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**Factors Affecting Customer Profitability:
a Bibliometric Study**

Master's Thesis

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TIIVISTELMÄ

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<p>Työn tavoitteena on selvittää, minkä tekijöiden vaikutusta asiakaskannattavuuteen on tutkittu tieteellisissä julkaisuissa. Tavoitteena on myös selvittää aihealueen merkittävimmät tutkijat ja julkaisijat. Odotuksena oli löytää tekijöitä markkinoinnin ja laskentatoimen kirjallisuudesta, mutta laskentatoimen näkökulmaa ei onnistuttu saamaan mukaan tutkimukseen.</p> <p>Tutkimuksessa käytettiin bibliometrisiä menetelmiä. Tutkimusaineisto kerättiin manuaalisesti Scopus ja Web of Science -viitetietokannoista. Käytettyjen hakusanojen tuloksena oli 770 artikkelia, joista 82 sisällytettiin tutkimuksen kohteeksi. Aihealuetta käsiteltiin kuvailevan analyysin sekä viite- ja sisältöanalyysin keinoin. Tutkimuksen teossa käytettiin Bibexcel ja Pajek -ohjelmia.</p> <p>Aihealueen artikkeleista suurin osa on julkaistu vuosien 2004–2013 välillä. Tuotteliaain aihealueen tutkija on Kumar Vipin Georgian yliopistosta (USA). Tutkimuksessa havaittiin useita eri asiakaskannattavuustekijöitä. Tutkimusta on kohdistunut paljon esimerkiksi asiakastyytyväisyyteen, lojaalisuuteen, asiakassuhteen keston, markkinoinnin toimenpiteisiin ja asiakaspääomaan vaikuttaviin tekijöihin. Aihealueen tutkimus on keskittynyt palvelusektorille. Tutkimusaukot muodostuivat business-to-business -liiketoiminnan ja teollisuuden puolelle.</p>

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1 INTRODUCTION

1.1 Background

Technological evolution has enabled companies to collect a lot of information about their customers and storage it to large databases. The information gives a possibility to find factors affecting customer profitability. It can be analyzed and utilized. Literature talks about the era of 'big data' (for example: Brown et al. 2011, p.24) as the amount of information can be enormous. Enterprises are expecting that 'big data' could provide increased operational efficiency in the future (Philip Chen & Zhang 2014, p.317). Information is valuable as data-based decision making is noticed to enhance the performance of enterprises (Brynjolfsson et al. 2011, p.16). Kaplan and Narayanan (2001, p.7; p.9) remind that knowing individual-level customer profitability, and factors affecting to it, gives firms possibility to take actions and transform unprofitable customers to profitable ones.

Kaplan and Narayanan (2001, p.8) and Mulhern (1999, p. 34-35) both studied customers cumulative profitability and noticed that profits are quite concentrated among customers. Kaplan and Narayanan (2001, p.7) used activity-based costing and their graphical presentation is called as whale curve (presented in figure 1). Whale curve reveals that for example 20% of the customers can cumulate between 150% and 300% of totals profits and 10% of customers can lose from 50% to 200% of cumulative profits (Kaplan & Narayanan 2001, p.7-8).

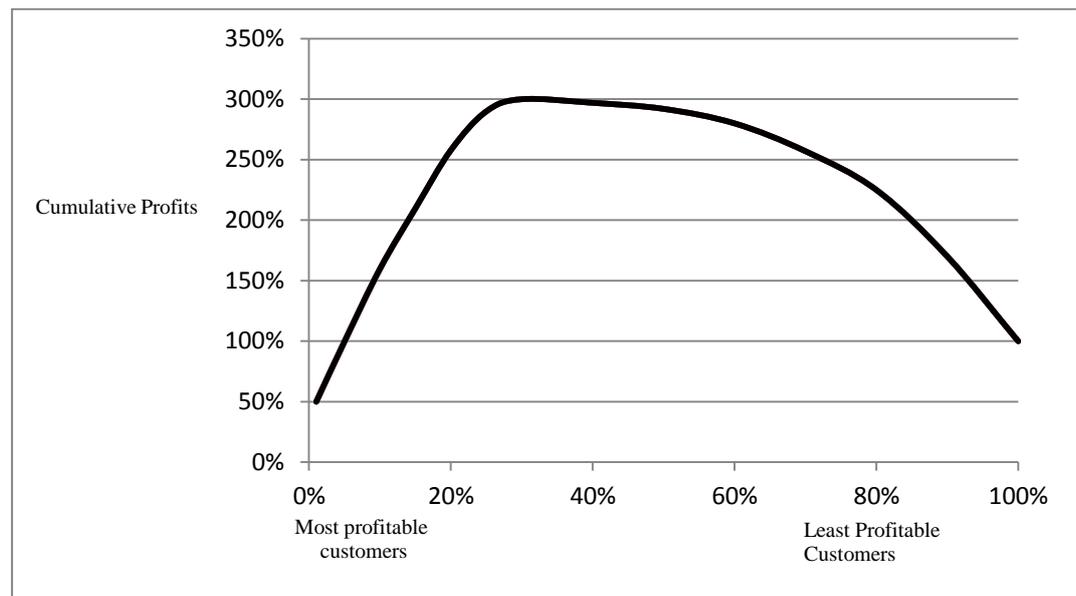


Figure 1. Whale curve of cumulative profitability (Kaplan & Narayanan, 2001 p. 8)

