A Content Analysis of Hospitality Reports from the Center of Hospitality Research in Cornell University: 2001-2014

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Abstract

This article analyzes 186 hospitality reports from the Center of Hospitality Research in Cornell University. Objectives of the study are to (a) profile the content of hospitality report of the Center of Hospitality Research; (b) identify differences between the findings of hospitality journals research and the results of hospitality reports in the Center of Hospitality Research; and (c) derive emerging trends and make suggestions on future directions regarding hospitality research with industry professionals in the Center of Hospitality Research. Content analysis results showed that the differences between hospitality reports in the Center of Hospitality Research and other journal exit in the research theme and unit of analysis. Finance in the Center of Hospitality Research was increasingly popular, while human resources in other journal were emphasized. The Center of Hospitality Research focused on individual behavior, as well as organizational behavior, while other journal mainly focused on individual behavior. According to the results, hospitality reports in the Center of Hospitality Research will lay more emphasis on finance and decline the research of human resources. Multiple-authorship and collaboration with industry professionals and scholars from other universities will be popular in the Center of Hospitality Research.

Keywords

1. Introduction

The Center of Hospitality Research (CHR) is the leading source for quality research on and for the hospitality industry and it is committed to the cooperation with industry leaders for development of new ideas, theories, and

models that improve strategic, managerial, and operating practices. The cooperation with industry leaders makes the reports of CHR more practical. In recent times, the study of publications in hospitality journals has increased considerably. Although much research has been conducted, no comprehensive review of hospitality reports of CHR can be found. As the hospitality reports of CHR have been emerged for 14 years and the number of reports shows a rising trend, an inventory of what has been done, what's the difference with hospitality journals, and the identification of new directions and challenges for the future will be quite useful. Therefore, this study seeks to address this need by taking an inventory of the hospitality reports of CHR since the emergence of the reports in 2001. The objectives of the study are as follows:

1) To profile the content of hospitality report of CHR based on institutional contribution, authorship, theme, nature of articles and statistical method, unit of analysis, and industry segment;

2) To derive emerging trends and make suggestions on future directions regarding hospitality research with industry professionals; and

3) To identify differences between the findings of hospitality journals research and the results of hospitality reports in CHR.

2. Review of Research on Hospitality Journals

Several scholars have examined past research efforts in hospitality and tourism journals. The analyses in these studies can be classified into three major streams: (1) institutional contributions and authorship analysis, which aims to identifying the institutions or authors which contributed the greatest number of research articles, with the primary purpose of ranking institutions and authors [1]; (2) statistical techniques and research designs which refers to analyzing research by looking at statistical methods used, research method, unit of analysis, and the nature of the research [2]; and (3) research theme and industry segment analysis [3].

The most recent research of the hospitality journal was conducted by Nelson & Cathy [4]. With a content analysis employed, the authors identified and analyzed 119 articles about tourism and hospitality research on China-related topics published in tourism and hospitality journals in 2011. Using four major databases, namely, Hospitality and Tourism Index, Sage Journals Online, Science Direct, and Emerald Insight, Nelson & Cathy found multiple-authorship and collaboration with scholars from other universities became popular, regardless of geographic area. Tourism development, consumer behavior, and hotel development were identified as the top three themes. The number of articles used sophisticated research methods is growing, and advanced statistical tools were employed by authors in their analysis, but, still, descriptive statistics, factor analysis, and regression analysis were the most popular statistical method adopted by scholars.

Manuel & Randall (2008) employed a content analysis to analyze 156 articles from IJHM from 2000 to 2005, and found that the common statistical methods were correlations, descriptive statistics, and regression analysis [5]. The authors indicated that 82% of article published in the IJHM from 2000 to 2005 were empirical and the dominant industry of the articles published in the IJHM were lodging and food services, with 47% and 24%, respectively [5].

Seyhmus & Lisa (1999) conducted a content analysis to examine 1073 main articles published in five primary hospitality management journals (Cornell Hotel and Restaurant Administration Quarterly, Hospitality Education and Research Journal, International Journal of Hospitality Management, International Journal of Contemporary Hospitality Management, and FIU Hospitality Review) for a 7-year period (1990-1996) and found that the articles were mainly focusing on human resources, administration/strategy, and marketing [2]. For industry segment, lodging and food service combined and lodging industry were the top two industries. The authors found 67.9% articles were empirical and most of the articles dealt with problems and issues were related to individual behavior (68.6%) [2].

Simon & Ken (1992) reported 653 articles in five leading hospitality-related journals (Cornell Hotel and Restaurant Administration Quarterly, Hospitality Education and Research Journal, International Journal of Hospitality Management, Journal of Travel Research, and FIU Hospitality Review), performing a content analysis, for the period 1983-1989. The findings revealed that human resources, marketing and administration were mostly involved. Besides, the analysis mainly focused on tourism and lodging. Also, their findings suggested that the majority of articles used descriptive statistics, t-test, and regression [3].

Previous studies have focused on theme, research design, industry segment, unit of research, institutional contribution, and statistical techniques to reveal the trends over the years and the orientation of academic journals.

