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On Generic Macro-structure of Empirical Research Articles: A Management Discourse Community Perspective

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ABSTRACT

Commercial books on research article writing are normally designed to address a wide range of readers in various disciplines. A cursory look at some of them reveals that the conventional Introduction-Method-Result-Discussion (IMRD) framework has been considered as a default blueprint of RAs written in various disciplines. However, this default structure needs to be empirically verified in each and every discipline. Hence, this paper attempted to manually extract the structural patterns of 132 empirical RAs randomly selected out of 22 ISI journals in management. More than 9 structural patterns emerged from the analysis of the results in this study and yet, oddly enough, the IMRD framework was not among them. Findings of this study can shed some light on the path of graduate students and novice scholars who strive to publish their scientific achievements in reputable journals so that they will be accepted as new dwellers of management discourse community.

Keywords: *Academic Writing, Empirical Research Articles, Management Discipline, Conventional Macro-structures, Graduate Students*

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1. Introduction

The growing demands that universities put on their graduate students and academicians to publish their scientific achievements in English journals (Flowerdew, 1999; Swales, 2004) and the dazzling number of 1.1 million peer-reviewed research articles (RAs) published in English in the year 2005 with 4 percent annual increasing rate (Hyland, 2011), can testify that RAs have achieved high status in academia where the very act of "publishing is the main means by which academics establish their claims for competence and climb the professional ladder" (Hyland, 2011, p. 173). However, composing RAs requires special competencies to meet the expectations of a specific academic clique and new comers have to demonstrate their command of literacy competencies if they want not to be treated as aliens. Therefore, any attempt to unravel the complexities of such demanding undertaking in various disciplines can be worthwhile endeavor for graduate students and novice scholars, especially when the non-native English speaking scholars who publish in such journals outnumber their native English speaking counterparts (Swales, 2004).

While courses on RA writing, as part of English for academic purposes (EAP) programs, and books published on academic writing tend to impart the required competencies to students, such courses and books are not normally discipline-specific. That is, they usually tend to be more inclusive and involve a host of disciplines and, as a result, advocate some general rules and frameworks. Introduction-Method-Result-Discussion (IMRD) framework can be considered as one structural pattern advertised in such courses or books and obsession with this framework can be observed in published books on how to write RAs. It seems that either renowned publishers encourage their authors to write their books in a way to be as inclusive as possible or authors of these books are consciously concerned with enhancing the number of the readers of their books. For

instance, although Hartley (2008, p. 8) accepts that IMRD framework is "a charade" and "scientists do not proceed in the way" it suggests, he devotes section two of his handbook on academic writing to detailed elaboration of separate parts of this framework. In the same token, while Gustavii (2008, p. viii) in the preface of his book on writing scientific paper frankly states that "don't accept all my suggestions, because there is no ultimate truth regarding how to write a paper", he follows the IMRD macro-structure to discuss how to write RAs. Lin and Evans (2012, p. 152) consider "the influence of the pioneering work on genre analysis in the 1980s and early 1990s, when the papers chosen for analysis presumably reflected RA writing practices during these and earlier periods", as another possible reason for too much obsession with IMRD framework.

Fortunately, a number of theses, dissertations, books, journal articles, and seminars have been devoted to empirical RAs worldwide and tremendous strides have been made, mostly under the Swalesian banner, to demystify this precious genre. Swales' (1981, 1990) groundbreaking move-based approach to genre analysis has served as a springboard for a number of disciplinary and cross-disciplinary research studies on various sections of RAs, namely Abstracts (A) (e.g., Golebiowski, 2009; Lores, 2004; Piqué-Noguera, 2012), Introductions (I) (e.g., Cortes, 2013; Hirano, 2009; Kawase, 2018; Ozturk, 2007; Samraj, 2002; Sheldon, 2011), Method (M) (e.g., Bruce, 2008; Cotos, Haufman, & Link, 2017; Kanoksilapatham, 2005; Lim, 2006), Results (R) (e.g., Brett, 1994; Bruce, 2009; Lim, 2010; Williams, 1999) and Discussion (D) (e.g., Basturkmen, 2012; Holmes, 1997; Moyetta, 2016; Peacock, 2002; Parkinson. 2011). However, it seems that IMRD framework has enchanted the realm of studies on RAs too. Nwogu (1997), for example, selected his corpus for moved-based analysis of medical RAs solely out of those RAs which had this traditional structural pattern. In move-based study of results section of 20 sociology RAs, Brett (1994) found out some variations in the macro-structures of RAs in this discipline with that of standard framework (IMRD), but "the sections, despite title variations, were grouped within the IMRD framework" (p. 49). For Lim (2006), who examined method sections of management RAs, IMRD framework was also the prerequisite for choosing his corpus of 20 RAs.

