatively less in sample A as well as in sample B. In sample A, they have a difference of only one type, token and hapax, while in sample B, *-ɔni* has more types for feminine words than *-ɔti*. The number of types is also same in both editions of the dictionary, except for *kʰjɔtrijani*²⁸ ক্ষত্রিয়ানী ‘A *Kshatriya* woman, the wife of a *Kshatriya*’, which is added in the 2016 edition.

The number of feminine words by these suffixes is less, and the existence of other competing suffixes of the same role in the language might be the possible reason, as the productivity of these suffixes is challenged by their rivalries. If compared, some of those feminine suffixes may turn out to be more productive, which is, however, not under the scope of this study. Assamese has other feminine suffixes such as *-i* (*mami*, *kani*), *-ni* (*Saikiani*, *Borani*), *-ini* (*bag^hini*, *natini*), *-uni* (*suruni*), *-ri* (*kalori*) (Bora, 2004).

We already discussed in 5.1.5 in the previous chapter that *-ɔni* is claimed to have lost its feminine meaning (Kakati, 1995), but we believe that rather than losing its meaning, it has instead become more inclusive. The fact that there are more words ending in *-ɔni* in both samples not only says that it is more productive than *-ɔti*, but also supports our claim.

The suffixes *-ɔti* and *-ɔni* can be employed in the same kind of bases, therefore, certain words with these endings seem to hinder the development of new words for each other. For instance, *bowɔni* বোৱনী → *bɔ* ‘to flow’ + *ɔni* means ‘a woman who weaves for a living’ while *bowɔti* বোৱঁতী → *bɔ* ‘to flow’ + *ɔti* means ‘Flowing, as a stream’. Both words derived from the verb *bɔ* ‘to flow’, which indicate either to flow or to weave.

²⁸ according to the old Varnasrama classification of Hindu society, a man of the second or military class of the society

Although it is difficult to determine which word was created first, it is apparent that the use of the same suffix to construct another word for a distinct concept has been constrained by the existence of one word. As the speakers of the language are already familiar with the feminine nouns ending in *-ɔti*, such as *namɔti* ‘a woman skilled in chanting prayers at a prayer meeting’, *bʰazɔti* ‘a woman who fries or roasts’ → *bʰaz* ‘to fry’ + *ɔti* or *rowɔti* ‘a woman who implants paddy seedlings’ → *ro* ‘to implant’ + *ɔti*; the term *bowɔti* would have been an analogous form for them to construct to signify a female weaver. Again, if *bɔ+ɔti* → *bowɔti* was coined earlier, it was purposefully avoided using the same word to refer to a female weaver later on to reduce confusion. Instead, the word *bowɔni* is created to meet the need, using the suffix *-ɔni*. However, as was already noted, the suffixes are employed in a similar context, which is why we can observe the existence of two distinct words by each suffix for the same concept. Both of these terms, *ro* ‘to implant’ + *ɔti* → *rowɔti* and *ro* ‘to implant’ + *ɔni* → *rowɔni* denote a lady who plants paddy seedlings.

6.3.3 Expressive markers: *-ɔni*, *-ija*

Sample A:

Table 6.31 Number of expressive words in sample A

Sl	Suffixes	Type	Token	Hapax
1.	<i>-ɔni</i>	8	12	5
2.	<i>-ija</i>	14	23	9

Table 6.32 Suffixes on descending order based on Table 4.27

Sl	Type	Token	Hapax
1	<i>-ija</i> (14)	<i>-ija</i> (23)	<i>-ija</i> (9)
2	<i>-ɔni</i> (8)	<i>-ɔni</i> (12)	<i>-ɔni</i> (5)

Sample B:

Table 6.33 Number of expressive words in 2006 ed. (sample B)

Sl	Suffixes	Type
1.	<i>-ɔni</i>	136
2.	<i>-ija</i>	136

Table 6.34 Suffixes on descending order based on Table 6.31

Sl	Type
1	<i>-ɔni</i> , <i>-ija</i> (136)

Table 6.33 Number of expressive words in 2016 ed. (sample B)

Sl	Suffixes	Type
3.	- <i>ɔni</i>	138
4.	- <i>ija</i>	140

Table 6.34 Suffixes on descending order based on Table 6.33

Sl	Type
1	- <i>ija</i> (140)
2	- <i>ɔni</i> (138)

In case of expressive suffixes, there are only two among the fifteen selected suffixes, we can see that the productivity of both the suffixes are not hugely different as such in both samples. In sample A, *-ija* has slightly more types, tokens and hapaxes than *-ɔni*. In sample B, in the 2006 edition of the dictionary, they have the equal number of expressive words and in the 2016 edition, *-ija* has two more expressive words than *-ɔni*.

This gives us reason to think that both the suffixes of Assamese are equally productive as expressive markers. When there are two or more rival suffixes, some of them usually end up being more productive than others. However, in this case, the fact that both expressive suffixes are equally productive suggests that they may have different semantic significance. In spite of the fact that Assamese has several affixes, these two are the only suffixes for expressive markers, and they are the only ones in use. Both are hence productive suffixes since they are frequently utilised to create emotive words in the language. Expressives can be found in the form of onomatopoeic, sense of perception etc. and they belong to different word classes depending on the usage (Sabnam and Nath, 2021). When we look at the semanticity of the prefixes, we realise that these suffixes serve different purposes inside the language, which invites a significant number of different kinds of words for both.

The primary difference between *-ija* and *-ɔni* is that *-ija* forms adjectival expressives and *-ɔni* forms nominal expressives.

