

# A Corpus-Based Functional Analysis of Complex Nominal Groups in Written Business Discourse: The Case of “Business”

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## ABSTRACT

*This paper uses a case study approach to explore the internal structure of complex nominal groups in written business discourse. A one-million word corpus of banks' corporate annual reports was compiled, and complex nominal groups with business as head noun were analyzed in terms of functions and logical relationships. The analysis shows that in the business English texts, complex nominal groups have distinctive functional and logical structures as well as particular patterns of co-occurrences among multiple premodification. Classification was found to be the main function of the experiential structure, with sub-modification used for further specifying the head referent. The co-occurrences of premodifiers also show the tendencies of functional associations underlying the configuration of the experiential structure. These findings suggest the distinctive register features of the informational writing in the written business discourse. The paper concludes with pedagogical implications of the findings for the teaching of business English to language learners.*

## KEYWORDS

Business English, Complex Nominal Groups, Corpus, Functional Analysis, Multiple Premodification

## INTRODUCTION

Current corpus-driven research on phraseology has paid much attention to the description of the characteristics of collocations and semantic prosodies through investigating general or specialized corpora of academic and professional texts (e.g. Durrant, 2009; Gledhill, 2000; Nelson, 2006; Walker, 2011). Nelson (2006) examined the semantic associations of words in a corpus of spoken and written Business English, showing how words in the business lexical environment semantically interact with each other. Walker (2011) described how a corpus-based investigation of the collocational behaviour of key lexis can help in the teaching of Business English. A vast body of phraseological research has also been conducted on the form and function of frequency-based lexical bundles in academic and scientific writing (e.g. Adel & Erman, 2012; Biber & Barbieri, 2007; Grabowski, 2015; Hyland, 2008).

While these research studies have enhanced our understanding of the collocational patterns and the use of formulaic language in academic and professional discourse, frequency-based collocations and lexical bundles are not traditionally considered as distinct grammatical categories. A cursory survey of the literature in corpus linguistics, however, shows that the complex nominal group, though a well-established grammatical construction in traditional and contemporary English grammars, receives scant attention in the current corpus-driven phraseological research. Functioning as the subject, object or complement in the syntactic structure of a clause, the use of complex nominal groups increases the

density of information in the written text, and at the same time, the level of comprehension difficulty to the reader. As Biber and Gray (2010) observed, the discourse style of relying on nominal structures in research articles, though highly efficient for academic professionals, is particularly challenging for novice students, as they are less able to infer the meaning of the compact, less explicit constructions. A systematic analysis of complex nominal groups will not only reveal the distinctive features of the complexity of language use in academic and professional communication, but also make a useful contribution to the current research on phraseology and formulaic language in corpus linguistics.

More importantly, an investigation of structural patterns of complex nominal groups in Business English is of particular relevance to the teaching of English for Specific Purposes (ESP). For example, grammar practice in the ESP classroom often focuses on complex clausal structures, i.e., subordination and coordination clauses, but much less attention is given to phrasal structures, especially the multiple modification of nominal groups, due to the common perception that grammatical complexity of written language in Business English lies in clausal subordination. An investigation of complex nominal groups then will help in enhancing teachers' existing knowledge of pedagogical grammars, so that they are able to make informed decisions in the design of ESP course and materials.

The present study, therefore, aims to fill this gap by exploring the internal structure of complex nominal groups, i.e. nominal groups with multiple premodification (e.g. *the financial services business, a very successful general insurance business, our private wealth management business*), in the written texts of Business English, and following a functional approach, focuses specifically on the features of the constituent elements in the experiential structure and the patterns of variation in the logical structure. The study adopted Halliday's functional grammar as the analytical framework, and chose corporate annual reports and CEO's letters in the financial industry as the text samples for analysis.

As the most prominent corporate disclosure document, annual reports and CEO's letters have been widely used for text analysis in professional genre studies and business communication research (e.g. Bhatia, 2008; de Groot, Korzilus, Nickerson, & Gerritsen, 2006, 2011; Hyland, 1998; Karreman, De Jong, & Hofmans, 2014; Rutherford, 2005). Unlike scientific and academic writing, the aims of annual reports and CEO's letters are to report corporate performance as well as to convey a positive corporate image to various readers and stakeholders. The production of these texts, which is a major corporate endeavor, makes expert use of linguistic and rhetorical strategies to achieve both the informational and promotional goals. Research has already shown the prevalence of certain lexico-syntactic resources and metadiscourse in constructing this persuasive genre (Bhatia, 2008; Hyland, 1998). Few research studies, however, have been reported in the literature concerning the phrasal structures that are used for packaging dense information into the text for professional communication. An analysis of complex nominal groups in annual reports and CEO's letters can deepen our understanding of language use in specific professional discourse communities, and provide useful pedagogical information for the development of the research-informed teaching of Business English.

## LITERATURE REVIEW

### Complex Nominal Groups

Over the past thirty years, there have been wide-ranging theoretical and empirical accounts of nominal groups in the literature of English grammars (e.g. Biber & Gray, 2011; Biber, Johansson, Leech, Conrad, & Finegan, 1999; Halliday & Matthiessen, 2004; Keizer, 2007; Quirk, Greenbaum, Leech, & Svartvik, 1985). As a key resource for constructing texts, the nominal group is the linguistic structure that distinguishes written language from spoken language. Noun phrases are also a sensitive index of style, highly responsive to the communicative purposes and subject matters in varying types of

discourse (Quirk, et al. 1985, p. 1352). In scientific writing, complex nominal groups are used as the syntactic unit for lexical items to be tightly packed into a clause, which increases lexical density but also syntactic ambiguity of the written language (Halliday, 1993). Recent studies show that in contrast to everyday conversation, in which clausal subordination is more common, academic writing is structurally compressed with phrasal modifiers embedded in noun phrases, reflecting a different kind of grammatical complexity that is common in academic writing (Biber & Gray, 2010; Biber, Gray & Poonpon, 2011).