Kaplan and Narayanan (2001, p.8) say customer size and customer related costs affects where customers ends up to be in the whale curve. Large customers are likely to be the most profitable ones or the most unprofitable. Small customers are likely being in middle of the spectrum as they does not do enough business to cause significant losses. High-cost-to-serve customers tend to be unprofitable if customer-related costs are not fully priced in. Factors affecting the costs are for example custom products, order size, delivery requirements and customer support. (Kaplan & Narayanan 2001, p.8) Kaplan and Narayanan (2001, p.9) lists pricing as main method for manage customer profitability.

Mulhern (1999, p.36-39) studied customer profitability in business-to-business context and noticed its importance in marketing decision-making, like segmentation and resource allocation. He concluded that there is a need for further research about the factors influencing to customer profitability. Mulhern (1999, p.37-38) suggested research proposition about what factors influences to customer profitability. He suggested studying link between satisfaction, loyalty and length of relationship to customer profitability.

Mulhern's (1999, p. 38) other suggestions are listed below:

- *“Customer profitability is positively related to the match between product's benefits with the customer's needs.*
- *Customer profitability is positively related to the quantity and quality of marketing communications to the customer*
- *Customer profitability is inversely related to price sensitivity*
- *Customer profit is directly related to the degree of favorableness of customers' attitudes toward a company or brand.*
- *Customer profit is directly related to the portion of a customer's business that a company owns (share of requirements).*
- *The concentration of customer profitability is positively related to the breadth of brands and product lines offered.*
- *The concentration of customer profitability is positively related to the variability in prices offered.” (Mulhern 1999, p. 38)*

In this day, after fifteen years, it is still unknown how much research is focused on these factors. There can be also other factors affecting to customer profitability. For example certain marketing channel may generate more profitable customers than others. As for marketing perspective it would be beneficial to know characteristics of profitable customers so marketing can be targeted to more efficiently. For example Big Data-driven marketing has improved conversion-rates and renewals among the customers of mobile network operator (Sundsøy et al. 2014, p.367).

Not all customers should be treated as same. Decision making based solely on past values of customers can lead to suboptimal results. Some customers can have growth potential to become significantly profitable over time and some others can refer many new customers for the company. In that case also unprofitable customer can be beneficial. The subject area of this study is interesting as it have

been studied in marketing and management accounting literature. Kaplan and Narayanan presents accounting and management scholarship and Mulhern marketing perspective. In the next chapter is handled customer profitability terminology and factors.

1.2 Key concepts

According to McManus and Guilding (2008, p.780-781) both accounting and marketing literature tends to perceive Customer Profitability (CP) as revenues less costs generated by a customer. CP can be viewed as a historically orientated measure containing a specific past period of time. Other time period consist the future and used terms are Customer Lifetime Value (CLV) and Customer Equity (CE). (McManus & Guilding 2008, p.780-781)

Holm (2012, p.31-32) separates two different customer profitability measurement models: Customer Profitability Analysis (CPA) and CLV. He says that both aim to aid decision making, but they differ in time and profitability perspectives. CPA models includes all customer-related costs and revenues in a single period in the past, but CLV models estimates future profitability and incorporates profits from product net of direct marketing costs. (Holm 2012, p.31-32) CP, CLV and CE can differ also if profitability is handled at individual or group level (Gleaves et al. 2008, p. 835-838). Figure 2 shows how terms differ when accounting period and customer count changes.

All customers	PERIOD OPERATING PROFIT	CUSTOMER EQUITY
A single customer	CUSTOMER PROFITABILITY	CUSTOMER LIFETIME VALUE
	Current accounting Period, e.g. one year	All future Accounting periods (Net present value)

Figure 2. Customer profitability terms (Gleaves et al. 2008, p. 838)

Pfeifer et al. (2005, p.15) define CP as “the difference between the revenues earned from and the costs associated with the customer relationship during a specific period”. Customer lifetime value can be defined as “the present value of the future cash flows attributed to the customer relationship” (Pfeifer et al. 2005, p.17). Definition for customer equity is “the total of the discounted lifetime values summed over all of the firm’s current and potential customers” (Rust et al. 2004, p.110). Gleaves et al. (2008, p.838) defines annual operating profit as “the sum of the customer profitability from all customers the firm has served within a single accounting year.” However customer profitability -term is used also in wider context and it can mean a group of customers or whole customer base. It is also used regarding for longer time perspective / accounting period. As a majority of references of this study uses only terms CP, CLV and CE, this study does not use term period operating profit. Instead CP is used as common term for individual and group of customers and it is quantified more clearly using words when it is needed. Other terms that are used are CLV and CE and those terms are handled as they are defined.