<i>tirbirɔni</i> (N)	-	<i>tibirija</i> (Adj)	‘Shining, sparkling’
<i>p^husp^husɔni</i> (N)	-	<i>p^husp^husia</i> (Adj)	‘Whispered, spoken in a low tone of voice’
<i>zikhnikɔni</i> (N)	-	<i>zikhnikija</i> (Adj)	‘twinkled, brilliant, glowing, splendid’

<i>burburɔni</i> (N)	-	<i>burburija</i> (Adj)	‘Small bubbles or froth rising to the surface of water’
<i>k^{hi}ŋk^{hi}ŋɔni</i> (N)	-	<i>k^{hi}ŋk^{hi}ŋija</i> (Adj)	‘Snappish, peevish’

In case of *-ija*, it forms descriptive or attributive expressive words, i.e., it describes the quality of a thing or a situation which are related to sense of perception. It answers how something is and what its type is.

- Example:
- (1) *luŋluŋija rasta* ‘A narrow path’
 - (2) *mati-k^{hi}ini lupt^hupia hoi ase* ‘The soil is in soft semi-solid form’
 - (3) *kiskisia aru liklikija sulik^{hi}ini* ‘The black thin hair’
 - (4) *p^hirp^hirija bɔtah* ‘Slow wind’

Here, in (1), *luŋluŋija* means narrow and it informs us about the type of the road. In (2), we get to know about the condition of the soil by the word *lupt^hupija*, which means sticky, viscid and semi-solid form of mud. These two expressive words describe two entities i.e., about a road and the condition of soil respectively. Again, in (3) *kiskisia* and *liklikija* provide information about the type and quality of hair. While *kiskisia* means dark black hair, *liklikija* means sleeky hair. In (4), *p^hirp^hirija* denotes slow wind.

On the other hand, *-ɔni* forms onomatopoeic expressives which are mostly related to the sense of perception, which means it does not only indicate the vocal imitation of an action, but also means the action itself. Therefore, unlike *-ija* expressive, *-ɔni* expressive can be used independently, as these expressives themselves become an action or activity.

Example: (5) *d^hora xapɔr p^hɔsp^hɔsɔni-ei xar* ‘A kind of snake, not poisonous, threatens others with its hissing sounds.’

(6) *tar penpenɔni xuni amɔni lagise* ‘I am getting bored listening to his annoying talks’

(7) *mɔi durɔr pɔrai xihɔtɔr p^hus^hp^husɔni xunisɔ* ‘I could listen to their whispering sound from afar’

(8) *bisatu dek^hi-ei gat bizbizɔni ut^hise* ‘I am getting the itching sensation by seeing the caterpillar’.

. (9) *tair d^hɔrp^hɔrɔni xuni ami douri ahisilu* ‘We rushed hearing her screaming’

In (5), from the word **p^hõsp^hõsɔni**, we get to know that it is a kind of hissing sound made by a snake and it just does not only mean the sound, it also means the action. Similarly, in (6), **penpenɔni**, which refers to an annoying whimpering sound, in (7) **p^husp^husɔni** indicates the whispering sound, in (8), **bizbizɔni** refers to an itching sensation, in (9) **d^hɔrp^hɔrɔni** expresses the act of floundering in pain or discomfort. All of these terms mimic particular acts as they are perceived by the listeners. However, in addition to that, these words also make reference to an action or activity and act like a distinct action in the sentences.

6.4 Composition of suffixes, monomorphemic and multimorphemic bases

Composite suffixes refer to those suffixes that are combinations of two or more combining forms. Among the selected suffixes, 8 suffixes are composite and 7 are non-composite. The composite suffixes are *-ija*, *-ɔni*, *-ɔna*, *-ɔnija*, *-ɔruwa*, *-uwal*, *-alu* and *-ahi*. The non-composite or simple suffixes are *-ɔn*, *-ɔk*, *-uwa*, *-ɔti*, *-al*, *-ami* and *-aru*. Among this, *-ɔti* has a parallel form *-ota*. Although *-ɔk* is not a composite suffix on its own, but it creates a composite suffix by getting attached to a root *mul* ‘root’, i.e., *-mulɔk* ‘centring to the meaning of the base’. Another composite suffix *-ija* which is the end result of *-ika+aka* also help in forming other composite suffixes by getting added to certain roots, such as *-mɔhija* ‘related to a month’ → *mah* ‘month’ + *ija*, *-bulija* ‘related to colour’ → *bul* ‘colour’ + *ija*, *-pɔrija* ‘related to the side of something’ → *par* ‘side/edge’ + *ija* etc. The breakdown of the composite suffixes is listed below:

-ija → *-i* + *-a*

-ɔni → *-ɔn/-an* + *-i*

-ɔna → *-ɔn* + *-a*

-ɔnija → *-ɔn/-an* + *-ija*

-ɔruwa → *-ara* + *-uwa*

-uwal → *-uwa* + *-la*

-alu → *-al* + *-u*

-ahi → *-ah* + *-i*

The tables below display the composite suffixes on the left side of the table, and non-composite suffixes on the right side. Table 6.35 presents sample A and Table 6.36 and Table 6.37 present sample B.