In descriptive English grammar, the basic structure of the noun phrase consists of premodification, head noun, and postmodification (Quirk, et al., 1985). Postmodifiers include, typically, finite and non-finite clauses, prepositional phrases, and noun phrases in apposition. Prepositional phrases make up the majority of postmodifiers in various registers, and are extremely common in academic texts (Biber, et al., 1999, p. 606). Postmodifying clausal elements are considered as an indicator of L2 writing development, and dense use of dependent structures that function as postmodifiers is hypothesized as the last developmental stage of academic writing progression (e.g. Biber, Gray & Poonpon, 2011; Parkinson & Musgrave, 2014). In a study of the functions of nominal groups in different school subjects (Fang, Schleppegrell & Cox, 2006), it was observed that the use of embedded clauses as postmodification is characteristic of the registers of advanced literacy.

Corpus-based linguistic research has also reported that nominal groups with premodifiers are more common than those with postmodifiers in all registers (Biber, et al., 1999: 578). Compared with postmodification, multiple premodification is an efficient means by which dense information content can be packed into as few words as possible (ibid, 597). Furthermore, as Halliday (1993:77) observes, this type of nominal groups is most difficult to process, since they consist of strings of lexical words without any grammatical words in between (e.g. *the successful direct retail deposit service, a new customer referral system*). In other words, the relative sequence and logical relations of premodifiers in complex nominal groups cause particular difficulty in processing and understanding written texts. Research findings that complex nominal groups are more compressed in structure and less explicit in meaning have important implications for the teaching of EAP and ESP, and have been taken into account in developing academic writing courses. Biber, Gray and Poonpon (2011) proposed a new approach to measure the complexity in student writing development, which uses complex noun phrase constituents and complex phrases, and is radically different from the conventional clausal subordination measures that characterize conversation. Musgrave and Parkinson (2014b) reported an approach to task development that can provide guidance to teachers in developing their own complex noun phrase tasks. One such task is to increase learners' understanding and use of noun-noun phrases with repeated application to a wide range of academic texts in the course of their programme study.

However, in corpus-based research into ESP and business discourse, such as corporate annual reports, which have both informational and persuasive purposes, there exists no systematic account of the use of complex nominal groups in professional texts. Researchers in business communication have been interested in textual analysis of annual reports and CEO's letters, focusing on examining the thematic differences between textual and graphic information contained in the documents in across-cultural communication, as well as their effects on the potential stakeholders' attitudes and on the corporate reputation (e.g. de Groot, Korzilus, Nickerson, & Gerritsen, 2006; Karreman, de Jong, & Hofmans, 2014). Rutherford (2005) identified the use of positive language as rhetorical strategy in the genre and subgenres of corporate annual reports, based on corpus evidence of word frequencies in accounting narratives. From an applied linguistic perspective, Hyland (1998) explored how metadiscourse in the CEO's letters is used as the linguistic and rhetorical means to influence readers' understanding and evaluation of the subject matters, and to project a positive personal and corporate image. Research into Business English (e.g. Nelson, 2006; Walker, 2011) has also reported collocational behaviours of key business lexis and their different meanings and uses, as well as their semantic prosodies that are unique to the business environment, and has suggested the ways in which the corpus findings can be usefully introduced into the Business English classroom. Though

different in terms of research focus, a common aspect of these studies is that they employed corpus linguistics as an approach to the analysis of the lexical, textual and genre features of Business English texts (e.g. de Groot et al., 2006; Hyland, 1998; Nelson, 2006; Rutherford, 2005; Walker, 2011). This is an important methodological advance in the ESP research. As the studies have demonstrated, by exploring large amounts of specialized corpora data, a corpus linguistics approach is particularly illuminating and valuable in deconstructing business discourse.

### Multiple Premodification

In order to describe the sequencing rules for premodifiers, Quirk, Greenbaum, Leech, and Svartvik (1985: 1338) divide the territory of noun phrases between the determinative and the Head noun into four premodification zones. These four zones are related to semantic classes and labelled as Precentral, Central, Postcentral, and Prehead, as illustrated in Box 1.

In the precentral zone, peripheral nongradable adjectives (e.g. *major, certain*) typically occur, whereas “the central zone includes the central, gradable adjectives, ie “the most adjectival items”” (e.g. *new, slow*). The postcentral zone consists of participles and colour adjectives (e.g. *customized, a working theory, blue skies*), while the prehead includes the adjectives with a semantic relation to nouns (e.g. *financial, social*) or nouns, which are “least adjectival and most nominal” premodifiers. The identification of the four zones provides very useful guidelines for sequencing the multiple premodifiers in complex noun phrases. However, as illustrated in the above example, the four zones only specify the ordering rules of the multiple elements that all directly modify the head noun, and each premodifier – *major, new, customized, financial* – has a distinct semantic relationship with the head noun *service*.

Biber, Johansson, Leech, Conrad, and Finegan (1999, p. 597) explore the length and order of premodification based on the analysis of large-scale corpora of different registers. Among premodified noun phrases, the vast majority (70-80%) have only a single premodifier, while over 20% have two-word or more than two-word premodification. Biber et al. (1999, p. 598) also claim that the structural type of premodifiers has strong influence on their order, and the observed ordering preference is as follows:

adverb + adjective + colour adjective + participle + noun + head noun

While there are varying occurrences for different pairs of premodifiers in the predicted order, an overall structural tendency is that the most noun-like modifiers occur closest to the head noun. This has a semantic correlate, in that such modifiers describe attributes more integral to the head noun referent.

In Halliday’s functional grammar (Halliday & Matthiessen, 2004), the nominal group is interpreted by means of the experiential structure and the logical structure. The experiential structure specifies the function of the noun and other elements that characterize the noun. Premodification is functionally labelled as Deictic, Numerative, Epithet, and Classifier, and the Head noun as Thing, as in the following sequence presented in Box 2.