Customer profitability drivers and factors terms are both used at literature. In this study word “factor” is used and in the context of this study it is defined as “*variable which is expected to have impact on customer profitability*”. As for understanding limitations of this study, concept of sub-factors needs to be understood. Customer profitability factors are expected to have direct impact to customer profitability. Sub-factors have indirect link. Sub-factor could be defined as “*factor that is expected to affect customer profitability via another customer profitability factor*”. Concept of factors and sub-factors can be seen figure 3. Noteworthy is that same factor can be either factor or sub-factor. The figure is explained below.

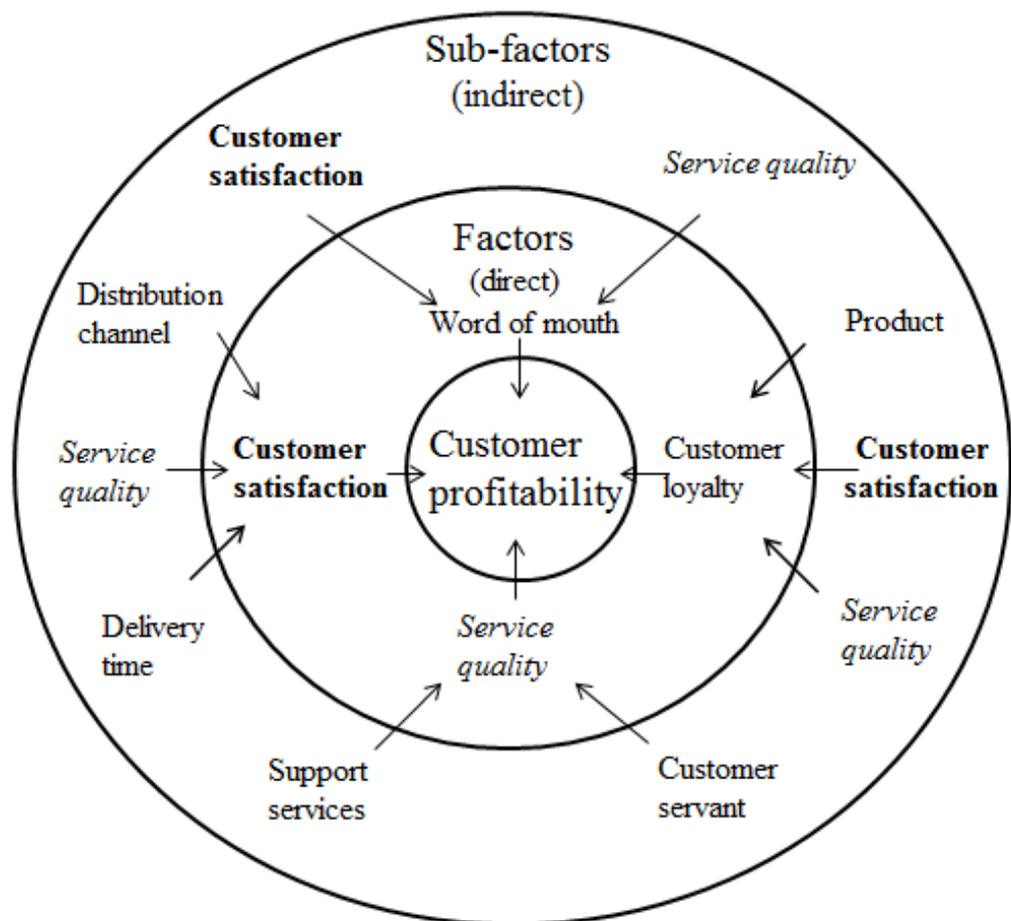


Figure 3. An example factors and sub-factors of customer profitability

For example customer satisfaction and loyalty could be expected to have direct impact on profitability based on Mulhern's (1999, p.38) research propositions. However customer satisfaction can also affect indirectly profitability via other factors. For example Kessler and Mylod (2011, p.266) studied how satisfaction affects loyalty. In that context satisfaction is in role of sub-factor. The concept is generalized and the rest of the figure is based on assumptions. The purpose is to present the complexity of this subject area. For example it could be assumed that service quality affects on profitability. Service quality could also affect on satisfaction and also customer's referral behavioral.

When it is talked about factors affecting to customer equity established term is customer equity drivers. Commonly known customer equity drivers are value equity, brand equity and relationship equity. Value equity is customer's perception on what he gets compared to what is paid for it. Three key elements of value equity are quality, price and convenience. Brand equity can be defined as extensive set of attributes that influence customer's choice and it is affected by for example brand awareness and attitudes towards brand. Relationship equity can be called also retention equity and it enhances customers' permanence. Relationship equity can be affected by loyalty programs, treatment, affinity programs, community building programs and knowledge-buildings programs. (Lemon et al. 2001, p.20-21)

1.3 Research problem

The aim is to find out what customer profitability factors are studied in scientific journals. Table 1 shows research questions and methods that are used for answering them.