3. Methodology

This study analyzed 186 hospitality reports from CHR over a 14-year period, from 2001 to 2014. The CHR was selected because it is the leading source for quality research on and for the hospitality industry and it works with industry leaders. A content analysis was conducted based on the selected articles. Following previous investigations (e.g. Jogaratnam, 2005; Huang and Hsu, 2008; Nelson & Cathy, 2011; Seyhmus & Lisa, 1999; Manuel & Randall, 2008), the analysis of each report focused on institutional contribution, authorship information, nature of the study, statistical methods , research theme, unit of analysis and industry segment [1] [2] [4] [6]. For the purposes of this study, the quantity of research contribution is operationally defined as the number of author appearances and is based on a simple count of reports published, and the institutional contributor of authors who are industry professionals is classified as industry. To clarify, if there are several authors on an article, each author is given the same amount of credit for having a publication as an author who had published a report with only his/her name on it. In other words, credit is not adjusted to give only partial credit for joint authorship. Each report was also grouped in one of the seven functional areas borrowed from Chon, Evans, & Sutherlin (1989), Crawford-Welch & McCleary (1992), Zibin & Hong (2007), Qingjie, Guishun, & Guangpeng (2013) and Chengqiang (2013) based on the following topics in this study:

1) Human resource: employee selection and training, turnover, job satisfaction, employee attitude, sexual harassment, labor costs, empowerment, employee benefits, organizational behavior, employer/employee liabilities, and workforce diversity.

2) Marketing: customer satisfaction and loyalty, service quality, marketing mix (product, place, price, promotion), segment, target marketing, branding, and market research.

3) Operations: inventory management and purchasing, facility management, management contracts, liabilities and legal issues, safety and security, productivity, sanitation, energy and waste management, menu engineering and planning, food cost management, and quality control.

4) Finance: asset management, buyouts, profitability, economic forecasting, financial analysis and management, valuation techniques, financial statements, and cash flows.

5) Administration/strategy: strategic planning, management styles, accounting, organization, organizational structure, crisis management, information, communication, and environmental trends.

6) Research and development: technological advancements, information gathering and analysis, development, and innovations.

7) Preparation to establish: establish planning, construction management, management system establishment [3] [7]-[10].

For the nature of the report, this article followed Seyhmus & Lisa, using conceptual and empirical dichotomy, which were appropriate based their definitions [2]. In this study, conceptual articles were defined as those that describe and discuss concepts and did not employ a statistical analysis or those that employ basic calculations based on hypothetical data. Empirical articles (qualitative or quantitative) are identified as those that employ one or more statistical techniques ranging from basic to multivariate. Once the article is deemed as empirical or conceptual, it is then classified by the data source, which can be primary or secondary. Reports were classified into different research themes and the appearance of different themes was coded by year. To categorize each article by statistical method used, the study used a list of statistical methods used by Chris (2015) in a study of the trends of hospitality management and each method is given the same amount of credit [11]. In order to provide some insight on the progress of research, all the techniques used were considered during the analysis of each report. Other categories used include unit of the analysis, which consists of individual, organization, industry, and nation according to and nation according to Kirkman & Law (2000) [12], and the segment of the industry, which is divided into lodging, food services, hospitality, tourism, airline, and real estate according to and real estate according to Manuel & Randall (2008) [5]. Two authors were responsible for data coding and classification. Referring to the coding method of Kolbe and Burnett (1991) [13], each author worked independently; however, in cases of disagreements, two authors jointly reviewed the work until a consensus was reached. This procedure ensured data validity and reliability.

4. Results and Discussion

4.1. Overview of Reports Published

From 2001 to 2014, altogether 205 reports were published in the CHR. Overall the number of the reports re-

vealed an increasing tendency with a slight drop in 2008 and a big fluctuation during 2011 and 2014 (**Figure 1**). In order to eliminate duplicates, this study includes all the reports published from 2001 to 2014, except compendium reports, annual reports and the repeated ones. For the purpose of this study, 186 reports were extracted for analysis. The expurgated reports include 13 compendium reports, 4 annual reports, which are the summaries of all the reports, and two repeated reports.

4.2. Institutional Contribution

During the investigated period (2001-2014), a total of 43 universities had affiliated member(s) who published at least one report in the Center for Hospitality Research (CHR). The institutions of authors who are industry professionals are classified as "Industry". Besides, 7 authors without authorship profiles in the report are categorized as "others". The number of contributing authors at each institution heavily influences the total number of institutional contributions. However, it should be noted that, because of the large number of authors from Cornell University, this study sorted out the author from Cornell University, and divided Cornel University into three parts (School of Hotel Administration at Cornell University, Center for Hospitality and Cornell Hospitality Quarterly) according to the affiliations of authors.

Table 1 shows that a total of 45 institutions and universities (include "Industry" and "Others") contributed to 391 instances with 153 authors. For the 43 informed institutions (exclude "Industry" and "Others"), twenty nine of these are US institutions, two each are in Singapore, Spain, Canada and Italy, and one each in Russian, Finland, India, Hong Kong, and China, respectively. Cornell University is heavy contributors to the hospitality reports. The top 3 institutions belonging to Cornell University contributed 267 instances over 14 years, accounting for 68.3% of all instances.