The Deictic element indicates whether or not some specific subset of the Thing is intended, and is realized by specific determiners (e.g. *the, this, that, my*) or non-specific determiners (e.g. *a, one, each*). The numerical feature of the Thing is indicated by the Numerative, which expresses either quantity (e.g. *one, two, several, little*) or order (e.g. *forth, first, last*). The Epithet indicates some quality

Box 1.

Determinative	Precentral	Central	Postcentral	Prehead	Head
<i>a</i>	<i>major</i>	<i>new</i>	<i>customized</i>	<i>financial</i>	<i>service</i>

Box 2.

Deictic	Numerative	Epithet	Classifier	Thing
<i>the</i>	<i>fourth</i>	<i>largest</i>	<i>retail</i>	<i>business</i>

of the Thing, and is often realized by adjective (e.g. *large, successful, new*), whereas the Classifier, realized by noun or adjective, indicates a particular subclass of the Thing (e.g. *retail business, referral system*). The Thing is the sematic core of the nominal group and is typically realized by a noun. In addition to the experiential structure, Halliday’s functional grammar also interprets the nominal group in terms of a logical structure, which describes the logical relations between the elements and the head noun. This has also been referred to as modification in the literature (Biber, et al., 1999; Quirk, et al., 1985). An important aspect of the logical structure among multiple premodifiers is that they usually have internal logical relationships, i.e., some words modifying other premodifiers instead of the head noun (e.g. *a globally diversified business*). This is a matter of sub-modification, or internal bracketing, which affects the natural order of elements in the nominal group. For example, in the nominal group *a new customer referral system*, the element *customer* modifies another premodifier *referral* instead of the head noun *system*. It was noted that the possibility of such internal logical relationships increases along with the length of premodification (Biber, et al., 1999). The present study adopted Halliday’s functional grammar as the framework for analyzing the premodification, since it enables us to examine both the experiential and logical meanings that are expressed in complex nominal groups in the texts of Business English. This has a potential advantage over other linguistic frameworks in that it can provide a full, integrated description of the structure and functions of multiple premodifying elements used in Business English.

In the study of professional genres, Bhatia (1993, p. 28-29) compared the different functions that noun phrases and nominalizations performed in three written genres, including advertising, legislation, and scientific research articles. He claimed that an overwhelming use of nominal groups in certain types of advertisements is because they create more slots for premodifying adjectival insertions than any other linguistic constructions. Nominal groups, therefore, function as linguistic resources for facilitating the positive description of products in advertising texts. As a promotional genre, advertising differs in the use of nominal groups from legislation and scientific research articles, both of which are informational. In a study of discourse functions of signaling nouns, i.e., abstract nouns whose meaning can only be recovered by reference to its context, Flowerdew (2003, p. 336) observes that premodification may be semantically more important than the signaling noun which it modifies (e.g. *functional studies*). It is the modifier, rather than the signaling noun, that is prioritized by the writer in terms of the message, and the role of the signaling noun is to create an information structure in which the modifier can be introduced into the discourse and made salient as the semantic focus.

In summary, current corpus-based investigations into nominal groups are primarily concerned with their occurrence in academic English texts, and there exists, to date, no systematic account of the use of nominal groups in the written texts of Business English in the field of ESP. Furthermore, despite the prevalence of multiple premodifiers in nominal groups, research studies on written language focuses largely on the identification and functional analysis of the types of postmodification, and much less attention has been given to the understanding of the internal structure of premodification from a functional perspective. Following Halliday’s functional grammar, this study aims to explore how the packaging of dense information in a particular genre of Business English, i.e. annual reports, is achieved through multiple premodifying elements in such complex nominal groups as *the successful direct retail deposit service*. The study intends to address two research questions: 1) What are the patterns of experiential and logical structures of complex nominal groups in annual reports? 2) What are the features of the functional elements of complex nominal groups in annual reports?

## CORPUS AND DATA ANALYSIS

The present study is based on a corpus of corporate annual reports and CEO’s letters that were collected from the websites of 16 international banks registered in the UK, US, Canada, Australia, and New Zealand. All these reports were written in English, and were released to the stakeholders and the public between 2006 and 2010 to report their corporate performance in these years. They were made available on their websites as the main disclosure document for corporate communication. As shown in Table 1, in total, 10 annual reports and 66 CEO’s letters were gathered in compiling the corpus, amounting to 1.06 million word tokens. The sample represents corporate communication texts from a range of banking institutions in the international finance sector.

To make the quantitative and functional analysis manageable, the study adopted a case study approach and focused on the complex nominal groups containing *business* as head noun, rather than examining every single nominal group occurring in the whole corpus. The choice of nominal groups with *business* as head noun was based on two main reasons. First, the occurrence of *business* was found to be ubiquitous in the discourse of business communication, as evidenced as the 1<sup>st</sup> keyword and the 3<sup>rd</sup> most frequent lexical word in a corpus of Business English (c.f. Nelson, 2000; 2006). In an investigation of the collocational behaviour in business discourse, *business* was identified as the most frequent nominal collocate associated with the key verbs in the Bank of English corpus (Walker, 2011). As its semantic value is higher than other lexical items in business texts, *business* is an ideal candidate for becoming the semantic core of the head noun in nominal groups. Second, the noun *business* belongs to the category of “general nouns” or “shell nouns”, whose specific meaning can only be supplied by referring to its context (Charles, 2003, 2007; Gray & Cortes, 2011; Hunston & Francis, 1999). Such nouns carry both textual and evaluative functions that are essential to effective English academic writing (Charles, 2003; Flowerdew, 2003). A comprehensive account of the *business* nominal groups in annual reports will provide a useful picture of the structure and functions of complex nominal groups in the business discourse. A further important decision was that the study focused on the analysis of premodification in the *business* nominal groups. As discussed above, the patterns of multiple premodifiers in the business texts are still unknown, though they are an important linguistic resource for packaging dense information, and are likely to have complex internal structure.