Table 1. Research questions and methods

Research questions:	Methods and indicators used
What customer profitability factors are studied in scientific articles?	Citation analysis Content analysis Article counts per factor
Who are main researchers and publishers?	Bibliometric indicators Citation analysis Publication counts per author/journal
What are most cited articles?	Citation analysis Reference analysis: the most cited references
How are articles placed in time?	Publications per year
Are there research gaps in the subject area?	Content analysis

As it is still unknown what all factors affect to customer profitability, this study is made by using bibliometric methods. For the main factors, like satisfaction, loyalty and customer's size, it is also answered if these factors are affecting profitability. Study summarizes key authors and journals from the research area and also finds out if there are any research gaps.

1.4 Structure of the study

The study is divided to eight main chapters. Figure 4 shows a structure of the study by presenting inputs and outputs of each chapter.

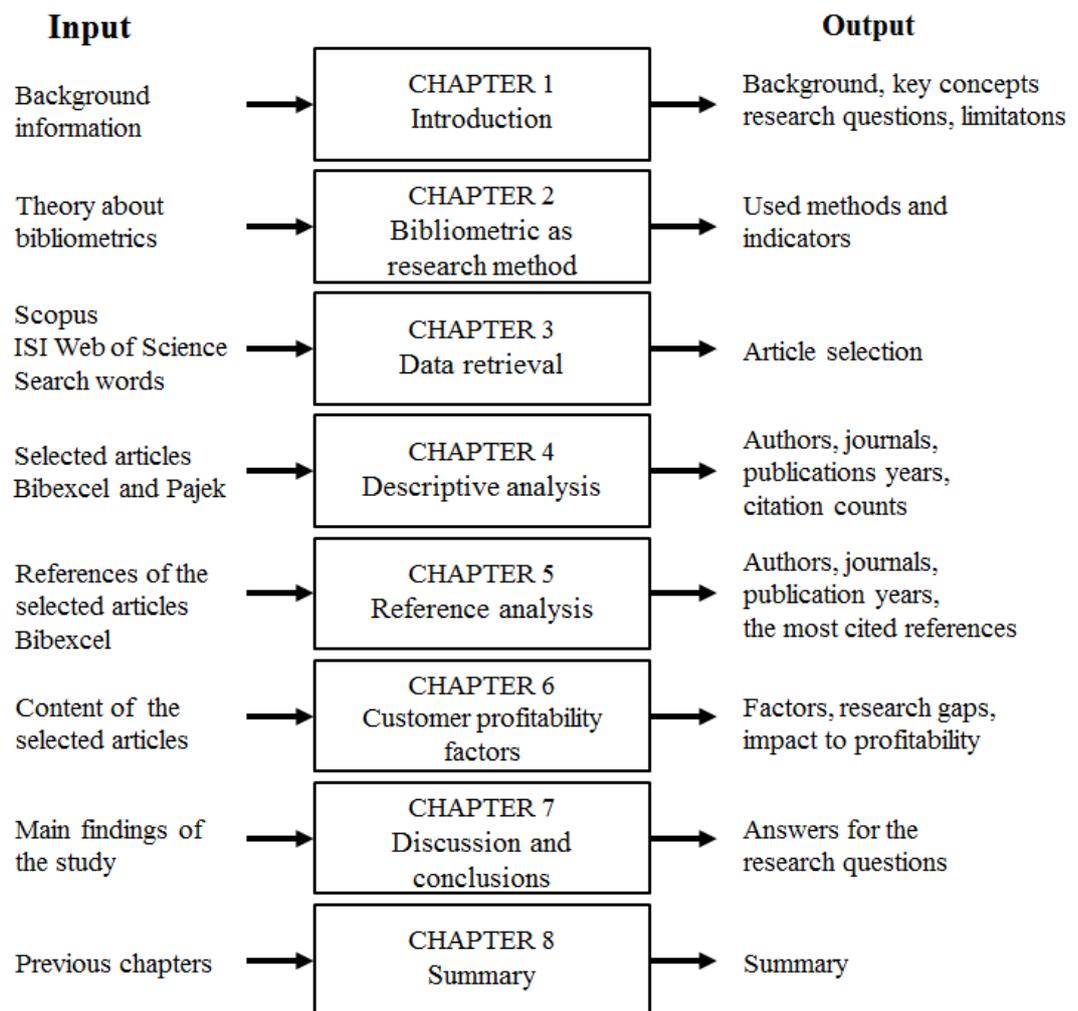


Figure 4. Structure of the study

In the first main chapter is introduced background for this study and research questions. In chapter 1.2 key concepts and definitions are presented regarding customer profitability and factors. Used research method is introduced in chapter 2. It consists a theory about a bibliometric research method. Material for bibliometric analyses was collected in chapter 3. Research field is analyzed in chapters 4 and 5. The main difference for these chapters is that chapter 5 uses as an input reference material of the selected articles. Customer profitability factors are handled in chapter 6 where content analysis is made. In that chapter are presented factors' impact on profitability and research gaps. Chapter 7 answers for the research questions and the study is summarized in chapter 8.