Given that the number of contributing authors influences the institutional contribution, a more useful measure may be the mean productivity per author (the ratio of instances to contributing authors at a given institution). Based on this criterion, Cornell Hospitality Quarterly, the Center for Hospitality Research, Cornell Nanyang Institute of Hospitality Management, the University of Pavia, and School of Hotel Administration at Cornell University, were the top five efficient with mean productivity scores of 15.00, 11.00, 8.00, 6.00 and 3.48, respectively. School of Hotel Administration, the instance-top-ranked institution in terms of number of author appearances, obtained a mean productivity level of 3.37 per contributor. Additionally, the proportion of the instances in Industry is 9.5%, and the mean productivity is 1.28.
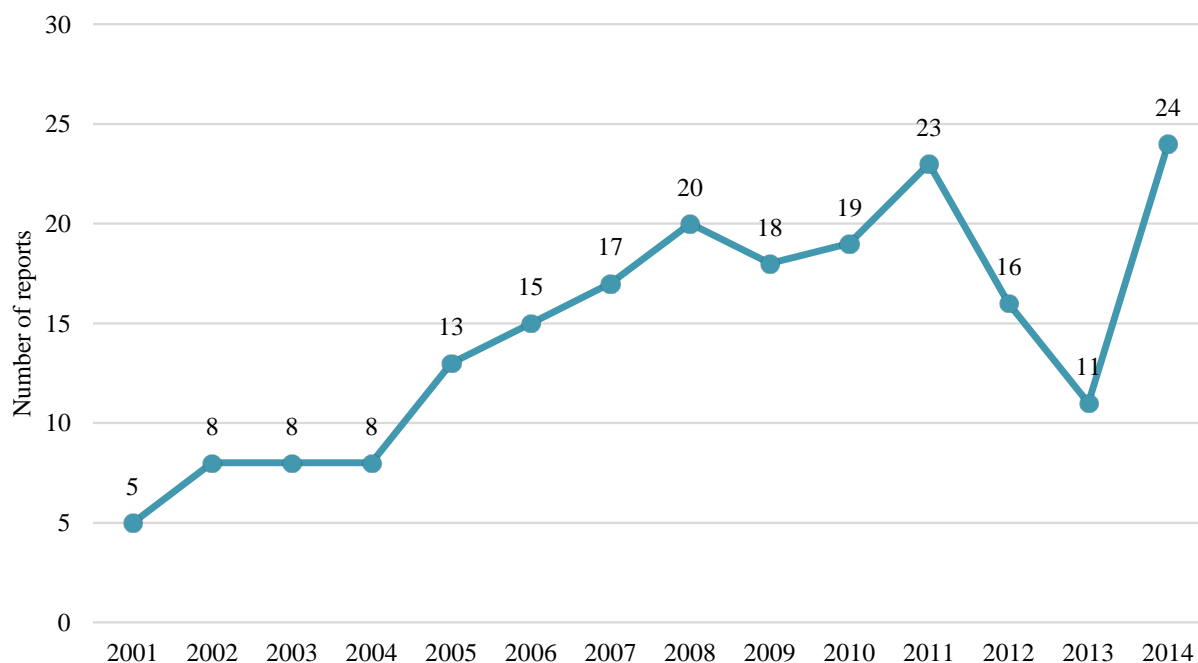

Figure 1. Hospitality reports of CHR by year.

Table 1. Research contributions by affiliations or universities (2001 to 2014).

Affiliation or University	Geographic region	Instances	Number of authors appearance	Mean productivity
School of Hotel Administration at Cornell University	USA	219	63	3.48
Center for Hospitality Research	USA	33	3	11.00
Cornell Hospitality Quarterly	USA	15	1	15.00
Cornell Nanyang Institute of Hospitality Management	Singapore	8	1	8.00
Michigan State University	USA	6	3	2.00
University of Pavia	Italy	6	1	6.00
Ithaca College	USA	4	2	2.00
University of Utah	USA	4	4	1.00
Polytechnic University of Valencia	USA	4	2	2.00
Boston University	USA	3	2	1.50
Pennsylvania State University	USA	3	1	3.00
University of Victoria	Canada	3	1	3.00
Mississippi State University	USA	2	1	2.00
National Research University	Russian	2	1	2.00
Rice University	USA	2	1	2.00
Texas A & M University	USA	2	2	1.00
University of Castilla-La Mancha	Spain	2	2	1.00
University of Denver	USA	2	1	2.00
University of Vermont	USA	2	1	2.00
California State University	USA	1	1	1.00
Chapman University	USA	1	1	1.00
Chinese University of Hong Kong	HK	1	1	1.00
College of William	USA	1	1	1.00
Georgetown University	USA	1	1	1.00
Georgia Institute of Technology	USA	1	1	1.00
Georgia State University	USA	1	1	1.00
Hanken Swedish school	Finland	1	1	1.00
Idaho State University	USA	1	1	1.00
London Business School	USA	1	1	1.00
Massachusetts Institute of Technology	U.K.	1	1	1.00
McGill University	Canada	1	1	1.00
National University of Singapore	Singapore	1	1	1.00
Pepperdine University	USA	1	1	1.00
Plymouth State University	Spain	1	1	1.00
Samuel Curtis Johnson Graduate School	India	1	1	1.00

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The Ohio State University	USA	1	1	1.00
University of Alabama	USA	1	1	1.00
University of Central Florida	USA	1	1	1.00
University of Richmond	USA	1	1	1.00
University of Sassari	Italy	1	1	1.00
Vanderbilt University	USA	1	1	1.00
Washington University	USA	1	1	1.00
Zhejiang University	China	1	1	1.00
Industry	-	37	29	1.28
Others	-	8	7	1.14
Total		391	153	2.49

Note: Instances = number of times an author from a given university contributed to a research article partially or wholly.

4.3. Authorship Information

In order to identify the degree to which authors contribute to the reports, repeat contributions by authors over the period (2001-2014) were tabulated. Following the scheme adopted by Sheldon (1991) and Giri (2004) with a relatively minor modification in the number of instances, authors are classified into one-time authors, moderately contributing authors (more than one and less than six instances), and intensely contributing authors (more than six instances) [1] [14]. **Table 2** provides information on repeated authors. Although the dominant share of articles (60.8%) was contributed by one-time authors, the total repeated authors contributed 298 instances, accounting for 76.2% of the total instances.