Using the concordance program of WordSmith Tools (Scott, 2005), all instances of *business* were extracted from the corpus, and were examined in the concordance lines to determine whether they were functioning as the head noun in complex nominal groups. In total, there were 3620 occurrences of *business* in the whole corpus. In many cases, the word was used as a premodifier for another noun, such as *our business strategy*, *its business model*, and these instances (n=1677; 46.3%) were excluded from the analysis. As the focus of the present study was to examine the patterns of multiple premodification, a further step was to identify nominal groups that contain *business* as the head noun and at the same time, at least one premodifying element. Nominal groups that have no premodifying elements (n=1369; 37.8%) were excluded, such as those consisting of a determiner and a head noun

Table 1. Details of the corpus

	Words	Texts	Banks
CEO’s Letters	286,170	66	16 (CITI; Lloyds Banking Group; Wells Fargo; HBOS plc; Goldman Sachs; JPMorgan Chase; Royal Bank of Scotland; Bank of America; Barclays; HSBC; Morgan Stanley; National Australia Bank; Royal Bank of Canada; TD Bank Financial Group; Westpac Bank; Commonwealth Bank)
Annual Reports	775,543	10	6 (CITI; Lloyds; Gold Sachs; Wells Fargo; HBOS; HSBC)
Total	1,061,713	76	16

*business* (e.g. *our business, the business*) and a single *business* nominal (e.g. *do business with*). After this further scrutiny, the study identified a total of 574 complex nominal groups that have multiple elements premodifying *business* as the head noun, which accounts for 15.9% of all 3620 instances of *business* nominal groups. In the case of duplicate nominal groups that occurred more than once, they were recorded as one instance for structural analysis, though there were few such cases. In addition, it is common that a nominal group becomes increasingly complex by adding more premodifiers, for example, *new business, our new business, our new insurance business*. Of all the identified complex nominal groups, the occurrences of premodifiers varied in terms of the number of modifying items and their internal relationships, as shown in the following examples:

*a risky business, our private banking business, Morgan Stanley’s industry-leading real estate business, our well-established and highly regarded global transaction services business.*

Following Halliday’s framework of the experiential and logical structure, the premodifying elements of each of the 574 instances were then categorized in terms of the experiential function: Deictic, Numerative, Epithet, and Classifier; and where there was submodification occurring within the premodifiers, the internal logical structure was determined.

## RESULTS

### Patterns of Occurrences of the Functional Elements

Table 2 shows the frequency of occurrence of each functional element in the 574 *business* nominal groups. As can be seen, there are big differences in the occurrences of premodifiers in terms of function. As the first functional element in the experiential structure, the Deictic occurs much more frequently than other elements. Of the 574 nominal groups, 88% contain a specific or non-specific Deictic. The occurrence of the Deictic is used to identify the context in which the Thing *business* is described by means of its functional characteristics. By contrast, only 1.4% of the nominal groups have the Numerative element that expresses the numerical aspect of *business*. This indicates the infrequency of quantitative characterization in the experiential construction of the *business* complex nominal groups. Furthermore, items that serve as the Numerative are relatively restricted (e.g. *one small business, the fourth largest business, more business*).

Epithets occur in over a quarter of the nominal groups (27.1%), while Classifiers, which are much more common, occur in the majority of the nominal groups (78.6%). In addition, over half of the nominal groups (54.5%) have an additional premodifying element that functions as their submodification, which is labelled as Sub-classifier. For example, in the nominal group *the life insurance business*, *life* specifies a subset of *insurance*, and functions as its sub-modification, instead of directly modifying the Thing *business*. Overall, the results indicate that attribute that is most permanent to the Thing is the classification of *business*, which becomes even more prominent owing to the frequent

Table 2. Frequency of occurrence of functional elements in the 574 nominal groups

	Deictic	Numerative	Epithet	Sub-classifier	Classifier	Thing <i>business</i>
Frequency of occurrence	505	8	156	313	451	574
Percentage of NGs	88%	1.4%	27.1%	54.5%	78.6%	100%

use of Sub-classifier. Subjective and objective descriptions of the Thing, which are expressed by the Epithet, appear to be the less common attribute of *business*.

Figure 1 shows the distribution of items that function as the Deictic in the nominal groups extracted from the corpus. A general pattern is that only a narrow range of items are used as the Deictic. The first person possessive *our* (n=170) occurs in nearly one third (29.6%) of the nominal groups, revealing the experiential meaning expressed by the structure of “*our ..... business*” in the corpus. Another specific determiner *the* (n=160) takes up 27.9% of all instances of the Deictic, compared with non-specific determiner *a/an* (n=67) that accounts for 11.7%. It is noticeable that possessive nominals (n=65), such as *the Group’s*, *the bank’s*, are also commonly used as the determiners to specify the referent *business*. Other specific determiners (n=19) that occur less often include *this*, *their*, and *his*. In addition, there are nearly 13% of the nominal groups that do not contain a Deictic element (n=74). Overall, specific determiners are predominantly used as the Deictic for the purpose of tracking the referent of the Thing *business* in the texts. A Chi-square Goodness-of-Fit test on raw frequencies indicates that there is a highly significant difference ( $\chi^2 = 272.5$ ,  $df = 6$ ,  $p = 0.000$ ), in terms of the occurrences of these different Deictic items in the complex nominal groups.

The Epithet element indicates the property of *business* (e.g. *a worldwide business*, *the entire mortgage business*) or the speaker’s subjective attitude towards *business* (e.g. *an excellent business*, *our leading commodities business*). The former is categorized as experiential Epithet, and the latter as interpersonal Epithet (Halliday & Matthiessen, 2004, p. 318). As shown in Table 3, among the 156 instances of the Epithets, 63.5% are interpersonal and 36.5% experiential. In terms of word class, 58.5% of the Epithets are expressed by adjectives, and most of them describe positive attitudes towards or quality of the referent *business*, e.g. *core*, *new*, *good*, *successful*, *strong*. Only a few of them are negative words, e.g. *small*, *risky*. The other 41.5% of the Epithets are expressed by participial adjectives, e.g. *combined*, *regulated*, *underlying*, or compounds, e.g. *first-class*, *ground-breaking*, *well-managed*. A small proportion of the Epithets (10%) carry an adverb as their sub-modification to intensify adjectives or participles, for example, *a rapidly changing business*, *a very successful general insurance business*, *a globally diversified business*.