Sample A:

Table 6.35 Distribution of composite and simple suffixes in sample A

SI	Type	Token	Hapax
1.	-ia (111)	-ɔn (458)	-ia (72)
2.	-ɔn (84)	-ia (419)	-ɔn (37)
3.	-ɔni (49)	-ɔk (220)	-ɔni (23)
4.	-ɔk (41)	-ɔna (193)	-ɔk (17)
5.	-ɔna (28)	-ɔni (159)	-ɔna -uwa (7)
6.	-uwa (14)	-uwa (51)	-ɔti (6)
7.	-ɔti (9)	-al (19)	-al (3)
8.	-al (7)	-ɔti (18)	-ami (2)
9.	-ɔnija (5)	-ɔnija (14)	-ɔnija -ɔruwa (1)
10.	-ami (3)	-ami (4)	-alu -ahi -uwal -aru (0)
11.	-ɔruwa -aru (1) -uwal	-uwal (2) -aru	
12.	-alu -ahi (0)	-ɔruwa (1)	
13.		-alu -ahi (0)	

Sample B:

Table 6.36 Distribution of composite and simple suffixes in sample B

Sl	2006	1016	Newly-added words
1	<i>-ia</i> (783)	<i>-ia</i> (823)	<i>-ɔn</i> (130)
2	<i>-ɔn</i> (456)	<i>-ɔn</i> (586)	<i>-ɔk</i> (86)
3	<i>-ɔni</i> (371)	<i>-ɔni</i> (390)	<i>-ia</i> (38)
4	<i>-ɔk</i> (231)	<i>-ɔk</i> (315)	<i>-ɔni</i> (19)
5	<i>-uwa</i> (159)	<i>-uwa</i> (167)	<i>-ɔna</i> (10)
6	<i>-ɔna</i> (49)	<i>-ɔna</i> (59)	<i>-uwa</i> (9)
7	<i>-al</i> (36)	<i>-al</i> (38)	<i>-alu</i> (8)
8	<i>-ɔnija</i> (21)	<i>-ɔnija</i> (21)	<i>-ɔti</i> <i>-al</i> <i>-ami</i> (2)
9	<i>-ɔti</i> (17)	<i>-ɔti</i> (19)	<i>-ual</i> (1)
10	<i>-ɔruwa</i> (7)	<i>-alu</i> (12)	<i>-aru</i> <i>-ɔruwa</i> <i>-ɔnija</i> <i>-ahi</i> (0)
11	<i>-aru</i> <i>-ami</i> (6)	<i>-ami</i> <i>-uwal</i> (8)	
12	<i>-alu</i> <i>-ahi</i> (4)	<i>-ɔruwa</i> (7)	
13	<i>-uwal</i> (3)	<i>-aru</i> (6)	
14		<i>-ahi</i> (4)	

The above tables show that the number of composite suffixes and simple suffixes are almost similar. Again, the ranking of them is also similar in both samples. While a few composite suffixes *-ija*, *-ɔni*, *-ɔna* have high frequency; *-ɔruwa*, *-uwal*, *-alu*, *-ahi* have low frequency in both samples. Again, simple suffix *-ɔn*, *-ɔk* display high frequency, but at the same time *-ami*, *-aru* etc. have the lowest frequency both in sample A and sample B. By looking at the distribution of all the suffixes in the hierarchy in sample A and sample B, it is unlikely to predict the frequency status of a suffix based on the distinction between composite and simple, as their frequency is inconsistent

throughout the list. Since both groups have high-frequency as well as low-frequency suffixes, this distinction may not be a deciding factor in productivity.

Again, some suffixes can only be added to monomorphemic bases while others can be added to both monomorphemic and multimorphemic bases. While 8 suffixes among the fifteen are attached to both monomorphemic as well as multimorphemic bases, the other 7 suffixes take only monomorphemic bases. Below, in the Table 6.37, the suffixes of the left side accept both mono-morphemic and multi-morphemic bases and the suffixes of the right side accept only mono-morphemic bases.

Now, turning towards the frequency of suffixes based on the type of bases, i.e., monomorphemic and multimorphemic bases, we arrive at the following conclusion:

Sample A:

Table 6.37 Position the suffixes based on the morphemic structure of bases they are attached to in sample A

Sl	Type	Token	Hapax
1	-ia (111)	-ɔn (458)	-ia (72)
2	-ɔn (84)	-ia (419)	-ɔn (37)
3	-ɔni (49)	-ɔk (220)	-ɔni (23)
4	-ɔk (41)	-ɔna (193)	-ɔk (17)
5	-ɔna (28)	-ɔni (159)	-ɔna -ua (7)
6	-ua (14)	-ua (51)	-ɔti (6)
7	-ɔti (9)	-al (19)	-al (3)
8	-al (7)	-ɔti (18)	-ami (2)
9	-ɔnija (5)	-ɔnija (14)	-ɔnija -ɔruwa (1)
10	-ami (3)	-ami (4)	-alu -aru -ahi -uwal (0)

11		-ɔruwa -aru uwal (1)		-uwal -aru (2)	
12	-alu	-ahi (0)		-ɔruwa (1)	
13			-alu	-ahi (0)	

Sample B:

Table 6.38 Position the suffixes based on the morphemic structure of bases they are attached to in sample B

SI	2006	2016	Newly-added words
1	-ia (783)	-ia (823)	-ɔn (130)
2	-ɔn (456)	-ɔn (586)	-ɔk (86)
3	-ɔni (371)	-ɔni (390)	-ia (38)
4	-ɔk (231)	-ɔk (315)	-ɔni (19)
5	-uwa (159)	-uwa (167)	-ɔna (10)
6	-ɔna (49)	-ɔna (59)	-uwa (9)
7		-al (36)	-al (38)
8		-ɔnija (21)	-ɔti -al -ami (2)
9	-ɔti (17)	-ɔti (19)	-ual (1)
10		-ɔruwa (7)	-ɔnija -ɔruwa -aru -ahi (0)
11		-aru -ami (6)	-ami -uwal (8)
12	-alu	-ahi (4)	-ɔruwa (7)
13		-uwal (3)	-aru (6)
14			-ahi (4)

From the above tables, we see that there is a noticeable difference of ranking between the suffixes which are attached to both monomorphemic as well as multimorphemic bases and the suffixes which are attached only to monomorphemic bases. The suffixes of the previous category have shown higher frequency in terms of

type, token and hapax legomena except the suffix *-alu* in sample A. In sample B also, the same suffixes showed higher frequency in 2006 ed. and 2016 ed., but in this sample, *-alu* grabs the middle position of the hierarchy, unlike sample A. On the other hand, later category suffixes, i.e., suffixes that are attached to mono-morphemic bases have projected lower frequency in terms of types, tokens and hapaxes in both the samples. Hence, from here we can assume that the suffixes that are attached to both types of bases have the tendency to form more words than the suffixes which are attached only to monomorphemic bases.