To obtain a sense of those authors identified as intense contributors, we also report the names of leading researchers those who have made two or more contributions to the hospitality reports assessed in this study (**Table 3**). There are 12 authors deemed as intense contributors. Of these, ten authors are from School of Hotel Administration at Cornell University, and the other two are from the University of Sassari and Cornell Nanyang Institute of Hospitality Management, respectively. Besides, authors often publish in journals not included in this study. Therefore, this statistic does not necessarily represent the overall productivity of the authors or the institutions where they are based.

Table 4 outlines the number of sole authored and co-authored reports. Generally, sole authored studies accounted for less than one third of the reports analyzed (29.2%), indicating a downward trend from 2001 to 2014, while the co-authored studies showed a rising trend, which was compatible with the research of [4]. Among the co-authored studies, although two-authored studies were in the dominant position, a slight increase in studies with multiple authors was noted. A review of the multiple-authorship profile revealed that collaborating authors usually came from the different universities and the Industry. This could be due to the realization that views form the hospitality industry and authors with various backgrounds can foster research in various contexts and allow for improvement in research value and contribution.

4.4. Research Theme

Reports were categorized in seven areas according to the content of the hospitality reports (**Table 5**). Marketing area was found to be popular in the Hospitality Reports. It has been emphasized during the period (2005 & 2006). Marketing comprised the greatest number of reports, which accounted for 33.9% of all reports, followed by operations, representing 15.6% of total reports. Research and development and human resources received almost equal attention with 13.9% and 13.4% of total reports, respectively. Reports about marketing clearly dominate each year examined in this study, with the exception of 2001and 2001 when reports about operations issues were most prevalent. Likewise, the areas of administration/strategy and finance were almost the least researched areas for each of the six periods studied. The findings of this study are different with that of Nelson & Cathy (2011),

Table 2. Repeat contributions by authors (2001-2014).

Total number of authors	One time[a] authors N (%)	Moderately[b] contributing authors N (%)	Intensely[c] contributing authors N (%)
153	93 (60.8)	48 (31.4)	12 (7.8)

[a]Authors contributing one instance; [b]Authors contributing more than one, but less than six instances; [c]Authors contributing six or more instances.

Table 3. Repeat authors (sorted by instance).

	Author	Institution	Instance
1	Sheryl E. Kimes	School of Hotel Administration at Cornell University	30
2	Cathy A. Enz	Center for Hospitality Research	28
3	Rohit Verma	School of Hotel Administration at Cornell University	21
4	Linda Canina	School of Hotel Administration at Cornell University	17
5	Kate Walsh	School of Hotel Administration at Cornell University	12
6	Gary M. Thompson	School of Hotel Administration at Cornell University	11
7	Michael Lynn	School of Hotel Administration at Cornell University	10
8	Michael C. Sturman	School of Hotel Administration at Cornell University	9
9	Judy A. Siguaw	Cornell Nanyang Institute of Hospitality Management	8
10	Gabriele Piccoli	University of Sassari	7
11	Alex M. Susskind	School of Hotel Administration at Cornell University	6
12	Chris K. Anderson	School of Hotel Administration at Cornell University	6
13	Bill Carroll	School of Hotel Administration at Cornell University	5
14	David Sherwyn	Center for Hospitality Research	5
15	J. Bruce Tracey	School of Hotel Administration at Cornell University	5
16	Judi Brownell	School of Hotel Administration at Cornell University	5
17	Breffni M. Noone	Pennsylvania State University	4
18	Chekitan S. Dev	School of Hotel Administration at Cornell University	4
19	John B. Corgel	School of Hotel Administration at Cornell University	4
20	Mark Lomanno	Industry	4
21	Stephani K.A. Robson	School of Hotel Administration at Cornell University	4
22	Steven Carvell	School of Hotel Administration at Cornell University	4
23	Clay M. Voorhees	Michigan State University	3
24	Crocker H. Liu	School of Hotel Administration at Cornell University	3
25	Eric Ricaurte	Center for Hospitality Research	3
26	Erica Wagner	School of Hotel Administration at Cornell University	3
27	Liana Victorino	University of Victoria	3
28	Michael McCall	Ithaca College	3

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29	Pamela C. Moulton	School of Hotel Administration at Cornell University	3
30	Peng Liu	School of Hotel Administration at Cornell University	3
31	Qingzhong Ma	School of Hotel Administration at Cornell University	3
32	Robert J. Kwortnik	School of Hotel Administration at Cornell University	3
33	Timothy R. Hinkin	School of Hotel Administration at Cornell University	3
34	Tony Simons	School of Hotel Administration at Cornell University	3
35	William J. Carroll	School of Hotel Administration at Cornell University	3
36	Andrey D. Ukhov	School of Hotel Administration at Cornell University	2
37	Angel Peiró-Signes	Polytechnic University of Valencia	2
38	Arturs Kalnins	School of Hotel Administration at Cornell University	2
39	Daniel C. Quan	School of Hotel Administration at Cornell University	2
40	Daniel J. Connolly	University of Denver	2
41	Dennis Reynolds	Others	2
42	Ekaterina Karniouchina	University of Utah	2
43	Howard G. Chong	School of Hotel Administration at Cornell University	2
44	HyunJeong "Spring" Han	National Research University	2
45	Jie J. Zhang	School of Hotel Administration at Cornell University	2
46		Joel E. Collier	2
47	Masako S. Taylor	School of Hotel Administration at Cornell University	2
48	Matthew C. Walsman	School of Hotel Administration at Cornell University	2
49	Michael Dixon	School of Hotel Administration at Cornell University	2
50	Michael Giebelhausen	School of Hotel Administration at Cornell University	2
51	Nitin Joglekar	Boston University	2
52	Paolo Torchio	Industry	2
53	Roger Calantone	Michigan State University	2
54	Sean A. Way	School of Hotel Administration at Cornell University	2
55	Shuo Wang	School of Hotel Administration at Cornell University	2
56	Stephen A. Mutkoski	School of Hotel Administration at Cornell University	2
57	Susan S. Fleming	School of Hotel Administration at Cornell University	2
58	Sybil S. Yang	School of Hotel Administration at Cornell University	2
59	Utpal Dholakia	Rice University	2
60	Wayne J. Taylor	Industry	2
	Total		298