Different from Epithets, Classifiers indicate the subclass or type of *business*, e.g. *the derivatives business*, *our deposits business*, *our domestic business*. The Classifiers – *derivatives*, *deposits*, and *domestic* – serve to classify the Thing *business* into different types. As shown in Table 2, 78.6%

Figure 1. Frequency of occurrence of the different Deictic items

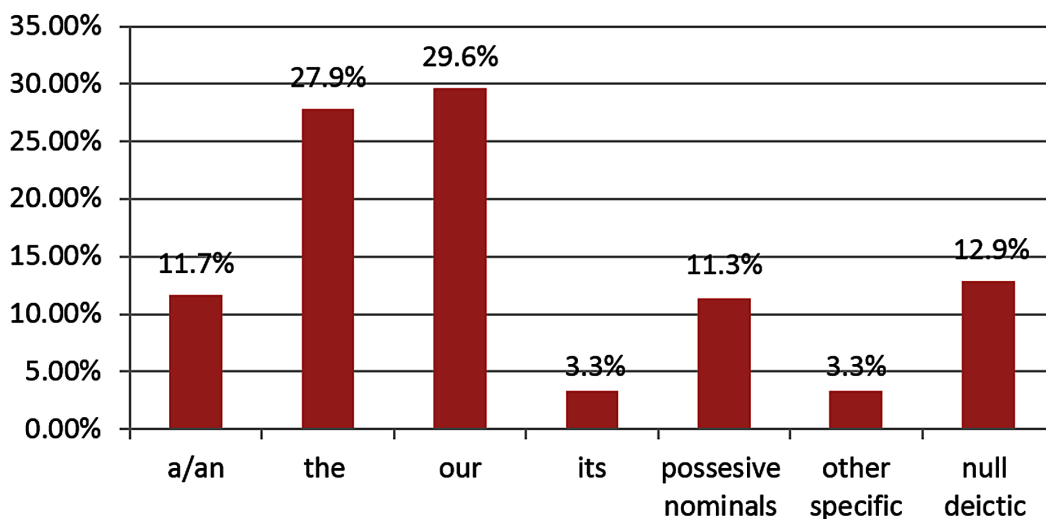




Table 3. Frequency of occurrence of Epithet types, word class, and sub-modification

	Types of Epithet		Word Class		Sub-Modification
	Interpersonal	Experiential	Adjective	Participle/Compound	Adverb
Percentage of NGs with Epithet (n=156)	63.5%	36.5%	58.5%	41.5%	10%

of the identified nominal groups carry a classifying element. This is an important feature of the experiential structure, indicating that the main function of the premodifiers is to distinguish the different lines of the banking business. Furthermore, it is common that the Classifiers have another element that functions as their sub-modification. For example, in *the private equity business* and *our asset management business*, *private* and *asset* serve to modify *equity* and *management* respectively, and thus have a functional relationship with the Classifiers, instead of the Thing *business*. Table 4 below shows that of the 78.6% nominal groups with Classifier, 69.4% also have an element for modifying the Classifier, indicating that the types of *business* are further classified into smaller and more specific sets. In terms of the distribution of different word classes that occur as Classifier and Sub-classifier, it was found that 78.3% of the Classifiers are expressed by nouns to differentiate types of business, e.g. *insurance, finance, management, retail, capital*. Adjectives and participial adjectives occur much less often, only accounting for 9.5% and 12.2% respectively (e.g. *the subprime business, the trading business, the card-acquiring business*). This is a sharp contrast to the occurrence of the Epithets, which are expressed typically by either adjectives or participial adjectives. The analysis also reveals that over half of the Sub-classifiers are nouns, which means that a sequence of noun + noun + (head) noun (e.g. *the franchise distribution business, its venture capital business*) is common in the premodification.

### Features of Co-Occurrences of the Functional Elements

Figure 2 shows the patterns of co-occurrences of the Deictic elements with the other functional elements except Numerative, which was found in only 1.4% of the *business* nominal groups. A salient pattern is that the non-specific determiner *a/an* co-occurs with the other functional elements in a markedly different way from the specific Deictics. Of the nominal groups that contain the non-specific determiner *a/an* (n=67), over 70% also have an Epithet element (e.g. *an excellent business, a sustainable business*), while 45% have a Classifier (e.g. *a stronger retail business, a world-class operations business*), and 25% have the sub-modification for the Classifier (e.g. *a retail banking business, a venture capital business*). By contrast, the specific determiner *the* (n=160) has a strong preference to co-occur with the Classifier (91%) (e.g. *the card business, the mortgage business*) and Sub-classifier (62%) (e.g. *the public finance business, the private equity business*), but occurs much

Table 4. Frequency of occurrence of word class and sub-modification in Classifier

	Adjectives	Participles	Nouns	Sub-Modification
Percentage of NGs with Classifiers (n=451)	9.5%	12.2%	78.3%	69.4% (Sub-classifier/Classifier)
Percentage of NGs with Sub-classifiers (n=313)	34.8%	4.5%	51.8%	

less often with an Epithet (14%) (e.g. *the fundamental business, the leading insurance business*). Similarly, as shown in Figure 2, the possessive determiner *our* (n=170) and possessive nominals (e.g. *the bank's*) (n=65) prefer to co-occur with the Classifier and the Sub-classifier (e.g. *our principal investing business, the Group's insurance underwriting business*), in comparison with the Epithet (e.g. *our newly-established private equity business*). Chi-square Goodness-of-Fit tests on raw frequencies indicate that these differences in the co-occurrences of non-specific determiner (*a/an*) and specific determiners (*the, our, possessive nominals*) with the Epithet or Classifier are statistically significant ( $p < 0.000$ ). The possessive *its* (n=19), however, tends to co-occur more often with the Epithet (e.g. *its strong US cards business, its normal business*), though its total occurrence is low. It is noticeable that in nominal groups without the Deictic (n=74), the occurrences of the Classifier (e.g. *pensions business, domestic business*) and the Sub-classifier (e.g. *general insurance business, long-term insurance business*) are much lower than in those nominal groups with a specific Deictic, whereas the occurrence of the Epithet is more common (e.g. *difficult business, profitable customer franchise business*).