1.5 Limitations

A bibliometric method causes some limitations. Databases and search words affect to what articles can be found. Articles are limited to those that can be found from Scopus or Web of Science. Databases also affect on citation counts. Citation counts can vary remarkably depending on what database is used. This causes that citation counts from different databases are not comparable with each other. Article selection is made manually and it leaves a possibility of error and can be affecting to results.

Those articles that have no abstract or full text available are excluded. Articles from year 2014 were excluded as article selection was made in the beginning of the year. No other limitations for time period were considered necessary. Only articles and review-articles are included. That means for example book chapters and conference papers were left out.

In this study no limitations to customer profitability factors are made, but sub-factors are left out if no direct link to profitability can be found from the same article. For example if impact of satisfaction or loyalty to profitability is measured are those both included, but studies about satisfaction impact to loyalty are excluded. As it is still unknown what factors impacts to customer profitability, this study is unable to track sub-factors efficiently. No limitations about the accounting period are made and customers can be handled individuality or groups.

Articles have required focusing on customer profitability factors. Articles that handle factors and customer profitability as a separated manner are excluded. Figure 1 presented a cumulative profitability of customers known as a 'whale curve'. Whale curves are not interpreted as a factor. Whale curves without a factor explaining the form of the curve are left out of this study.

2 BIBLIOMETRICS AS RESEARCH METHOD

2.1 Introduction to bibliometrics

Bibliometrics is defined as “*statistical analysis of books, articles or other publications*”. (Oxford dictionaries 2013). The term bibliometric was introduced by Pritchard in 1969. At the same time period the term scientometrics was also introduced and it was defined as “*the application of those quantitative methods which are dealing with the analysis of science viewed as an information process*”. Present-day both terms are used almost as synonyms. (Glänzel 2003 p.6) Traditional bibliometrics counts publications and count citations of individual papers. Publication count is used to measure productivity and citation count for importance of the publication. (Lewison & Devey 1999, p.14) Quantitative analysis and statistics are used at bibliometrics studies (Mcburney & Novak 2002, p.108). Glänzel (2003, p.9-10) divides usage of bibliometric to three categories: bibliometrics for bibliometricians, bibliometrics for scientific disciplines and bibliometrics for science policy and management. Van Raan (2005, p.134) reminds to consider whether bibliometric analysis is suitable research method to a specific field. He says that international journals need to have major means of communication in the field, if it has, then bibliometric analysis is applicable (Van Raan 2005, p.134).

Two bibliometrics approach can be separated: descriptive and evaluative (Leeuwen 2004, p. 373; Mcburney & Novak 2002, p.108). Descriptive method is includes for example publication counts and other statistical calculations, but evaluative approach includes methods like citation analysis, which allows to look what kind of impact those articles have had on research field (Mcburney & Novak 2002, p.108). Evaluative bibliometrics is based on assumption that article’s impact on the scientific community can be measured with citation counts (Rehn & Kronman, 2008. p.4). However critique has been presented against usage citation counts as performance measurement. Even Garfield (1979, p.359-360) noticed

resistance against citation counts in the seventies and Mcburney and Novak (2002, p.110) still reminds that citation is not always positive. However without manual checking it cannot be known if citations are positive or negative. Manual checking would take too much time so it is not made in this study.

There are three well-known software used in bibliometric studies. Those are Sitkis, BibExcel and Publish or Perish. Sitkis is designed to work on Web of Science database and Publish or Perish works only with Google Scholar. BibExcel supports Scopus and Web of Science. BibExcel data can be visualized using free programs called Pajek or Gephi. Bibexcel and Pajek are used in this study. Bibexcel and Pajek have also been used together on previous studies (Hou et al. 2008, p.190). Bibexcel is developed by Professor Olle Persson. Persson are described as one of the pioneers in Nordic library and information science research. (Persson et al. 2009, p.5; p.9).

2.2 Citation analysis

Citation count states how many citations publication have been received and it is the simplest form of citation analysis (Smith 1981, p.85). Mcburney and Novak (2002, p.108–109) say citation analysis is based on the assumption that a citation between articles makes them somehow related. Citation analysis is used to find connection between articles based on their citations. Citation analysis can also show what impact articles, journals or organizations have had on others by determining how often they cited. It is required to have citation indices to do citation analysis. (McBurney & Novak 2002 p.108–109) This study uses Web of Science and Scopus -databases which both provides citation indices.

There is two traditionally used citation information available: citation counts and references. Databases also provide information that who has cited the publication

after it has been published. The most widely citation analysis is used to study article's reference list and to look where information is coming for the article. It is important to notice that citation quantity depends a lot on when the article is published. Brand new article cannot have high citation count, although it would be high quality, because no-one has had time to make citation about article. Influence of time to citation count can be viewed in figure 5. It presents average citation rates for publications in subject area of business and economics at Web of Science databases. For example a publications from year 2005 has the mean citation value 13.84 (Thomson Reuters 2013). Average citation rates were not found from Scopus.