Table 4. Single author versus co-authorship.

Author	Year of publication							Total N (%)
	2001 & 2002 N (%)	2003 & 2004 N (%)	2005 & 2006 N (%)	2007 & 2008 N (%)	2009 & 2010 N (%)	2011 & 2012 N (%)	2013 & 2014 N (%)	
Sole author	3 (30.0)	9 (47.4)	9 (34.6)	11 (30.6)	9 (26.5)	8 (22.9)	7 (21.9)	56 (29.2)
2 authors	4 (40.0)	9 (47.4)	13 (50.0)	16 (44.4)	13 (38.2)	16 (45.7)	13 (40.6)	84 (43.7)
3 authors	3 (30.0)	1 (5.2)	3 (11.5)	6 (16.7)	7 (20.5)	9 (25.7)	8 (25.0)	37 (19.3)
≥4 authors	-	-	1 (3.9)	3 (8.3)	5 (8.8)	2 (5.7)	4 (12.5)	15 (7.8)
Total	10 (100)	19 (100)	26 (100)	36 (100)	34 (100)	35 (100)	32 (100)	192 (100)

Table 5. Research theme by year.

Theme	Year of publication							Row total N (%)
	2001 & 2002 N (%)	2003 & 2004 N (%)	2005 & 2006 N (%)	2007 & 2008 N (%)	2009 & 2010 N (%)	2011 & 2012 N (%)	2013 & 2014 N (%)	
Marketing	1 (10.0)	4 (30.8)	8 (30.8)	16 (44.4)	13 (38.2)	12 (34.3)	9 (28.1)	63 (33.9)
Operations	3 (30.0)	3 (23.1)	3 (11.5)	3 (8.3)	4 (11.8)	5 (14.3)	8 (25.0)	29 (15.6)
Research and development	2 (20.0)	2 (15.4)	4 (15.4)	2 (5.6)	6 (17.6)	6 (17.1)	4 (12.5)	26 (13.9)
Human Resources	2 (20.0)	2 (15.4)	5 (19.2)	10 (27.8)	-	4 (11.4)	2 (6.3)	25 (13.4)
Administration/ strategy	1 (10.0)	1 (7.7)	4 (15.4)	2 (5.6)	8 (23.5)	4 (11.4)	3 (9.4)	23 (12.4)
Finance	1 (10.0)	1 (7.7)	2 (7.7)	3 (8.3)	3 (8.8)	4 (11.4)	5 (15.6)	19 (10.2)
Preparation to establish	-	-	-	-	-	-	1 (3.1)	1 (0.5)
Column total	10	13	26	36	34	35	32	186 (100)

Seyhmus & Lisa (1999), and Simon & Ken (1992) who pay more attention on marketing, human resources, and administration [2]-[4]. Additionally, the number of marketing and operations were relatively stable from 2001 to 2014. The finance was increasing since the period of 2003 & 2004, while human resources showed some downward shifts. We should notice that Preparation to establish first emerged in 2014.

Table 6 seeks to be an exhaustive listing of topics belonging to seven themes. None of the reports analyzed did overlap classifications. For marketing, the sub-theme involved were classified into 8 topics, in which traditional marketing concerns continue to require direct as well as indirect collections of data about hotel guests and non-guests. Marketing mix accounted for 39.7% of all the reports. Basic marketing needs remain as to why guests select hotels, followed by segment and loyalty schemes. Energy and waste management received the most attention in operations, indicating that hospitality industry is stepping up its environmental awareness. Another topic emphasized in operations is how to control equality. Authors laid emphasis on information gathering and analysis, the advance of technology, and innovative practices in hospitality research. For human resources research, many of the problems seem to have remained a constant. Organizational behavior, turnover, employee benefits, and employee selecting and training are the main areas in the reports studied. Labor turnover of staff remains an issue as the need to operate each day of the year. Besides, management has sought to combine the financial, human resources, marketing issues, operations problems, and the other aspects into an integrated whole. Strategy, almost by definition, requires an outward orientation as a company seeks to position itself within a market, but by the same token any such positioning has implications for internal organization. The

Table 6. Sub-theme.