Table 5 shows the distribution of the occurrences for pairs of the functional elements in the complex nominal groups with *business* as the head noun. Overall, there are some strong tendencies in the pairing of the functional elements. The most common type of pairs is the sequence of Deictic + Sub-classifier + Classifier, which accounts for 45.4% of the 574 identified nominal groups. This functional tendency shows the prominence of the classification in the nominal groups, as well as the structural complexity that is caused by the internal modification. It also indicates that a sequence of three functional elements is prevalent among the *business* nominal groups. The second common type of pairs is the sequence of Deictic + Classifier, which occurs in almost one-fifth (19.8%) of the identified nominal groups, while the third type is the sequence of Deictic + Epithet (14.8%). These three types of functional pairs account for 80% of all the complex nominal groups. Another strong tendency is that the Epithet appears to co-occur less frequently with the Classifier (less than 10% of the nominal groups), suggesting a low likelihood for the two functional elements being bonded together. It further suggests that the experiential structure of the *business* nominal groups is realized less likely by co-occurrence of both a descriptive attribute and a classifying attribute.

Figure 2. Co-occurrences of the Deictic elements with Epithet, Sub-classifier and Classifier

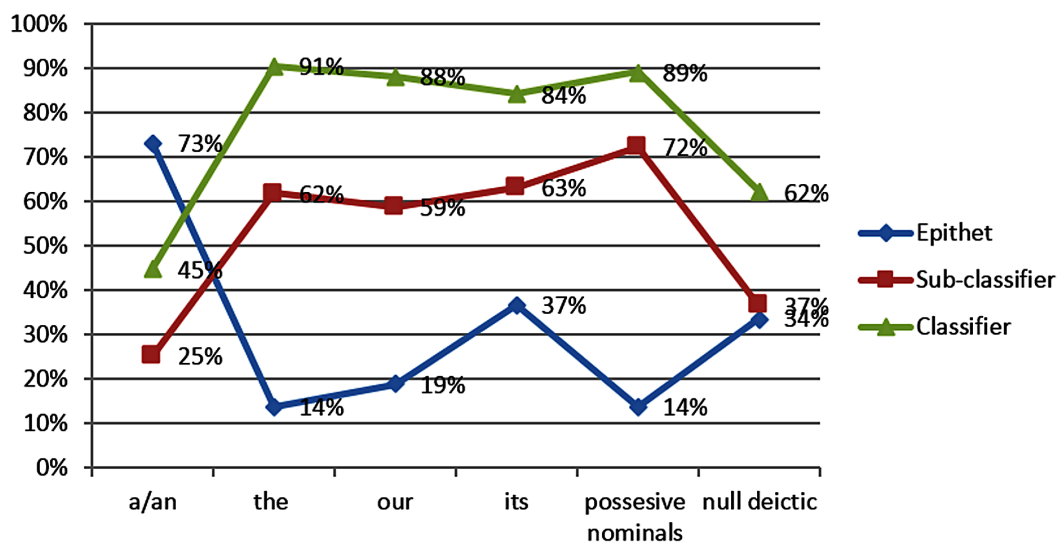


Table 5. Percentage of occurrences for pairs of functional elements

Deictic	+ Epithet	+ Sub-classifier	+ Classifier	+ Thing	Percent	Example
Deictic	+ Epithet			+ Thing	14.8%	<i>a risky business</i>
Deictic			+ Classifier	+ Thing	19.8%	<i>our commodities business</i>
Deictic	+ Epithet		+ Classifier	+ Thing	4.5%	<i>a structured finance business</i>
Deictic		+ Sub-classifier	+ Classifier	+ Thing	45.4%	<i>the insurance brokers business</i>
Deictic	+ Epithet	+ Sub-classifier	+ Classifier	+ Thing	4.0%	<i>the UK's best financial services business</i>
	Epithet			+ Thing	3.3%	<i>new business</i>
			Classifier	+ Thing	3.8%	<i>client business</i>
		Sub-classifier	+ Classifier	+ Thing	4.5%	<i>transaction services business</i>

## DISCUSSION

Drawing on a corpus-based functional approach, the present study has investigated the functional patterns of the complex nominal group, which is a grammatically well-established structure but relatively untouched upon in the field of ESP research. As part of an ESP approach, a corpus linguistic methodology helps in deconstructing business discourse by revealing the lexical features and their unique semantic prosodies, as well as in informing the teaching of Business English (e.g. Nelson, 2006; Walker, 2011). The findings on the experiential and logical structures, as presented in the above section, further our understanding of the register features of corporate annual reports, and provide important corpus evidence that can be used for the design of courses and materials in Business English.