In spite of the growing number of move-based studies conducted on specific sections of RAs in various fields of studies, few studies have dealt with identifying the generic structural patterns of RAs. However, the results of these studies are quite illuminating. As a pioneering study, Yang and Allison (2004) examined the macro-structures of 20 empirical RAs in applied linguistics and their results indicated that I, M and R sections (they subsumed the cases of merged Results and Discussion section in their corpus under the Results section) were present in all RAs and Discussion and Conclusion sections appeared in 8 and 13 RAs respectively. They considered four other separate sections as optional, namely 'Theoretical Basis' (5 cases), 'Literature Review' (5 cases) and 'Research Questions/Focus' (3 cases) which appeared between I and M and 'Pedagogic Implication' (6 cases) located after C. Although this detailed information about the macro-structures of RAs in applied linguistics is very valuable for graduate students and novice scholars of this field of study, their ignoring the merged Results and Discussion headings and treating them as a variant of Results section can be considered as a weak point since they unconsciously disregard a style of writing RAs.

Following and extending Yang and Allison's (2004) lead, Lin and Evans (2012) scrutinized empirical RAs in 39 disciplines and the percentages of major structural patterns appeared in their study are as follows: ILM[RD]C (21%), IM[RD]C (15.7%), IMRDC (12.2%), IMRD (12.2%) and ILMRDC (11.8%) (brackets in their study signify merged sections). As the conventional IMRD pattern appeared in 53 RAs in their corpus of 433 RAs, they concluded that this macro-structure is "far from being the default option for organizing contemporary empirical RAs" (p. 153). In a more recent study, Stoller and Robinson (2013) examined the whole sections of 60 empirical RAs in chemistry and their study revealed two major organizational patterns of IMR[DC] and IM[R(DC)]. They found out that RAs in this discipline do not have a separate section under the heading of Literature Review and "references to the literature are incorporated into Introduction and Discussion sections" (p. 52). Kwan (2017) also identified macro-structural variability in two sub-disciplines of

Information Systems, i.e., behavioral science research (BSR) and design science research (DSR) articles. She found new headings of Literature Review (LR), Research Model/Hypotheses (RM/H), Problem/Requirements Analysis (P/RA), Research Paradigm (RP) which come between Introduction and Method sections of RAs in these two disciplines.

These recent findings both provide a caveat that IMRD framework cannot be considered as one-size-fits-all disciplines and invite researchers to examine or reexamine the macro-structures of current empirical RAs in various disciplines objectively to verify the validity of this standard framework which has been the point of reference for academic RA writing courses, materials development projects, and some research studies on empirical RAs. According to Lin and Evans (2012, p. 151), applying this traditional framework as a default structural pattern in selecting empirical RAs for "move-based or linguistic analyses" in a given field of study can jeopardize the reliability of that research study and the findings might turn out to be "incomplete or unrepresentative". Besides, they argue that ignoring some sections like literature review (L), merged results and discussion (RD), and conclusion (C) or subsuming them under four major sections of the traditional framework can result in "overlooking the precise communicative purposes" of such sections.

This study attempts to launch an in-depth examination of empirical RAs in management to pinpoint the macro-structural patterns that are currently in vogue within this field of study. The results of this study revealed that management scholars use more than 9 structural patterns in their empirical RAs and the IMRD framework is not their default one. Furthermore, the sizable number of literature reviews (L) as a separate or merged with hypotheses (LH) and conclusion (C) among the major sections, the high frequency of limitations of the study (Lim), future research directions (F) and managerial implications (Imp) as subheadings of few major sections as well as the presence of 'multiple experiment' as a unique structural pattern are among the distinctive results of this study which merit more attention both for pedagogic and research reasons.

The remainder of this paper is divided into three sections. First, the methodological procedures followed in this study are explained. Then, results are presented and discussed. Finally, conclusion of the study is provided.