Theme	Sub-theme	Number of reports
Marketing	marketing mix	25
	market research	14
	segment	6
	customer loyalty	6
	service quality	4
	Customer Satisfaction	4
	target marketing	2
	branding	2
Operations	energy and waste management	10
	quality control	6
	Safety and Security	4
	menu engineering and planning	2
	liabilities and legal issues	2
	facility management	2
	productivity	1
	management contracts	1
	inventory management and purchasing	1
Research and development	information gathering and analysis	10
	technological advancements	7
	innovations	6
	development	3
Human Resources	organizational behavior	5
	Turnover	5
	employee benefits	4
	employee selection and training	4
	employee attitude	2
	employer/employee liabilities	2
	workforce diversity	2
	employee benefits	1
Administration/strategy	strategic planning	7
	environmental trends	6
	communication	5
	crisis management	3
	information	1
	management styles	1
Finance	profitability	11
	financial analysis and management	4
	economic forecasting	2
	buyouts	1
	valuation techniques	1
Preparation to establish	construction management	1
Total		186

analysis of environmental trends is conducive to strategy planning ranking the first in administration/strategy. Profitability comprised the greatest number of reports for financial research, accounting for 57.9%.

4.5. Nature of Reports and Statistical Methods

Table 7 shows the nature of reports by a two-year period to examine trends of empirical and conceptual research. The reports maintained a relatively stable state during the period studied. Overall, 84.9% of the articles were based on empirical studies, and 15.1% were conceptual, which is similar to the research of Manuel & Randall (2008) [5]. It is not the intent of this discussion to claim that conceptual research is less important than empirical research. The relevance is due to the fact that empirical research enables the testing of theories in the field of hospitality according to Manuel & Randall (2008) [15]. For the 158 empirical articles, a total of 74 used secondary data, accounting for 46.8% of empirical reports (**Figure 2**), while 84 used primary data. The proportion of empirical kept increasing until 2007 & 2008, and it started to dwindle since 2007 & 2008. Conducting primary research is a useful skill to acquire, as it can greatly supplement research in secondary sources.

Measurement of progress and credibility could be measured by the gaining of statistical and methodological sophistication, according to Baloglu and Assante (1999) [15]. During the time span of this analysis, a total of 25 kinds of statistical method was used. **Figure 3** shows that the number of the types indicated an increasing tendency with the diversification of statistical method used in reports. **Table 8** details the statistical methods employed in empirical reports during 2001-2014, providing insight into the popularity of various methods. Descriptive statistics, accounting for 67.6% of the whole instances, were extensively used across many reports, whereas regression analysis (13.4%)) and correlations (8.9%) were also frequently used. These findings are somewhat different with those of Baloglu & Assante (1999) and Manuel & Randall (2008) who were focusing on hospitality research in IJHM and the descriptive statistics frequencies increased, while the other two declined [5] [15]. However, the proportion of descriptive statistics began to decline during the period of 2007 & 2008.
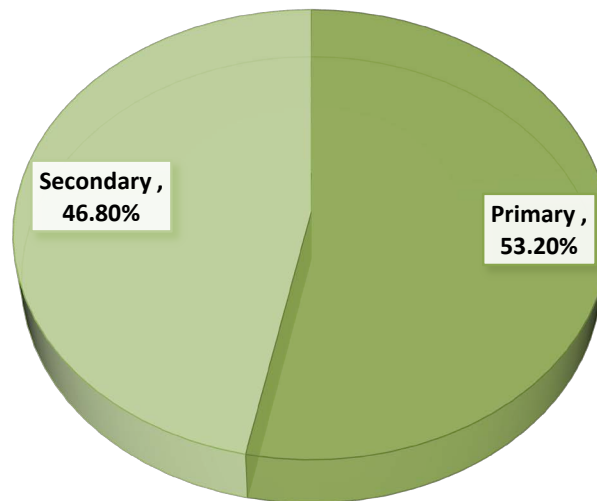

Figure 2. Data sources of the empirical reports.

Table 7. Nature of report by year.

Nature of report	Year of publication							Row total N (%)
	2001 & 2002 N (%)	2003 & 2004 N (%)	2005 & 2006 N (%)	2007 & 2008 N (%)	2009 & 2010 N (%)	2011 & 2012 N (%)	2013 & 2014 N (%)	
Empirical	7 (70.0)	11 (84.6)	23 (88.5)	34 (94.4)	29 (85.3)	30 (85.7)	24 (75.0)	158 (84.9)
Conceptual	3 (30.0)	2 (15.4)	3 (11.5)	2 (5.6)	5 (14.7)	5 (14.3)	8 (25.0)	28 (15.1)
Column total	10 (100)	13 (100)	26 (100)	36 (100)	34 (100)	35 (100)	32 (100)	186 (100)

Table 8. Statistical methods.