In terms of the experiential structure, the study has shown that from Deictic to Classifier, there are significant differences in the occurrences of the functional elements in the *business* nominal groups used in the annual reports and CEO's letters. The Numerative element was found to have a very low occurrence in the complex nominal groups, which suggests that the realization of the quantitative feature appears to be peripheral in characterizing the head noun *business*. Its relative absence may not be uncommon in the construction of complex nominal groups, as quantity characterization is not treated as a major component of premodification in the descriptive grammars (c.f. Biber, et al., 1999; Quirk, et al., 1985). However, the finding is still interesting, in that the texts that the study examined were financial institutions' corporate reports, in which numerical information is essential to the disclosure of their corporate performance to the public. The finding suggests that nominal groups with multiple premodification appear to be seldom used as the linguistic resource for reporting such accounting information. The study, however, reveals that the *business* nominal groups overwhelmingly favour a marker of definiteness, realized by the definite article and possessives. A striking finding is the frequent use of *our* as the Deictic of the head referent, revealing the rhetorical strategy that the companies employed to report the corporate performance as well as to build a direct, personalized relationship with the audience of the corporate disclosure document. The specific determiners – *the*, *its*, *our*, and other possessives – are used to identify and track the head noun referent *business* within the surrounding text, and their abundant occurrence as the Deictic, therefore, indicates the cohesive function they perform in constructing the business text. Research has already shown that shell nouns or signaling nouns are used to create important textual links and perform both connective and evaluative functions in successful academic writing (Charles, 2003; Flowerdew, 2003). The findings

of the present study suggest that the prevalence of specific Deictics in complex nominal groups also plays an importance role in building cohesive business discourse.

The study found that in the experiential structure, the qualitative features, expressed by the Epithet, occur much less frequently than the attribute of classification in the annual reports. The central and gradable adjectives, i.e. “most adjectival items” (Quirk, et al., 1985, p. 1338), whose function is to describe and characterize the head, are used not as frequently as nominal premodifiers whose function is to define and classify. The finding is particularly significant to the understanding of register features of Business English. As the nominal groups are used as the grammatical structure for packaging dense information (Biber & Gray, 2010; Halliday, 1993), the kind of information that is packaged in the business texts is concerned more with defining and classifying the head referent, than with describing the quality of the head referent. The functional structure of complex nominal groups thus represents a distinctive register feature of the informational writing of annual reports, whose primary goal is to efficiently present information by means of identification, definition and classification. This is different from narrative writing, in which the use of nominal groups is often to describe the qualitative attributes of the head referent or express the writer’s subjective attitude toward the head referent. Bhatia (1993) claimed that the heavy use of complex nominal groups in the advertising texts is to provide more slots for adjectival insertions for the purpose of positive production descriptions. The finding of the study, however, has shown a very different function of multiple premodification in the nominal groups. Instead of facilitating the use of adjectivals, the complex nominal groups in the corporate annual reports function mainly as the linguistic resource for more use of nominal modifiers. The finding, however, echoes Biber and Gray (2011), who, in exploring the historical development of new grammatical functions, discovered the frequent use of nouns as nominal premodifiers in modern scientific writing.

The tendencies of co-occurrences of the premodifiers suggest important grammatical, semantic, and pragmatic associations underlying the different functional elements of nominal groups in the annual reports. The use of indefinite and definite articles shows a distinctive pattern of preference for co-occurrence with the Epithet or the Classifier. The indefinite article tends to favour the company of the Epithet, whereas the definite article strongly prefers to occur with the Classifier. Furthermore, the frequently used specific determiner *our* tends to co-occur more strongly with the Classifier than the Epithet. In the business texts, it is more likely to read a sequence of *a/an + Epithet + business* or *the/our + Classifier + business*. Hoey (2005, p. 61) argues that a word’s grammatical associations, or colligations, control its patterns of use, which are, in turn, primed for particular purposes. Hoey also observes that when the head of a nominal group serves as Subject in the clause, it colligates with specific deictics more often than non-specific deictics (2005, p. 56). The findings of this study suggest two possible, yet opposing interpretations for the colligational patterns of (in)definiteness associated with the functional elements. The choice between indefiniteness and definiteness sets the expectation of which kind of the functional elements, Epithet or Classifier, is likely to occur as the premodifier of the head referent *business*. Or, the occurrence of the articles (and other determiners) in complex nominal groups is strongly primed by the kind of semantic relationship between the premodifiers and the head referent. The repeated use of the sequence *the + Classifier + business* indicates that the subject matter of the head referent *business* is discussed through expanding its referential meaning that is expressed by the Classifier, which specifies the different types of *business*.

Furthermore, the patterns of co-occurrences indicate the pragmatic goals that the writer of the annual reports intended to achieve in constructing this particular genre of corporate communication. As discussed in the above section, most of the Epithet elements are positive adjectives or participles describing favourable attitudes towards or quality of the head referent *business*, e.g. *a new/good/strong/core business, a grounding-breaking/well-managed business*. Halliday and Matthiessen (2004, p. 312) note that “non-specific determiners are used to introduce the discourse referent of the Thing, and specific determiners are used to track this reference in the text”. The co-occurrence of the indefinite article *a/an* with a positive Epithet suggests the positive positioning of the head referent *business*

when it was initially introduced into the text; and through a frequent use of the specific determiner *our* along with the co-occurring Classifiers, the writer switched to a stance of explicit and personalized ownership in further elaboration of the referent *business* in the subsequent text. This may reveal a rhetorical strategy for persuasion in the writing of the annual reports. By drawing on a continuity of the positive discussion of *business*, the writer attempted to create a favorable corporate image as well as to maintain an interpersonal stance of communication with the reader. The patterns of the co-occurrence of specific and non-specific determiners with the Epithet and Classifier, therefore, suggest an important pragmatic function that can be performed by complex nominal groups in the corporate annual reports.

The analysis also shows that the Epithet has a weak tendency for co-occurrence with the Classifier within the same nominal group. They tend to avoid each other in the realization of the experiential structure. This reflects that the nominal groups are used for either describing *business* or identifying *business*, but are less common to include both functions. As the Classifier is nearest to the head, it is the attribute that is most permanent and integral to the head referent (e.g. *credit business, management business, retail business*), whereas the Epithet has less potential of identifying the head referent (e.g. *successful business, sustainable business*). This configuration of the functional elements further suggests that in the construction of the business text like corporate annual reports, an objective way of wording may be adopted when reporting factual information of *business*, whereas in evaluating the operations of *business*, a subjective attitude may be used, along with the use of possessive determiner *our* for personalized communication. Whether such linguistic behavior of *business* can be generalized to other key business lexis is worth further investigation in the research of professional communication in ESP.