2. Methodology

2.1 Compilation of the corpus

This study is based on a corpus of 132 empirical RAs selected out of 22 prestigious academic journals in management with high impact factors listed in the Journal Citation Report. Empirical RA forms one type of RA genre in Swales' (2004) division of RAs and it refers to a study in which data are collected and analyzed to verify a set of hypotheses. Since data collection and analyses are normally included in the method section of a RA, empirical RAs in this corpus were distinguished from other types of RAs by having the heading Method or a variation of this heading (the following headings were also used to represent Method section in this corpus: *Data and Analyses, Study Methodology, Research Setting and Methods, Data and Method, Research Method, Research Design, Research Design and Methodology, The Research,* and *Data*).

Attempts were made to randomly select 6 empirical RAs from the recent issues of each journal. Hence, RAs were selected from three succeeding years of 2009, 2010 and 2011, i.e. two RAs from the issue or issues of each year. However, random selection of RAs was not always feasible due to the paucity of empirical RAs in some journals. In few cases (11 out of 132 RAs) where there were not enough empirical RAs to select two RAs from each of the above mentioned years, more than two RAs were selected from the other two years (3 cases) or the RAs were selected from the year 2012 (7 cases) and in one case the RA was selected from the year 2006 (see Appendix for the list of journals from which RAs were selected).

2.2. Analysis of the empirical RAs

As the goal of this study was to identify the macrostructures of management RAs, it was crucial for the researchers of this study to pinpoint the RAs without any preconception or reliance on what the commercial research article writing books preach. Therefore, five related steps suggested by Biber, Connor, Upton and Kanoksilapatham (2007, p. 13) in order to develop an analytical framework and identify the macro-structures of a given text were followed to achieve the purpose of the study. These step are as follows:

1. Develop the analytical framework: determine set of possible functional types of discourse units, that is, the major

communicative functions that discourse units can serve in corpus.

2. Segmentation: segment each text into discourse units (applying the analytical framework from Step 1).
3. Classification: identify the functional type of each discourse unit in each text of the corpus (applying the analytical framework from Step 1).
4. Text structure: analyze complete texts as sequences of discourse units shifting among the different functional types.
5. Discourse organizational tendencies: describe the general patterns of discourse organization across all texts in the corpus.

The first and foremost step in identification of macrostructures of the corpora of RAs is the development of an analytic framework. Therefore, it was decided to choose 18 similar but not identical management RAs for both the development of an analytic framework and training of researchers of this study who functioned as the coders of RAs as well. These RAs, which belonged to the same journals and time span of the corpora of this study, were divided into three groups to achieve these duel goals in three phases. In the initial phase of pilot-coding, the two researchers of the study began to manually identify the macrostructures of six RAs and share their ideas together. This phase was very useful since the coders were challenged with some novel cases which forced them to ponder, discuss and even negotiate with a few management scholars who were well-versed in the art of English RA writing. The result of this phase was a tentative analytic framework which based the foundation for the second and third independent phases of coding each of which included six other RAs. Before explaining the next two phases of pilot-coding of the remaining 12 RAs and the process of the coding of the corpora of RAs in this study, it should be mentioned that the related literature provided fruitful notions and guidelines which facilitated the process of forming the analytic framework. Hence, explanations about the next two phases of pilot-coding and coding of the corpora of RAs will be provided after a brief overview of the relevant issues.

Headings of sections and sub-sections of RAs seem to be convenient signposts to identify the structural patterns. These headings are classified into "major standard headings", "varied functional headings" and "content headings" (Yang & Allison, 2003, p. 369). The "major standard headings" of various sections of RAs are conventional and Wallwork (2011) enumerates them as Title, Abstract, Introduction (I), Review of the Literature (L), Method (M), Results (R), Discussion (D), and Conclusion (C). However, "Varied functional headings" and especially "content headings" seem to be tricky. Table 1 displays some examples of varied functional headings or content headings encountered in this study which were used instead of conventional section headings. Yang and Allison (2004) are of the view that inexperienced researchers can be led astray by content or varied functional headings and may not be able to pinpoint the real function of a section accurately. Hence, they recommend that researchers consider the communicative purpose of such sections. Besides, Lin and Evans (2012, p. 153) share their experience of analyzing ambiguous sections or those with no headings and suggest that one should consider "their discourse content, linguistic clues indicating section boundaries, their functions in the RA, [and] the authors' apparent intentions". Care was taken to follow these pieces of advice in such cases throughout this study.