6.5 Interpretation

The goal of this chapter is to explore whether the productivity result varies depending on different settings by examining how productive a suffix is when a particular factor is taken into account. As we see, the productivity of suffixes can vary based on a number of factors or characteristics. However, not all suffixes yield all word forms, and some predominate over others. Among the 15 suffixes, only 8 suffixes work as agentive suffixes, 2 as feminine suffixes and another 2 as expressive suffixes. Most of the suffixes can form derivatives of both nouns and adjectives; yet among them some are dominant in one category.

In terms of derivatives and the bases they are linked to, the bulk of the suffixes is open to more than one word class. The most frequent suffixes were discovered to fall within this category rather than the ones that are specific to one class. This could hint at two things. These suffixes welcome a larger number of words, leading to a higher frequency, because they are adaptable in terms of word classes. Second, certain suffixes are preferred over others when creating new words since they have fewer constraints on word classes. *-ija*, *-ɔni*, *-ɔk*, *-uwa*, *-ɔna*, *-al* are the suffixes that form words of both classes and are attached to more than one kind of bases, they also have a high frequency in terms of types, tokens, and hapaxes, granting them a higher ranking in the hierarchy.

When it comes to the productivity of ‘Noun’ and ‘Adjective’ suffixes, *-ɔn*, *-ɔk*, *-ɔni* are more productive as a noun suffix, while *-ija*, *-ɔnija*, *-aru*, *-uwal* are more

productive as adjective suffixes. Among the agentive suffixes, *-ɔk* and *-uwa* are more productive than others, while the productivity of feminine suffixes *-ɔti* and *-ɔni* is competitive; *-ija* and *-ɔni* are also equally productive as expressive suffixes.

In case of competing suffixes, one or two of them are invariably more frequent than others when the number of competing suffixes is higher. However, several suffixes in this category may also have a very small word count. Again, when the number of suffixes is less, one or two of them may be more productive depending on the syntactic or semantic roles. Among the agentive suffixes, as we see, *-ɔk* has a significantly large number of types in both samples, *-uwa* has also a higher frequency. Coming to the feminine suffixes, *-ɔti* and *-ɔni*, although their productivity is competitive, both have fewer words available to them. The probable reason is that the language contains other competing feminine suffixes as well, as we mentioned. On the other hand, expressive suffixes are small in number, limiting them to two, according to our findings. Both suffixes appear to be equally productive and have a substantial number of words in both datasets. As there are only a few expressive suffixes, and they serve different grammatical purposes in addition to being few in number, it is thought that both suffixes are actively used in the production of expressive words since *-ija* forms adjectival expressives while *-ɔni* forms nominal expressives.

The composition of the suffixes in deciding frequency of the suffixes is not an impactful factor though, however, depending on the morphemic structure of the bases where the suffixes are attached to, we see that the suffixes occupying the higher rank can be attached to both multimorphemic and monomorphemic bases. It says that the suffixes that can be attached to both types of bases are more productive. The suffixes *-ija*, *-ɔn*, *-ɔni*, *-ɔk*, *-uwa* and *-ɔna* belong to this category whose distribution can be seen at the upper side of the table.

Certain suffixes endure more than one feature such as *-ija*, *-ɔni*, *-ɔn*, *-uwa*, *-ɔna*. The suffix *-ija* is open to more than one class in terms of derivation as well as in terms of bases, it is also a frequent adjective suffix in the language, one of the expressive words forming suffix and it can be attached to both monomorphemic as well as multimorphemic

bases. Similarly, *-ɔn* is open to more than one-word classes, one of the productive noun suffixes and can be attached to both mono and multimorphemic bases. Another suffix, *-ɔni* which also forms words of more than one category and gets attached to bases of more than one word class, a productive nominal suffix, one of the agentive words, feminine word as well as expressive word-forming suffixes. This suffix also can be attached to both mono and multimorphemic bases as well. Similarly, *-ɔk* is also open to more than one class when it comes to derivatives and their base class. It is a productive nominal suffix, a productive agentive suffix and it can be added to both multimorphemic and monomorphemic bases. *-uwa* is productive as an adjective suffix which is also a productive agentive suffix. It creates derivatives of more than one class and it can be added to bases of more than one. The suffix can be added to both multimorphemic and monomorphemic bases as well.

Now, when we look at the overall productivity of the suffixes, we see that the same suffixes which are productive in more than one aspect; are also productive in general among others. The probable reason is that these suffixes are receptive, which makes them more adaptable in terms of attestation and embracing words with several types or features. It is covered in the section that follows, that provides an overview of productivity where the suffixes fit after analysing the results of both measuring methods and productivity on different dimensions.