| Statistical method used	Instance by year							Row total N (%)
	2001 & 2002 N (%)	2003 & 2004 N (%)	2005 & 2006 N (%)	2007 & 2008 N (%)	2009 & 2010 N (%)	2011 & 2012 N (%)	2013 & 2014 N (%)	
Descriptive	7 (53.8)	11 (78.6)	22 (59.5)	34 (60.7)	27 (60.0)	30 (50.8)	24 (53.3)	155 (67.6)
Regression analysis	1 (7.7)	1 (7.1)	6 (16.2)	7 (12.5)	3 (6.7)	11 (18.6)	7 (15.6)	36 (13.4)
Correlations	4 (36.4)	1 (7.1)	6 (16.2)	6 (10.7)	1 (2.2)	5 (8.5)	1 (2.2)	24 (8.9)
ANOVA	-	-	3 (8.1)	1 (1.8)	4 (8.9)	4 (6.8)	2 (4.4)	14 (5.2)
Cluster Analysis	-	-	-	-	2 (4.4)	1 (1.7)	2 (4.4)	5 (1.9)
Factor analysis	-	-	-	2 (3.6)	1 (2.2)	1 (1.7)	-	4 (1.5)
Aggregate analysis	-	-	-	1 (1.8)	-	3 (5.1)	-	4 (1.5)
Pearson Chi-Square	-	1 (7.1)	-	2 (3.6)	-	-	-	3 (1.1)
Cross-sectional analysis	-	-	-	-	-	1 (1.7)	2 (4.4)	3 (1.1)
Path Analysis	-	-	-	2 (3.6)	-	-	-	2 (0.7)
t-tests	-	-	-	-	1 (2.2)	-	1 (2.2)	2 (0.7)
ANCOVA	-	-	-	-	1 (2.2)	1 (1.7)	-	2 (0.7)
Robustness Checks	-	-	-	-	-	1 (1.7)	1 (2.2)	2 (0.7)
Time series analysis	-	-	-	-	-	-	2 (4.4)	2 (0.7)
Date-envelopment Analysis	1 (7.7)	-	-	-	-	-	-	1 (0.4)
Reliabilities	-	-	-	1 (1.8)	-	-	-	1 (0.4)
Related analysis	-	-	-	-	1 (2.2)	-	-	1 (0.4)
Discriminant analysis	-	-	-	-	1 (2.2)	-	-	1 (0.4)
Parallel analysis	-	-	-	-	1 (2.2)	-	-	1 (0.4)
Longitudinal Analysis	-	-	-	-	1 (2.2)	-	-	1 (0.4)
Structural Equation Modeling	-	-	-	-	1 (2.2)	-	-	1 (0.4)
Kolmogorov-Smirnov test	-	-	-	-	-	1 (1.7)	-	1 (0.4)
Principal component analysis	-	-	-	-	-	-	1 (2.2)	1 (0.4)
Pareto analysis	-	-	-	-	-	-	1 (2.2)	1 (0.4)
Panel data methods	-	-	-	-	-	-	1 (2.2)	1 (0.4)
Column total	13 (100)	14 (100)	37 (100)	56 (100)	45 (100)	59 (100)	45 (100)	269 (100)
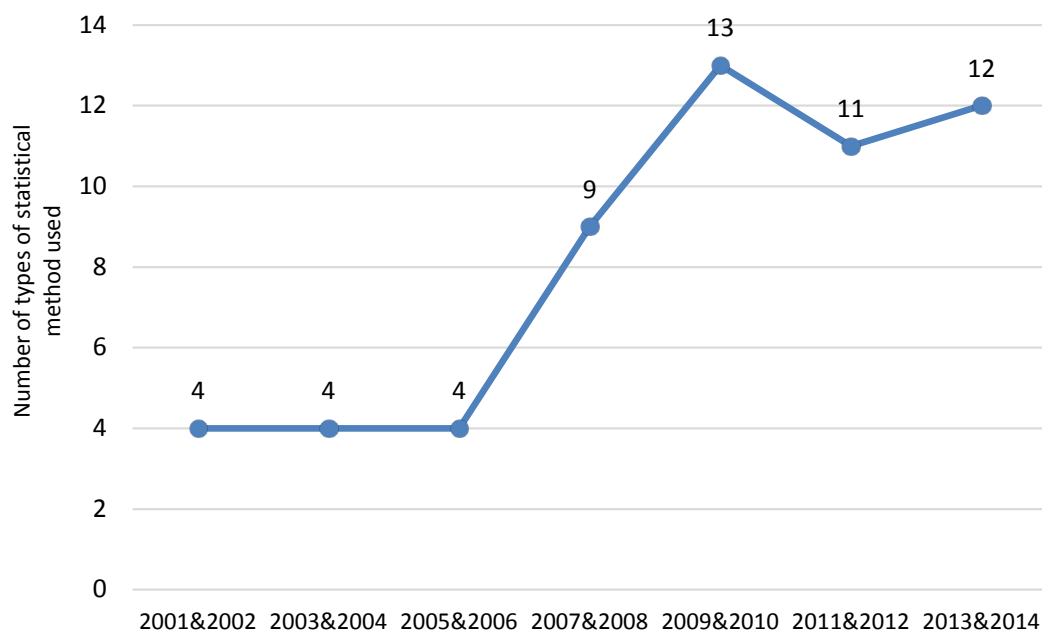
Figure 3. Number of types of statistical method used.

4.6. Unit of Analysis

More than 40% of empirical reports focused on individuals as the unit of analysis (**Table 9**). The reports had the even distribution of individuals and organizations with 36.4% focusing on individuals and organizations from 2001 to 2004. Reports focused on industry were generally less than 1/5 of empirical reports, with the exception of 2001 & 2002 and 2003 & 2004. There was only one report focusing on nation as the unit of analysis. This indicated that most of the articles dealt with problems and issues related to individual behavior and organizational behavior at the relatively macro level. This was consistent over the 12-year period, with the exception of 2001 & 2002, when 71.4% of the reports used organizations as the unit of analysis. Aggregated data would be more helpful to generate information and knowledge generalizable to the industry and nation segments. Therefore, the difficulties of collecting data impose restrictions on the proportion of reports focused on industry and nation.

4.7. Industry Segment

Table 10 shows the results of a cross-tabulation of the industry segments, according to the various research themes. The purpose was to identify industry segment orientation of the hospitality research. The main focuses of the reports published in the Hospitality Research Center were lodging, foodservices, and hospitality with 41.9%, 24.2%, and 19.9% respectively, while airline and real estate received the least attention with 0.5% equally. The majority of the reports were lodging (33.3%), food services (37.8%) and tourism (58.4%) were categorized as marketing. For the hospitality part, human resources, research and development, and marketing are the three major research areas, accounting for 29.7%, 27.0%, and 27.0% respectively. **Table 11** shows industry segment by year. Lodging was dominant from 2001 to 2014, with fluctuation during the period studied, while the research of food service showed some downward shifts.