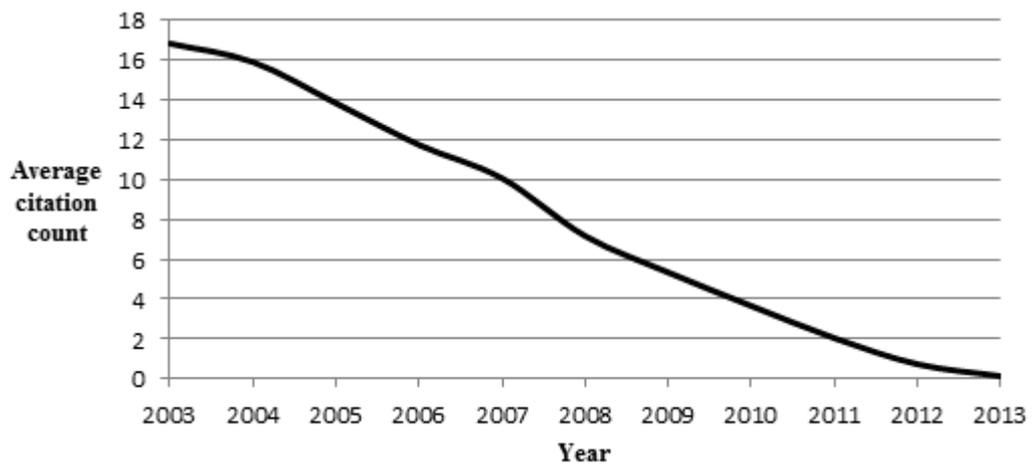


Figure 5. Average citation rates for publications at Web of Science (Thomson Reuters 2013)

Relationships between different articles can be studied using co-citation and bibliometric coupling methods. Smith (1981, p.85) explains the methods: “Two articles are bibliographically coupled if their reference lists share one or more of the same cited documents. Two documents are co-cited when they are jointly cited in one or more subsequently published documents. Thus in co-citation earlier documents become linked because they are later cited together; in bibliographic coupling later documents become linked because they cite the same

earlier documents“ . (Smith 1981, p.85) Small (1974, p.28) defines co-citation as the frequency with which two documents are cited together. He says that co-citation patterns differ significantly from bibliographic coupling patterns, but are closer to patterns of direct citation. (Small 1974, p.28) For example if there is one book that cites two articles, then articles are somewhat connected together. More there are books citing these two articles together, the connection will get stronger. These articles are co-cited. The basic ideas of bibliometric coupling and co-citation analysis are visualized below in figure 6. Left figure shows two articles that are bibliographically coupled. Right one shows articles that are co-cited. Co-citation analysis is also possible to make about authors. The method is author co-citation analysis.

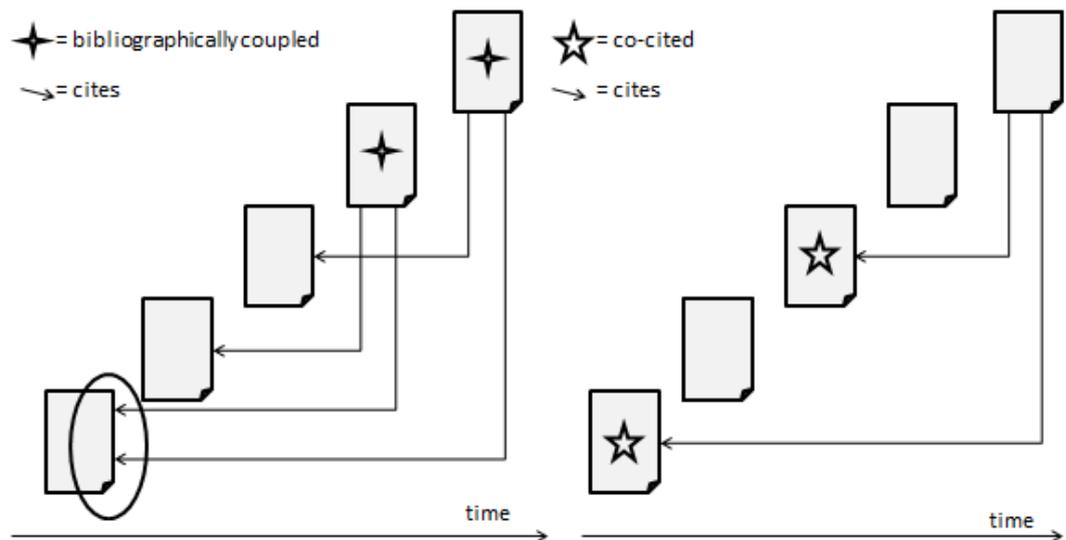


Figure 6. Bibliographical coupling and co-citation (Rehn & Kronman 2008, p.9-10)

There is also newer alternative method for co-citation analysis; it is called citation proximity analysis. This method takes into account how close citations are each other in article's text chapters. The Assumption is: closer citations are, the more likely they are related. (Gipp & Beel 2009, p.571) Although the method could be advisable, software support for citation proximity analysis is insufficient and

manual work would be too slow. Citation proximity analysis is not used in this study.