6.6 Productive Suffixes: Measuring Methods and Aspect-wise Productivity

We have now the reasons to assume which kind of suffixes will be more dominating in shaping the future vocabulary of Assamese. Although many suffixes do exist in the language from the past, or many are taking new forms by going through changes over time, it is possible that among the several suffixes, only a few suffixes will be frequently used in forming new words in the coming days. In sample A, in the previous chapter, we get that while in V and N Methods, the suffixes *-ija*, *-ɔk*, *-ɔn*, *-ɔna* and *-ɔni* are productive; in probabilistic methods, *-ɔti*, *-ami*, *-aru* and *-ɔruwa* appear to be productive than others. We discussed which suffixes are more productive in certain areas in the previous section of this chapter.

The suffixes that produce an overall lower productivity rate in probabilistic approaches are found to have higher productivity when they are evaluated for a particular dimension or aspect. We have observed this in the cases of *-ija*, *-ɔk*, *-ɔn*, *-ɔna*, *-ɔni*. Again, the suffixes that result in an overall higher productivity rate in the probabilistic methods, however, demonstrate lower productivity when they are examined selecting a particular characteristic. *-ɔti*, *-ami*, *-ɔru*, *-ɔruwa* display this tendency. By looking at the contributing components closely, we find a few related aspects.

Firstly, as we said, productive methods are not exhaustive and flawless and different productive methods fulfil different purposes. Therefore, no findings can be claimed as absolute. The productivity of the suffixes *-ija*, *-ɔk*, *-ɔn*, *-ɔna*, *-ɔni* is dependent on existing types, tokens and hapaxes, none of which individually predict the productivity rate in the future. On the other hand, suffixes with a higher future productivity rate according to probabilistic approaches indicate that they will be more likely to build words in the future. Secondly, dimensional productivity of the suffixes is done by counting types, tokens, and hapaxes, which does not determine their future productivity rate. This is one of the factors because of which its productivity rate resembles with overall V and N frequency rate. Thirdly, there are certain significant flaws in probability approaches that can be illustrated by the example of *-ɔruwa*. Not only that *-ɔruwa* has only one type in sample A, it also has a very small number of types in sample B. It has still become the most productive suffix despite producing only one type, which as we already stated makes it tough to be persuaded. While it helps in gauging the future productivity rate of suffixes, the present or past productivity of a suffix cannot be determined from this. Because of this, even though the aspectual or dimensional productivity of the suffixes is not as close to the probabilistic ones, their validity cannot be disputed.

Therefore, it would be more practical if we consider both sorts of suffixes as productive in different ways rather than forcing ourselves to declare the same suffixes as the most productive ones. This would avoid getting to a single overall conclusion about the productivity of the suffixes. The suffixes *-ija*, *-ɔn*, *-ɔni*, *-ɔk*, *-ua*, *-ɔti* etc. are the productive suffixes in the language at present, while *-ɔti*, *-ija*, *-uwa*, *-ɔni* are expected to have more future productivity rate. *-al*, *-ɔnija* are medially productive. On the other hand,

by all means, a few suffixes consistently show low frequency such as *-aru*, *-uwal*, *-alu*, *-ahi* and these suffixes can be considered as less productive in the language.

The words from sample A that are not included in dictionaries is another way to verify the suffixes' productivity. A handful of the words found in sample A, which were taken from digital writings, are not in the dictionary. Even though we routinely use the majority of these words in our daily lives and the majority of them are not genuinely brand-new, they still do not have a place in the dictionary. These words would be considered non-established words in the language if we were to follow the definition. However, it is already said that these are not uncommon words for native speakers. By looking at the unlisted words, it becomes clear that these are typically the developed forms of words whose roots are listed in dictionaries. It was apparently expected that since we are familiar with the meaning of the roots, we would also be familiar with the meaning of the derived forms. Again, we may claim that if a suffix is regularly employed, speakers become more accustomed to the morphophonemic pattern and semantics that words generated by the suffix occasionally go unrecognised. Again, when a pattern is common, there is a possibility that it can be utilised in different contexts, making it impossible to list them all. From the list, we see that the suffix *-ia* has the highest number of such unlisted words and it is undoubtedly one of the productive suffixes of the language.

6.7 Clustering of the suffixes in R

In this section, we cluster the suffixes by using clustering in R on the basis of their shared properties. It uses the numeric values of all the measuring methods and based on this, the machine learning algorithm separates them into different clusters. Fig 6.4 is the R script containing the commands, Fig 6.5, Fig 6.6 and Fig 6.7 are the visualisation of the cluster plot in 3, 4 and 5 clusters respectively.

```

refix_cluster.R × mydata1 × mydata × prefix_cluster.R × prefix_cluster.R × Suffix_cluster.R* × .Rhistory
2 library(ggplot2)
3 library(factoextra)
4 library(fpc)
5
6
7 # path to the csv file
8
9 mydata <- read.csv(file = "D:/DATA/Suffix cluster/suffix.csv", stringsAsFactors = FALSE)
10
11 mydata
12 suffix_names <- mydata[,1]
13
14 mydata1 <- mydata[,-1]
15
16 # kmeans clustering
17 km_mydata <- kmeans(mydata1, 3) # setting number of clusters = 3
18 km_mydata$cluster
19
20 suffix_cluster <- km_mydata$cluster
21
22 fviz_cluster(km_mydata, data = mydata1) # visualization
23
24