Table 1: Examples of Unconventional RA Section Headings

Conventional section headings	Unconventional section headings
Review of the Literature	Conceptual Definition/background, Conceptual framework, Background, Theoretical background, Theory, Theory development, Theoretical context, Conceptual foundation, Theoretical model
Method	Data and Analyses, Study Methodology, Research Settings and Method, Data and Method, Research Method, Research Design, Research Design and Methodology, The Research, Data
Results	Findings, Analyses and Results, Empirical Findings, Analysis, Data Analysis
Discussion	Analysis and Discussion, Practical Implications Managerial Implications, Discussion and Implications, What Do Our Findings Mean?
Conclusion	Summary, Research Summary

As Yang and Allison (2004) point out, sometimes lack of a section heading in a journal might originate from following a specific style of writing in an academic journal. For example, the sixth edition of *publication manual of APA* (2010, p. 27) states that since "the introduction is clearly identified by its position in the manuscript, it does not carry a heading labeling it the introduction." While all the RAs in our corpus had an introduction, 48 RAs (i.e. 36%) did not have a heading for this section. However, our corpus indicates that only 3 journals out of 22 journals consistently omitted this heading and in most cases authors seemed to have the liberty to use or omit it.

A sizeable number of RAs in the corpus had some varied functional or content headings between Introduction and Method sections which equipped readers with some background information needed to follow the study. Therefore, following Lin and Evans (2012, p. 159), Review of the Literature (L) is used as an "umbrella term" to replace these headings which provide some background information to the research study. "This background may be (inter alia) contextual, theoretical or methodological in nature, and may in some cases be in the form of a conventional literature review." Swales' (1990) framework for analyzing introductions: the "Create-a-Research-Space" (CARS) model was quite helpful in distinguishing the boundary of introduction sections within the RAs of the present corpus where this identification was not easily possible at first sight.

After the second and third pilot-coding phases, the two raters of the study shared their findings, resolved their discrepancies and fine-tuned the analytic framework. By the end of the third phase, the two raters reached satisfactory inter-rater reliability and got ready to launch the process of coding the whole corpora of the study independently. However, it was underscored that the analytic framework was not a dyed-in-the-wool scheme and the two raters should expect new heading to emerge in the course of coding of the corpora.

The process of coding the corpora of RAs was launched by the two authors of this study independently. As a strategy to reduce errors in coding, "periodic discussions" between the coders are suggested to pave the way for achieving consensus over discrepancies in ratings over time (Orwin & Vevea, 2009, p. 184). Hence, the two raters held two such sessions during the course of coding the corpora of RAs and shared their few novel cases and fine-tuned the analytic framework which in turn resulted in a fresh coding of the corpora of RAs. The two periodic discussions were very helpful and boosted the raters' confidence because by the end of each session they were reassured that they were on the right track.

Since identifying and coding the macro-structures of RAs require raters' subjective judgments which might endanger the reliability of the study, a set of measures were taken to pave the way for acquiring satisfactory inter-rater reliability. These aforementioned steps included developing analytic framework, coders training and independent coding with periodic discussion. However, inter-rater reliability, as a means to assess the consistency of coding between different coders needs to be determined. Therefore, due to the categorical nature of variables of this study, Cohen's kappa was considered as the main method of determining the inter-rater reliability between the coders. Analysis of the results revealed that the two raters of this study reached the kappa value of .925 for macro-structural identification of the whole corpora of RAs which suggests that macro-structures were reliably demarcated by the two raters.

3. Results and Discussion

The goal of this study was to identify the macro-structures of empirical RAs in management. Four steps enumerated above were followed in the preceding section (i.e., Methodology) and this section aims to present and discuss the results of step 5 (i.e., Discourse organizational tendencies).

3.1. The macro-structures of empirical RAs in management

As Table 2 indicates, a variety of structural patterns were extracted from the corpus of 132 empirical RAs in management. While ILMRDC and ILMRD are among the top two structural patterns, I(LH)MRDC and I(LH)MRD occupy the third and fourth positions. Although Lin and Evans (2012) used brackets to signify merged sections, parentheses are used to represent such sections in this study to reserve brackets to show the boundaries of each study in multiple experiments discussed below. Multiple experiments take the fifth place and ILMR(DC), ILM(RD)C, ILHMRDC and ILMRC occupy the bottom ranks. 15 RAs which had idiosyncratic structural patterns were grouped under the rubric of Others.

As noted above, Lin and Evans (2012) merged two disciplines of Management and Marketing and examined 16 empirical RAs and their results indicated that ILM(RD)C with 6 cases and ILMRDC with 3 cases form the major structural pattern in these two disciplines. While these two structural patterns are present in the corpus of this study, their rank orders are different, i.e. ILMRDC is on the top of structural patterns with 29 cases and ILM(RD)C is solely present in 6 RAs. It can be suggested that a little variation between the results of this study and that of Lin and Evans (2012) might be ascribed to the corpora of these two studies. That is, the present study focused solely on Management discipline, targeted more prestigious journals in this

discipline and garnered greater number of RAs to study. It might be suggested that the corpus of this study is much more representative of the scientific activities of management discourse community and can shed more light on the hidden rhetorical structures of this discipline.