The main objective of this study is not related on relationships between different articles or authors. The aim is to answer the questions: what customer profitability factors are studied. In that context bibliometric coupling is almost irrelevant. In this study citation analysis includes citation counts and analyses based on articles reference lists. When analysis is based on reference lists this study uses the term “reference analysis”. The purpose is to clarify what citation information is used. Literature uses many times the term ‘citation analysis’ in the wider context which includes also reference analysis. Content analysis is adduced in next chapter. Content analysis is used to find factors and research gaps from the subject area.

2.3 Content analysis

In this study content analysis is used to find what customer profitability factors are studied in scientist articles. Information is then categorized based on articles content and then research gaps are looked for. There can be found many different approaches to content analysis. Elo and Kyngäs (2008, p.107; p.113) say that content analysis can be quantitative or qualitative. Qualitative research method uses words rather than numbers in analyzes and data collection (Bryman & Bell 2011, p.386) and quantitative method draws conclusions based on numerical data which are analyzed using mathematical methods (Muijs 2004, p.1 Quoted: Aliaga & Gunderson 2000). Hsieh & Shannon (2005, p.1286) divides qualitative content analysis three sections: conventional-, directed- and summative content analysis. Conventional content analysis is normally used when aim is to describe a phenomenon and existing literature on a phenomenon is limited. It allows making categories based on found data. Directed analysis is based more on existing theory and summative methods uses counting and comparisons to construe context. (Hsieh & Shannon 2005, p.1279; p.1286) This study’s content analysis

could be classified as a conventional content analysis, but this study has a qualitative and a quantitative perspective. In this study conclusions are also based on research amounts which are closer the quantitative side. On the other hand some factors were discussed a little wider perspective which presents qualitative content analysis. Exact categorization is not made as quantitative and qualitative perspectives are involved.

Content analysis is described as a flexible method and there is more than one way to put it into practice. It can be handled also either inductive or deductive manner (Elo & Kyngäs 2008, p.107; p.113). According to Bryman and Bell (2011, p.13) deductive research approach are based on theory. This study does not have theory background for factors that are looked for. Instead this study takes inductive approach which is based on observations and findings (Bryman & Bell 2011, p.13). An example of inductive and deductive content analysis process can be seen in Figure 3 (inductive) and Figure 4 (deductive). The main difference between approaches is how categories will be made. In inductive approach categories will be made based on the findings of content analysis. Those are not known in advance. Whereas in deductive method categories are based on existing theory and categories are known before content analysis is started. This study's content analysis is more inductive than deductive.

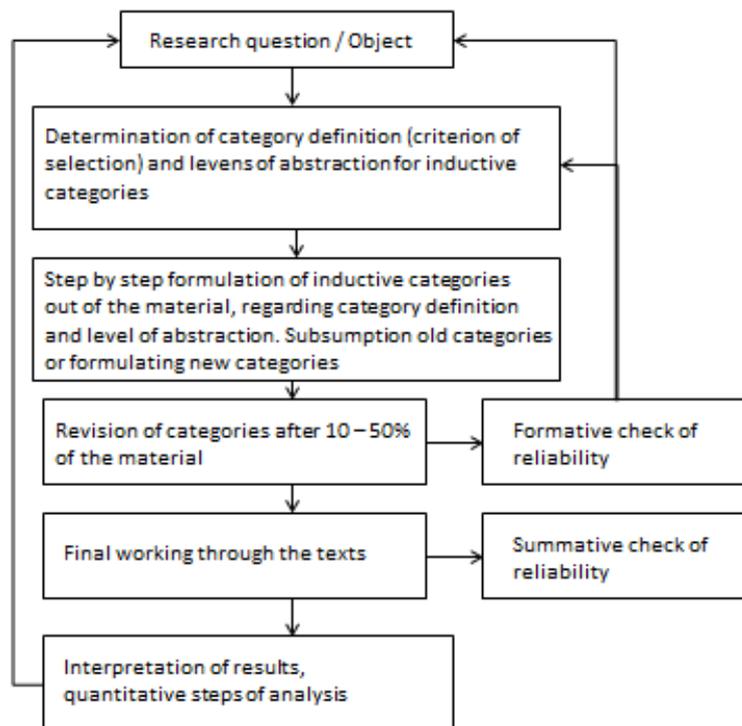


Figure 7. Inductive category development (Mayring 2000a, p.4, quoted Mayring 2000b)