```

Fig 6.4 The R-script for the suffixes' clustering

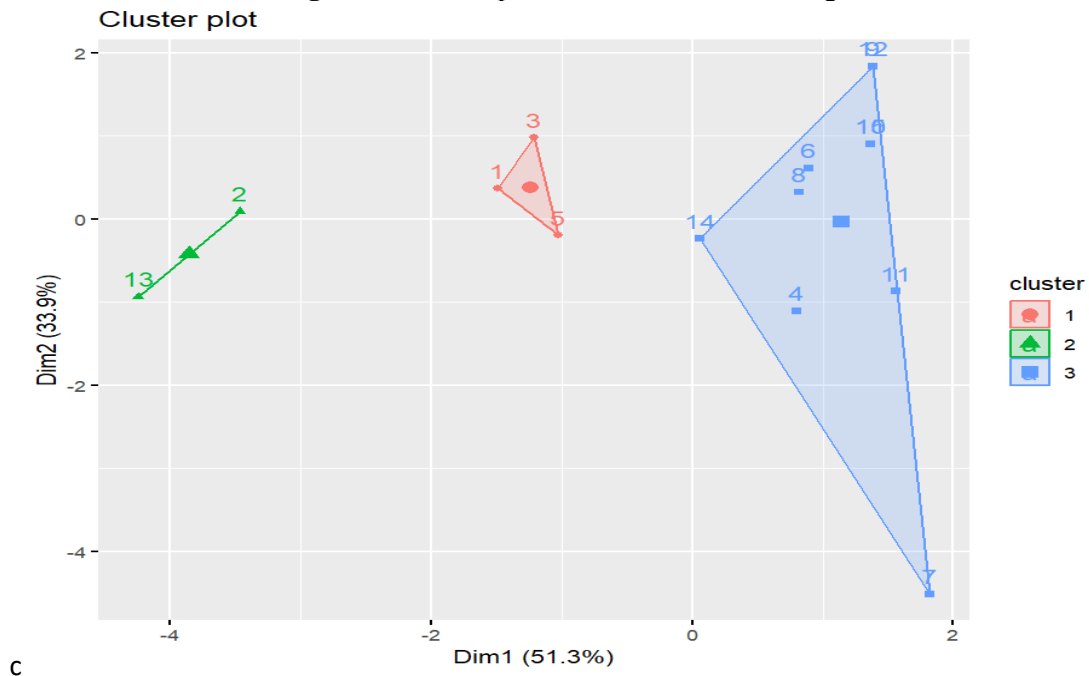


Fig 6.5 Clustering of the suffixes in 3 clusters by k-means clustering

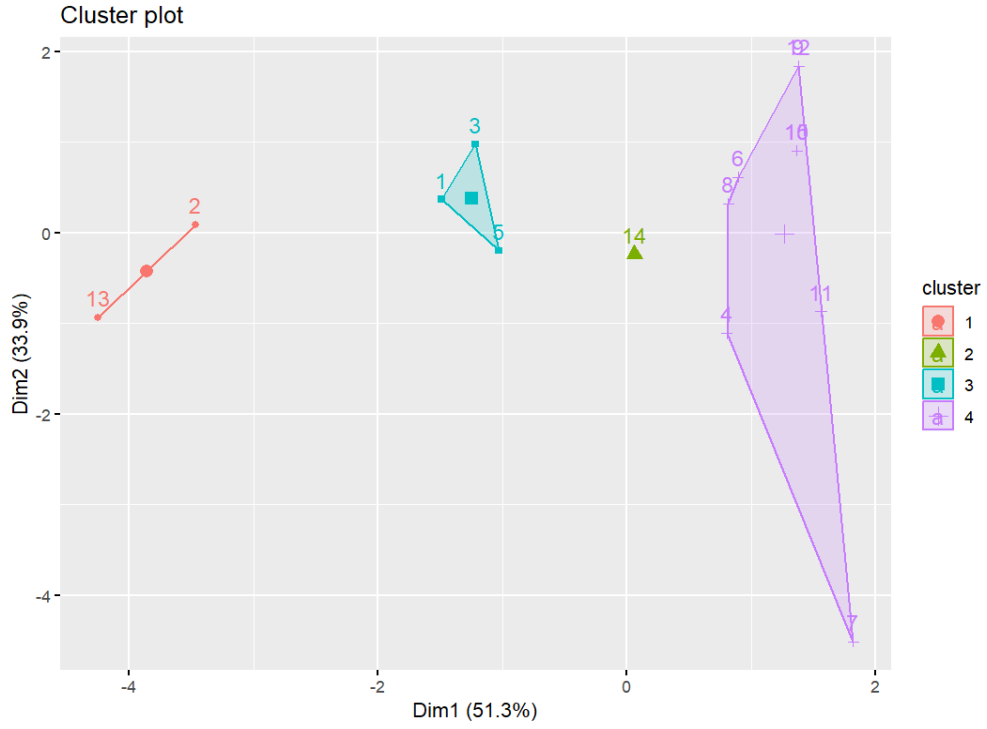


Fig 6.6 Clustering of the suffixes in 4 clusters by k-means clustering

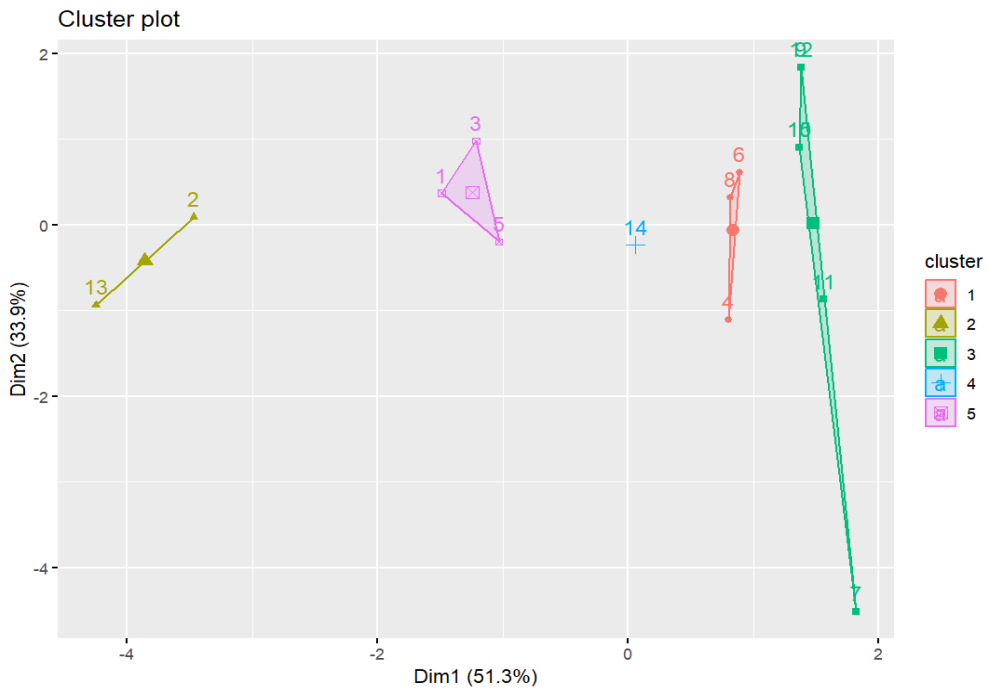


Fig 6.7 Clustering of the suffixes in 5 clusters by k-means clustering

<u>Clustering in 3</u>	<u>Clustering in 4</u>	<u>Clustering in 5</u>
Cluster 1: <i>-ɔk, -ɔna, -ɔni</i>	Cluster 1: <i>-ɔn, -ija</i>	Cluster 1: <i>-ɔti, -ɔnija, -al</i>
Cluster 2: <i>-ɔn, -ija</i>	Cluster 2: <i>-uwa</i>	Cluster 2: <i>-ɔn, -ija</i>
Cluster 3: <i>-ɔti, -ɔnija, - ɔruwa, -al, -alu, -aru, -ami, -ahi, -uwa, -ual</i>	Cluster 3: <i>-ɔk, -ɔna, -ɔni</i>	Cluster 3: <i>-ɔruwa, -alu, - aru, -ami, -ahi, -uwal</i>
	Cluster 4: <i>-ɔti, -ɔnija, - ɔruwa, -al, -alu, -aru, -ami, -ahi, -ual</i>	Cluster 4: <i>-uwa</i>
		Cluster 5: <i>-ɔk, -ɔna, -ɔni</i>

In Fig 6.5, the suffixes *-ɔn* and *-ija* are grouped in one cluster, the suffixes *-ɔk, -ɔna* and *-ɔni* are grouped in another and the rest of the suffixes clubbed in one when they are clustered in 3.

In Fig 6.6, where the suffixes are clustered in 4, one more cluster is added for *-uwa*. In Fig 6.7, in 5 clusters, the next cluster is added by keeping *-ɔti, -ɔnija* and *-al* in a separate cluster.

The clustering algorithm of R does the function by forming clusters of variables on their shared properties, i.e., the variables that share similar traits or features are clustered together. Now, we see how the variables which are suffixes, are grouped together and behave similarly. The first observation is that the suffixes of two groups which are formed in the first 3 clustering (Fig 6.5), *-ɔn* and *-ija* in one group and *-ɔk, -ɔna* and *-ɔni* in another group are relatively high productive suffixes.

When we change the cluster from 3 to 4, we get *-uwa* in a different cluster, which is also one of the productive suffixes of the language. When the suffixes are separated in 5 clusters, we find another 3 suffixes in one cluster *-ɔti, -ɔnija* and *-al* that show a semi-productivity rate. On the other hand, the suffixes that remained in a cluster other than the mentioned above till the 5 clustering, *-ɔruwa, -alu, -aru, -ami, -ahi, -uwal*; we see that they show less productivity rate and they belong to the lower ranking.