Table 2: Macro-structural patterns of empirical RAs in management

Structural Patterns	No.	%
ILMRDC	29	21.96
ILMRD	26	19.69
I(LH)MRDC	13	9.84
I(LH)MRD	12	9.09
Multiple Experiment	10	7.57
ILMR(DC)	9	6.81
ILM(RD)C	6	4.54
ILHMRDC	6	4.54
ILMRC	6	4.54
Others	15	11.36

3.1.1. Multiple experiments

Multiple experiments comprised 7.57% of the whole corpus of experimental RAs in this study and they are used when researchers present several studies which are conceptually interrelated in one manuscript. In this case, each study might have introduction, method, results and a short discussion and the boundary of each study is usually marked with a relevant title (e.g., Study 1, Study 2). A comprehensive general discussion and a conclusion for the whole work might be included after the last study (APA, 2010). A typical example of multiple experiments found in RAs of this study had the following structural pattern: IL[$_{S1}$IMRD][$_{S2}$IMRCD][$_{S3}$IMRD]DC. This structural pattern indicates that this RA consists of 3 studies each of which is represented by subscript letter 'S' and relevant number (e.g., $_{S1,}$ $_{S2,}$ and $_{S3}$) and square brackets represent the boundary of each study. Although this rhetorical structure was not present in a sizeable number of RAs in this study, its emergence can shed more light on what is prevalent among management scholars when they want to present the results of multiple and related studies within one single RA. Therefore, this macro-structure with its variants might be considered as a unique contribution of this study which is pedagogically valuable. Table 3 shows the 10 multiple experiments found in the corpus of this study.

Table 3: The structural patterns of multiple experiments

Multiple Experiment	No.	%
ILMR[$_{S2}$IMR]D		
IL[$_{S1}$MRD][$_{S2}$IM(RD)](DC)		
I[$_{S1}$ILMRD][$_{S2}$ILMRD]C		
IL[$_{S1}$MRD][$_{S2}$MR]DC		
IL[$_{S1}$M(RD)][$_{S2}$M(RD)]DC	10	7.57
IL[$_{S1}$IMRD][$_{S2}$IMR]DC		
IL[$_{S1}$IMRD][$_{S2}$IMRD][$_{S3}$IMRD][$_{S4}$IMRD]DC		
IL[$_{S1}$IMRD][$_{S2}$ILMRD][$_{S3}$IMRD]DC		
ILH [$_{S1}$M(RD)][$_{S2}$MRD][$_{S3}$MRD]DC		
IL[$_{S1}$IMRD][$_{S2}$IMRCD][$_{S3}$IMRD] DC		

The structural patterns extracted from the corpus of RAs in this study indicate that professional RA writers have a number of options at their disposal, but a cursory glance at handbooks and guides on how to write academic RAs reveals that such options are not usually mentioned and amateur RA writers are left on their own to discover such possibilities. Although it might not be very appropriate to compare the advice given in a number of general handbooks on the structural patterns of empirical RAs with the findings of this study, a recent book published under the rubric of *Academic writing: A guide for management students and researchers* (Monippally & Pawar, 2010) gives an opportunity to achieve this goal. This book devotes 14 pages to enumerating, explaining and illustrating the structure and contents of an empirical paper. As indicated in the preface of the book, the authors' objective is to familiarize an apprentice RA writer with "the broad expectations of readers of academic writing in management" and leave unearthing "the specific expectations" of readers of that community to novice writers (p. xiv). Hence, the only structural pattern advocated in this book is as follows: Introduction, Hypothesis, Method, Results, Discussion, and Closing paragraph. This tentative structural pattern is suggested on the basis of authors' "personal observations and reflections" rather than any research study (p. 58).

One might think that RA courses held in university settings might assist unaided novice RA writers to get familiar with the possible range of structural patterns in each specific discipline. However, such courses are either not available in a number of countries such as Iran or they may not consider the changeable tendency of any specific genre. Jones's (2002, p. 238) confession, for example, might picture the plight of these writers:

… in classrooms, we literacy teachers must simplify and make generalizations, and so we are tempted to provide templates in

order to teach and test our students. Our curricular tendencies are to emphasize regularities and to search for stability so that students can learn some concrete facts about texts. My experience indicates that in many classrooms throughout the world, if issues of writing are discussed at all, the emphasis tends to be on what have been determined to be fixed forms.