5. Conclusions

Heck & Cooley (1988) noted that "published research leads the intellectual development of a discipline, and it is generally believed that significant research and quality teaching go hand in hand" [16], addressing the importance of publishing research. The results of this analysis are providing an insight into the hospitality reports in CHR. An overview of hospitality research in CHR showed a picture of the accomplishments in this area, and what the industry concerns, due to the 9.5% contribution from industry. The data in this article can provide a basis picture of the hospitality research. The dominant contribution of the reports was that Cornell University and some

Table 9. Unit of analysis by year.

Unit of analysis	Year of publication							Row total N (%)
	2001 & 2002 N (%)	2003 & 2004 N (%)	2005 & 2006 N (%)	2007 & 2008 N (%)	2009 & 2010 N (%)	2011 & 2012 N (%)	2013 & 2014 N (%)	
Individual	1 (14.3)	4 (36.4)	11 (47.8)	21 (61.8)	14 (48.3)	15 (50.0)	10 (41.7)	76 (41.7)
Organization	1 (14.3)	4 (36.4)	9 (39.2)	10 (29.4)	15 (51.7)	12 (40.0)	9 (37.5)	60 (38.0)
Industry	5 (71.4)	3 (27.3)	3 (13.1)	3 (8.8)	-	3 (10.0)	4 (16.7)	21 (13.3)
Nation	-	-	-	-	-	-	1 (4.1)	1 (0.6)
Column total	7	11	23	34	29	30	24	158

Table 10. Industry segment by research theme.

Research theme	Sector						None N (%)
	Lodging N (%)	Food Service N (%)	Hospitality N (%)	Tourism N (%)	Airline N (%)	Real estate N (%)	
Marketing	26 (33.3)	17 (37.8)	10 (27.0)	7 (58.4)	1 (100)	-	2 (16.7)
Operations	17 (21.8)	8 (17.8)	1 (2.8)	1 (8.3)	-	-	2 (16.7)
Research and development	7 (9.0)	7 (15.6)	10 (27.0)	2 (16.7)	-	-	-
Human Resources	5 (6.4)	3 (6.6)	11 (29.7)	-	-	-	6 (50.0)
Administration/ strategy	12 (15.4)	5 (11.1)	3 (8.1)	1 (8.3)	-	-	2 (16.7)
Finance	10 (12.8)	5 (11.1)	2 (5.4)	1 (8.3)	-	1 (100)	-
Preparation to establish	1 (1.3)	-	-	-	-	-	-
Total	78 (41.9)	45 (24.2)	37 (19.9)	12 (6.5)	1 (0.5)	1 (0.5)	12 (6.5)

Table 11. Industry segment by year.

Industry segment	Year of publication							Total N (%)
	2001 & 2002 N (%)	2003 & 2004 N (%)	2005 & 2006 N (%)	2007 & 2008 N (%)	2009 & 2010 N (%)	2011 & 2012 N (%)	2013 & 2014 N (%)	
lodging	4 (40.0)	7 (53.8)	13 (50.0)	12 (33.3)	17 (50.0)	12 (34.3)	13 (40.6)	78 (41.9)
Food Service	3 (30.0)	4 (30.8)	5 (19.2)	13 (36.1)	8 (23.5)	7 (20.0)	5 (15.6)	45 (24.2)
Hospitality	2 (20.0)	2 (15.4)	6 (23.1)	6 (16.7)	6 (17.6)	8 (22.9)	7 (21.9)	37 (19.9)
Tourism	-	-	1 (3.8)	2 (5.6)	1 (2.9)	5 (14.3)	3 (9.4)	12 (6.5)
Airline	-	-	-	1 (2.8)	-	-	-	1 (0.5)
Real estate	-	-	-	-	-	-	1 (3.1)	1 (0.5)
None	1 (10.0)	-	1 (3.8)	2 (5.6)	2 (5.9)	3 (8.6)	3 (9.4)	12 (6.5)
Column Total	10 (100)	13 (100)	26 (100)	36 (100)	34 (100)	35 (100)	32 (100)	186 (100)

2/5 authors were repeated contributors. The trend of multiple-authorship and collaboration with scholars from other universities and industry professionals was noted. Authors from both academic and non-academic institutions pay more attention on marketing, research and development, and operation, indicating the difference with the previous research on hospitality journal. The research of finance indicated a rising trend, while that of human resources showed a falling trend. The examination of nature of research and statistical method indicated that most of the hospitality researches were empirical, and a growing number of articles used sophisticated research methods, with increasing adoption of advanced statistical tools in the research. Besides, descriptive statistics is the most popular statistical method employed by scholars. Additionally, nearly half of the reports focused on lodging, and it was dominant from 2001 to 2014, with fluctuation during the period studied, while the research of food service showed some downward shifts. Individual and organization are the main units of analysis in the reports, which is slightly different from the findings mainly focusing on individual of hospitality and tourism journals research [5].

According to the findings of this study, the differences between hospitality reports in CHR and other journal exit in the research theme and unit of analysis. Finance in CHR was increasingly popular, while human resources in other journal were emphasized. CHR focused on individual behavior, as well as organizational behavior, while other journal mainly focused on individual behavior.

According to the findings of this research, hospitality reports in CHR will lay more emphasis on finance and decline the research of human resources. Multiple-authorship and collaboration with scholars from other universities and industry professionals will be popular in CHR.

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