Now, the point is that clustering in R accesses the closest similarities of the suffixes based on the numeric values they have in all the methods and groups them accordingly. While we get the productivity rate of the suffixes by using measuring methods and arranging them in a hierarchy for each method separately, clustering in R

calculates it by accumulating all the values of all the methods for a suffix and automatically club it with the suffixes which are closely related. That means only the numeric values are taken into account and the suffixes whose values are found similar were clustered together. Thus, it helps us to prove our claim regarding the productive status of the suffixes. In Fig 6.7, clusters 2 (-*ɔn*, -*ija*) and 5 (-*ɔk*, -*ɔna*, -*ɔni*), as we stated, club the suffixes which have similar numeric traits and they are found to be the most frequent suffixes. The same is the case with cluster 4 (-*uwa*) and 1 (*ɔti*-, *ɔnija*, -*al*). The third cluster, however, contains the suffixes which have lower frequency rates. We get here that no two suffixes with contrastive values are grouped together, and we can also see that the suffixes from one group have closer ranks in the tables. In terms of productivity, the R clustering presentation is consistent with the labelling of the suffixes of earlier analyses.

6.8 Productivity of Prefixes and Suffixes: An Observation

So far, we have looked at productivity for prefixes and suffixes independently in the previous chapters and sections. In the process, we have considered the structural and semantic elements along with statistical experimentation, and finally, we have tested the same in R clustering. From there, we are able to get a basic understanding of more or less productive prefixes and suffixes of the language. Now, we discuss a few findings based on a broad comparison between suffix and prefix productivity in this part.