Therefore, regarding the mismatch between what theoreticians preach about genres and what researchers discover about them in their empirical quests, Jones (2002, p. 240) is of the view that students should be assisted "to destabilize their often simplistic and sterile theories of texts and enrich their views of the complexity of text processing, negotiation, and production within communities of practice". As a result, the whole gamut of structural patterns identified in this study might help graduate students and novice writers of RAs get familiar with 'the specific expectations' of readers of management community and gradually meet such expectations through guided performance.

3.2. The major sections of empirical RAs in management

Table 4 presents the major sections of empirical RAs in this study. The present corpus suggests that I, M, R and D form almost the compulsory sections of RAs in management. L and C, which appeared in 74.24% and 68.18% respectively, form the quasi-obligatory sections of RAs in this field of study. Some sections have merged counterparts; therefore, if the frequencies of the separate sections are added up with those of their counterparts, the final results will be a little different. That is, by adding up the frequency of L with that of the merged (LH), we can find that L appears in 95.4% of RAs in this study and, as a result, L can also be considered as an obligatory section of empirical RAs in management too. In the same token, C appeared in 77.27% and H in 31.05% of RAs in this corpus.

While Swales and Feak (1994, p. 175), in their three-moved approach to introductions of research papers, solely devoted the second step of move 1 to L and confined its function to "introducing and reviewing items of previous research in the area", Samraj (2002), who examined RAs in two disciplines of Conservation Biology and Wildlife Behavior, considered additional functions for L and argued that it can appear in all three moves considered for introductions. In their groundbreaking study, Yang and Allison (2004) realized that not only L but also additional sections under the rubrics of 'Theoretical Basis' and 'Research Questions' appeared between Introduction and Method sections in some applied linguistics RAs, which were traditionally considered to be part of I. Therefore, the results of this study indicate that the two disciplines of management and applied linguistics have some commonalities in this respect.

Table 4: The major sections in empirical RAs

Major section	Frequency	%
I	132	100
M	132	100
R	130*	98.48
D	123*	93.18
L	98	74.24
C	90	68.18
(LH)	28	21.21
H	13	9.84
(DC)	12*	9.09
(RD)	8*	6.06
(MR)	1	0.75

*Although the corpus of this study included 132 RAs, 10 RAs had multiple experiments and some sections appeared more than once in each RA. Hence, the frequency of few sections is more than the total number of RAs.

Besides, the findings of present study revealed that Hypotheses (H) either as a separate or merged with L (LH) section appeared between Introduction and Method sections in more than 30% of RAs in management. This finding is in line with that of Lin and Evans' (2012) study. They coined the term "orientation" to represent "various kinds of contextual, theoretical and methodological material" that appeared between I and M in RAs of 25 disciplines in their study and they argued that L, considered as part of 'orientation', "recreates and refines the research space initially cleared in I and prepares the ground for the study that is subsequently described in M" (p. 157). All in all, L "is rhetorically a highly demanding part-genre that generally presents greater rhetorical problems than methods and results sections" (Swales & Lindemann, 2002, p. 117) and its pervasive appearance in empirical RAs of management and some other disciplines justifies conducting more empirical studies on this neglected section which can embrace some further subsections.

C forms another deviation with that of standard IMRD framework which was prevalent in more than 68% of RAs of this study. The examination of the content of Conclusion sections of RAs in this study

revealed that this part usually deals with the gist of a study as well as underscoring its important results, managerial implications and new avenues for further studies. A cursory look at the literature reveals that C is part of empirical RAs in other disciplines too. That is, it appeared within more than 73% of RAs in 39 various disciplines (Lin & Evans, 2012), 85% of computer RAs as an isolated C or (DC) (Posteguillo, 1999), 83% of law RAs (Tessuto, 2115), 65% of applied linguistics RAs (Yang and Allison, 2004) and it was a major section in chemistry RAs too (Stoller & Robinson, 2013). One might agree with Lin and Evans (2012, p. 155) who suggest that the high frequency of C in RAs is "attributed to the growing complexity and length of modern RAs". Therefore, it can be suggested that the fledgling part-genre of C is beginning to be an established part of empirical RAs in a growing number of disciplines and both researchers and novice writers need to pay due attention to it since the busy target readers of scientific journals in this fast-paced world might solely resort to Title, Abstract and Conclusion sections of RAs to decide about the relevance of them to their needs.