In terms of the logical structure, the study has shown some important patterns of hypotactic relations of premodification in the nominal groups. First, there is a strong tendency for the occurrence of sub-modification (Halliday and Matthiessen, 2004) or embedded modification (Biber, et. al. 1999) in the premodifiers. As shown in Tables 3 and 4, the instances of sub-modification occur within both the Epithet and the Classifier, and are realized typically by adverbs in the former and nouns or adjectives in the latter. Such embedding elements do not directly modify the head noun *business*, but disturb the normal order of its premodification. This phenomenon is particularly common before the Classifier element in the nominal groups. A second salient pattern is the expansion of the logical relations realized by the multiple noun sequence. As in these nominal groups, *the company's commodities risk management business, the motor insurance underwriting business, our risk management solutions business*, the noun premodifier closest to *business* is itself modified by a noun, which in turn is premodified by another noun. Halliday and Matthiessen (2004, p. 331) refer to this kind of structure as "a univariate structure", which is generated by repeating the same functional relationship among the premodifying elements. Biber et al. (1999, p. 590) observe that such multiple noun sequences represent two extremes of communicative priorities: they allow for the dense packaging of referent information in premodification, and on the other hand, may result in ambiguous logical relationships between the modifying nouns and head noun. The findings of the study show that the use of multiple noun sequences is abundant in the corporate annual reports, indicating this may be an important register feature of the professional writing.

## CONCLUSION AND PEDAGOGICAL IMPLICATIONS

In summary, the findings of the research show that in the professional texts of Business English, complex nominal groups have distinctive functional and logical structures as well as particular patterns of co-occurrences among premodification. Classification, which is commonly expressed by noun modifiers, was found to be the main function encoded in the experiential structure. This seems to be sharply different from the use of nominal groups for the purpose of description that characterizes general English writing and narrative texts. The frequent use of sub-modification,

especially in classifying elements, reflects the complexity of the internal logical structure in multiple premodification. Finally, the patterns of co-occurrences of premodifying elements show the tendencies of functional associations underlying the configuration of the experiential structure. As current corpus-based ESP research mainly focusing on formulaic language use and collocations, this investigation into complex nominal groups, though a case study of the *business* nominal groups based on a corpus of annual reports, advances our understanding of the register features of Business English, and has important pedagogical implications for the teaching of English for Specific Purposes.

For ESP learners, reading professional business texts, such as annual reports, is often considered as a necessary but daunting learning task, partly due to the heavy use of complex nominal groups in which dense information is compressed. Nominal groups with multiple premodification, which lack grammatical words between a string of lexical words, represent the drive towards economy of expression in informational genre, and meanwhile, they are the most difficult to process. To help ESP learners to develop an ability to comprehend such professional texts of Business English, it is important to design reading tasks that raise their awareness of the experiential meanings that are typically expressed in the multiple premodification. The teaching materials shall be designed and developed in such a way that the learners can see that nominal groups in Business English are used to express different types of meanings from those they encounter in reading materials for general English. The learners shall also learn to appreciate how professional communication texts like annual reports achieve both the informational and persuasive goals through expert use of complex nominal groups. This is particularly useful to L2 learners whose grammatical knowledge of nominal modification is often restricted to adjectival description. For those L2 learners whose first language (e.g. Chinese) only allows for premodification, a contrastive analysis of the premodifying structures between L1 and L2 is likely to facilitate their understanding of Business English texts. The findings of the present study also have implications for the teaching of EAP and ESP writing. Musgrave and Parkinson (2014) found that the use of noun modifier in the writing of L2 learners was atypical of academic writing in general, in that nouns as premodifiers were used relatively infrequently. The study, however, has showed that nominal premodifiers are by far more common than adjectival premodification in the professional writing of annual reports. The teaching of business writing in the ESP course shall not focus only on the practices of complex clausal structures, but shall develop pedagogical tasks that can help increase the learners' understanding and use of compressed multiple premodification as a means of conveying contents in professional communication.

Finally, the findings of the co-occurring patterns are valuable information to the ESP teachers and can be transferred to the classroom though the use of Business English corpora. Learners can be given access to a range of texts to raise their awareness of how premodifying constituents are related to each other to express various semantic, pragmatic, and discoursal meanings in Business English. Variations in nominal group structures can also show the distinction between the definite *the* and indefinite articles *a* in use, which is considered as a perpetual problem in L2 speaking and writing of many ESP learners. An understanding of these register features will develop their genre knowledge of Business English and train them to become an effective communicator in the professional discourse communities. As Hyland (2002) argued, developing students' literacy skills in ESP should be based on the understandings of the specific language, skills, and genres of particular academic and professional communities.

Although a case study approach enables us to undertake a deep and thorough investigation of linguistic behavior of chosen items, it nevertheless has the limitations in the scope of research. This, however, also points us to potential areas of future research on nominal groups in ESP. Research on nominal groups in academic English hypothesized the developmental stages of English academic writing measured by the structural types of premodification and postmodification (Biber, Gray & Poonpon, 2011; Parkinson & Musgrave, 2014). We believe that this line of research can be extended by exploring whether there is a developmental order of the different functional constituents of complex nominal groups in the discourse of professional communication. For example, an interesting

question for ESP scholars and practitioners to address is whether ESP learners acquire the describing constituent (i.e. Epithet) prior to the defining constituent (i.e. Classifier) in developing the complex nominal group. Research can also be advanced by investigating the syntactic status of complex nominal groups at the clause level: whether there is a relationship between various types of nominal groups and the syntactic functions they perform in clause, i.e., subject, object, or complement. Finally, future research can make comparisons of the use of nominal groups between professional business texts and the writing of ESP learners. Such comparative analysis will provide valuable information to course designers, material writers and classroom teachers in the teaching of Business English.

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