Prefixation and suffixation are two different processes, and it is found that as a word-formation process ‘suffixation’ is a more productive than ‘prefixation’. This is made apparent by the fact that there are significantly more suffixes than prefixes (section 1.5.2). This most likely happens because, in contrast to prefixes, new suffixes can be added to existing ones or the existing ones are used to change them in order to generate whole new ones in the language. A new suffix is occasionally observed to be generated, usually with minor alterations, due to morpho-phonemic requirements, gaps, and blockages. Some of the suffixes on the list, for instance, are combinations or extensions of the preexisting suffixes.

$\text{ɔn} + a = \text{ɔna}$
 $\text{ɔn} + i = \text{ɔni}$
 $\text{ɔn} + ija = \text{ɔnija}$
 $al + u = alu$
 $uwa + al = uwal$

Again, there is a tendency to switch off to another suffix or to create a new one when a bottleneck arises. For instance, we have discussed about the potential creation of *bowɔni* as an outcome of the presence of *bowɔti*, which designates a weaver, in 6.3.2 in the discussion of feminine markers. We also discussed how the words *rowɔti* and *rowɔni*, which refer to women who plant paddy seedlings, are synonymous. Similarly, the suffixes *-al* and *-alu*, respectively, make up the words *kripal* and *Kripalu* as they are attached to the same base and both have the same meaning, that is, kindness and compassion.

Furthermore, the dataset has words such as *k^helɔna*, a playing instrument or object, *pirhɔna*, a grinding instrument and *šasɔni* ‘an eraser’, *salɔni* ‘A strainer’. While the former two have the suffix *-ɔna*, the latter two have *-ɔni*. But all these four are concrete instrumental objects and bases of all are verbs. Had they all used the same suffix also, there would not have been a major comprehension gap. It denotes how fluid the choice of suffixes in word creation is, enabling speakers to create new suffixes or switch more readily to another. These factors evince that the overall number of suffixes in the language has increased over the time and it has potential to add more.

However, when it comes to ‘prefixation’ we observe that there are fewer prefixes in the language than suffixes. Prefixes have more obvious or direct semantic characteristics than suffixes; for example, when asked to define *ɔpɔ-* or *ku-*, the speakers can refer to a particular sense almost immediately; nevertheless, the meaning of *-ija* or *-ɔna* is less obvious and loosely definable at first. Unlike suffixes, prefix substitution and creation of a new prefix is seldom for the same reason. Different meaning is conveyed when a prefix is replaced, such in the cases of *ɔxik^hja* ‘lack of education’ and *kuxik^hja* ‘bad education’. Although both words have the same root, *xikk^hja* ‘education, the first one denotes a lack of education, while the second one denotes immoral education. As a

consequence, the language has fewer prefixes than suffixes. This supports the idea that ‘suffixation’ is a more productive process than ‘prefixation’.

However, when comparing the productivity of ‘prefixes’ and ‘suffixes’ together, prefixes have been shown to be more productive than suffixes. In this context, the previous explanation provides the rationale for this. It appears that new suffixes are primarily formed to fulfil morpho-phonemic needs or because of blockages. Due to their ease of creation, modification, and addition, suffixes have been found to have less semantic stability than prefixes since they make it easier to introduce new candidates. Semantically, the suffixes are not distinct from one another because of their numerous competitors. Users are presented with a wide range of options in this situation, which correspondingly reduces the total number of words these suffixes generate. However, users have fewer options when it comes to prefixes, and they typically stick to the established prefixes when creating new words. Hence, when we compare the tables of the prefixes and suffixes for both the samples, we find a greater number of words for the prefixes than the suffixes, that makes the prefixes more productive than the latter.

After accessing the productivity rate and nature of productivity of both prefixes and suffixes, we are now in a position to comment on what type of approaches would be suitable in formulating the occurring pattern of the affixes in Natural Language Processing. A rule-based approach analyses and processes textual data by applying predetermined language rules. It entails using a certain set of guidelines or patterns to identify certain patterns, extract data, or carry out operations like text classification and other similar tasks. The data-driven approach, on the other hand, looks for patterns in natural language data and uses such patterns to understand rules independently and enhance machine learning systems. When it comes to prefixes, we can choose an approach that is based on predetermined rules because the semantic and functional context is more obvious than it is for suffixes. But suffixes have a flexible attachment, making it difficult to formulate rules exhaustively for them. For this reason, a rule-based approach combined with a data-driven approach is thought to be helpful in identifying patterns to enhance machine learning algorithms.

When it comes to the approaches of the study, it is already accepted by the researchers that the dictionary-based method is an archaic method, as it does not predict the true nature of productivity. However, as mentioned, we have taken two samples and one of them is based on the data collected from the dictionary i.e., sample B. On the other hand, sample A which is the collection of texts available digitally is significantly a small-scale corpus. We observe that the nature and size of the samples studies here are nowhere similar for a comparison to be made, nonetheless, we arrive at a result that is surprisingly similar. It indicates that somewhere, there is a consistency of productivity of the affixes in terms of past, present and future productivity. The similar results of type frequency between sample A and sample B tell that the frequency of the suffixes has not changed much yet throughout the years. It is obvious that sample B contains many words that are obsolete or have rarely been used now, which also contribute to the overall frequency. However, sample A, texts of which are contemporary and the words it contains are actively used words in the language at present. Therefore, it was assumed that the productivity rate for Type frequency in sample A and sample B might differ. But, from the statistics, we get a result quite opposite to our assumption. The productivity rate of these suffixes is almost the same in both the samples, therefore, indicating the consistent productivity of the affixes in terms of type frequency throughout the time. Additionally, it suggests that there is a possibility that productive affixes may exhibit roughly comparable productivity rates across various samples.