Some other merged sections, as instances of deviation from IMRD framework, appeared in RAs of this study too, namely (DC, 12 cases), (RD, 8 cases) and (MR, one case). These merged sections deserve special considerations and should draw researchers' attention for further move-based analyses to see whether their functions are the same or different from that of their separate counterparts. Contrary to Yang and Allison's (2004) study in which the merged Results and Discussion was considered as a variant of Results section, Lin and Evans (2012) put them into a new category of (RD), which might be considered as an apt decision since if the "communicative focus" of R and D differ (Yang & Allison, 2003, p. 377), it seems that the communicative purposes of separate R and D with that of (RD) might be different as well. Although Swales and Feak (1994) state that "if Results deal with *facts*, then Discussion deal with *points*; facts are *descriptive*, while points are *interpretive*" (p. 195, emphasis in original), they refer to a study conducted on 20 biochemistry RAs by Thomson (1993) and argue that the "distinction between Results and Discussion is not as sharp as commonly believed" (p. 170). Nevertheless, Stoller and Robinson (2013, p. 51) studied 60 chemistry RAs and their findings revealed three patterns for (RD), namely:

- *Blocked R&D*: In this pattern, a single block of results is followed by a block of discussion. For a set of three results, the pattern would be [Results 1, Results 2, Results 3] [Discussion 1, Discussion 2, Discussion 3]. The organization of a Blocked R&D section is identical to that of separate R&D sections; however, the two sections are merged under a single ''Results and Discussion'' heading.
- *Iterative R&D*: In this pattern, authors alternate between presenting and discussing results. For a set of three results, the pattern is achieved as follows: [Results 1, Discussion 1] [Results 2, Discussion 2] [Results 3, Discussion 3].
- *Integrated R&D*: In this pattern, results are presented and discussed seamlessly, often in the same paragraph or same sentence. The section is written with no obvious delineation between results and discussion.

Therefore, the emergence of a number of separate and merged sections in contemporary RAs of some disciplines, which have been traditionally subsumed under the major sections of stereotyped pattern of IMRD, might give a mandate to researchers to investigate them with a fresh and unbiased perspective and their findings can shed more light on the functions of these new dwellers of RAs. As noted above, Monippally and Pawar (2010) attempted to deal with empirical RAs in their book specifically written for management students. However, their guidelines on how to write each major section are not move-based or drawn from any empirical study and, as a result, what they suggest are too general and concise to help students become autonomous RA writers. Besides, the guidelines of such books might be considered as prescriptive and, as a result, does not allow them to be creative writers. Therefore, it seems that collaborative projects in which applied linguists and experts from other disciplines coalesce into powerful teams can be very fruitful for developing guidebooks on RA writing for specific fields of studies. Stoller and Robinson's (2013) interdisciplinary project in chemistry can be considered as an example.

3.3 The main subheadings of the major sections of empirical RAs in management

This part deals with some subheadings to which scant attention have been paid in

various studies on RAs so far, yet their almost sizable presence in the present corpus could not be ignored. RAs of this study contained four subheadings of 'limitation of the study' (Lim), 'future research directions' (F), 'managerial or theoretical implications' (Imp), and 'Research setting or context' (S). The label 'subheading' was considered for them since they appeared within a few major sections of this study.

Each empirical study might have its own limitations and weaknesses which restrict the applicability of the results and the possible domain of claims. Expressing the limitations of a study can help both the researchers and scholars in their endeavors to make use of the findings of a particular study. According to Swales and Feak (1994, pp. 201-2), stating the limitations of the study "provides an excellent opportunity for the writer to show that he or she understands how evidence needs to be evaluated in the particular field". In the same token, suggestions for further research can oil the wheels of those researchers who are eager to enhance the domains of previous studies by focusing on particular research questions of a research study or improving the research methodology of a previous study. Although expressing the 'limitations of the study' and 'directions for further research' are considered as two optional moves within Swales and Feak's (1994) three-moved approach to deal with Discussion sections of RAs, they appeared in C and (DC) in some cases.

More than 57% of RAs in this corpus had a section entitled 'the limitation of the study' which was located within three major sections of D (45.45%), C (9.84%), and merged DC (2.27%). Previous studies of few disciplines revealed that the heading of the 'limitation of the study' appeared in the Discussion section of medical RAs (Nwogu, 1997) and biochemistry RAs (Kanoksilapatham, 2005), but was part of Discussion or Conclusion sections in applied linguistics (Yang & Allison, 2004). 'Future research directions' appeared in 44.69% of RAs and they were subsumed under the major sections of D (35.6%), C (6.81%), and DC (2.27%). This subheading was used in 53.3% of biochemistry RAs under the major section of Discussion (Kanoksilapatham, 2005).

'Managerial or theoretical implications', which were included in more than 43% of RAs of this study, can be considered as valuable assets of RAs published in management journals since they are suggested by those experts who have some hands-on experience and can be invaluable for novice managers. This subheading appeared under four major headings: D (37.12%), C (4.54%), DC (1.51%), and R (0.75%). It might be a good idea to investigate whether RAs in some other disciplines have such an invaluable and practical subheading which provide applied tips to the members of their discourse community since researchers are sometimes accused that their findings are not applicable in everyday life and, as a result, they are living in their own ivory towers.

Finally, 'Research setting or context' formed the last subheading that was not very common in the present corpus and appeared in 3.78% of RAs within three major sections of H (1.51%), L (1.51%), and M (0.75%). While the setting of research might be mentioned in the method section of research studies, using a separate heading for it might not be very common unless further studies in more disciplines prove the opposite.

Table 5 shows the detailed frequencies of each subheading which appeared under various major headings in the corpus of empirical RAs. The predominant appearance of Lim, F and Imp within Discussion sections of RAs is quiet eye-catching in this table and represents a noteworthy feature of the discipline of management.

Table 5: Subheadings of the major sections in empirical RAs

Sub-heading	Location within a major section	Frequency	Total number	%
Lim	D	60	76	57.57
	C	13		
	(DC)	3		
F	D	47	59	44.69
	C	9		
	(DC)	3		
Imp	D	49	58	43.93
	C	6		
	(DC)	2		
	R	1		
S	H	2	5	3.78
	L	2		
	M	1		

4. Conclusion

Recent campaign launched to identify the range of structural patterns of empirical RAs that professional writers have at their disposal might play an important role in 'destabilizing', in Jones's (2002) word, some taken-for-granted assumptions on RAs in various fields of studies. The present study focused on management RAs and the findings indicated that the presence of major sections of L, (LH), and C with relatively

high frequencies resulted in the absence of the stereotyped IMRD framework among the diverse range of structural patterns identified in this study. However, these structural patterns were tinged with 'multiple experiment', which is not a very common macro-structure in RAs of some other disciplines like applied linguistics. The appearance of headings like Lim, F and Imp, mostly within Discussion section, in almost half of the RAs in the present study underscores their significance in this field of study and these neglected subsections merit further study.

A distinction has been made between competence and performance in applied linguistics which seems to be true for the recent attempts to find the structural patterns of RAs. That is, although having a knowledge of a panoply of macro-structures might be considered as a real asset in RA writing, being aware of a range of possibilities does not guarantee the ability to make use of such options until (inter alia) the rationale behind each choice would be clarified by those who have a hand in extending apprentice writers' schemata. However, a cursory look at most guides and handbooks on RA writing, including a recent one specifically written for management students (Monippally & Pawar, 2010), reveals that such an asset has been overlooked, which bears witness to what Paltridge (2002) considered as the gap between published advice and actual practice. Lack of adequate studies in these areas might be considered as a possible reason for their rare presence in published books. Therefore, the results of this study might help researchers interested in move-based and linguistic analyses of uncharted sections of RAs in this territory or those who aim to find the rationale behind each structural pattern in case more choices are available to select. Furthermore, materials developers for and instructors of management RA courses might take advantage of the findings of this study in their attempt to demystify the nuts and bolts of RAs reading and writing by selecting a sample of authentic RAs with various structural patterns identified in this study to broaden their novice readers' and writers' knowledge about the possible ways that a RA might be structured.

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Appendix: A List of 22 management journals

Academy of Management Journal
Academy of Management Learning & Education
British Journal of Management
Group & Organization Management
Human Relations
Human Resource Management
Human Resource Management Journal
Human Resource Management Review
Journal of Management
Journal of Management Studies
Journal of Operations Management
Journal of Small Business Management
Journal of Supply Chain Management
Management and Organization Review
Management Learning
Omega
Organizational Behavior and Human Decision Processes
Organizational Research Methods
R&D Management
Strategic Organization
Strategic Management Journal
The Journal of Product Innovation Management