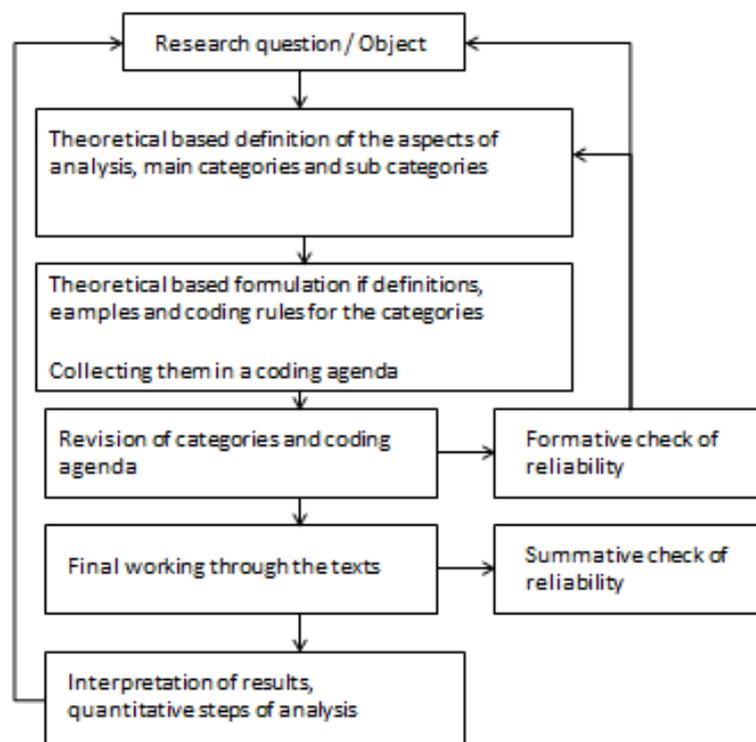


Figure 8. Deductive category development (Mayring 2000a, p.5, quoted Mayring 2000b)

2.4 Bibliometric indicators

There are different kinds of bibliometric indicators. Quantity indicators measure the productivity, quality indicators measure quality aspects and structural indicators which measure connections in the research field. (Durieux & Gevenois 2010, p. 2010) In this study quantity indicators are publication counts per journal and author. Quality aspect is measured with citation counts. Structural indicator in this study is publication counts per university. Other indicators are described below.

One indicator for author evaluation is **H-index** which is designed by Jorge Hirsch. According to Hirsch (2005, p.16569; p.16573) H-index will give one number that “estimates importance, significance and broad impact of a scientist’s cumulative research contributions”. H-index is based on author’s publication counts and how many times scientist has been cited. For example, if scientist has 40 publications that each one has 40 citations, his h-index is 40. (Bornmann & Daniel 2007, p.1381). Meaning that higher h-index is interpreted as better. H-index is used in this study.

Impact factor is commonly used for journal evaluation. “The ISI impact factor is a number that corresponds to the average number of citations a publication in a specific journal has received during the two years following the year of publication” (Rehn et al. 2007, p.27). There is also 5-years Impact factor - variation. Scopus provides for journal evaluation **SJR** (SCimago Journal Rank) and **SNIP** (Source normalized Impact per paper) -indicators. SNIP measures the average citation impact of the publications of a journal (CWTS Journal Indicators 2013).

SJR is affected by quality, subject field and reputation of citations that journal receives. It is also called as a prestige metric. As for example if journal A is cited 100 times by the most highly ranked journals in the field it receives more prestige than journal B which has 100 citations by lower quality publications. In this case journal A and B would have same impact factor, but as the prestige of the journals are taken into account have journal A higher SJR. It could be generalized that Impact Factor measures popularity and SJR measures prestige. SJR and SNIP is both subject field normalized. Time window are for both 3 years. (Colledge et al. 2010, p. 217-219) As SNIP and SJR are source normalized they fit particularly well for this subject area as factors could be handled by different research fields. The different research fields cannot be compared fairly if another field average citation counts are lower than on the other (Journal Metrics 2011, p. 3). SJR and SNIP are used in this study.

There are also different kinds of indicators available which are based on peer reviews. That kind of journal rating is provided for example by Publication Forum. It is initiated by Universities of Finland and it provides journal ratings which are made by experts of each different research fields. The aim of the forum is to provide a quality indicator for scientific publication channels that are not based only to quantity. It has three rating levels for publications: 1 = basic, 2 = leading and 3 = top. (Julkaisufoorumi 2014) As the Publication Forum is not as widely recognized by international community it was not used in this study.

New article level-metrics are under development for evaluating article's impact to society. The most known seems to be '**Altmetric**' and this kind of metric is used by Public Library of Science's (PLOS). PLOS's article-level metric takes into account for example: citation counts, download counts and how many times it's commented in social media (PLOS 2013). So these metrics takes into account more than just citation counts and this way measures article's wider impact to society (Altmetric 2013). However these kinds of metrics are not ready to be used

in this study. Availableness is too limited and it's not yet widely accepted as a research indicator. It might be a good tool in the future and worth of keeping eye on, it seems that Elsvier's Science Direct -web engine is already testing it, but it is limited only a couple journals.

3 DATA RETRIEVAL

3.1 Database selection and search words

Scopus, Web of Science (WoS) and Google Scholar (GS) are listed as primal databases for bibliometric studies in material provided by Universities. (Jönköping University 2014; Mid Sweden University 2014; University of Oulu 2014; University of Oxford 2014). There are also other databases providing citation information like CiteSeerX, JSTOR and EBSCO. CiteSeerX and JSTOR have too limited article supply for the subject area of this study. EBSCO would provide enough articles, but it has not bibliometric indicator-tools like Scopus or WoS has. If EBSCO would be used, Journal and Author -level indicators should be acquired from other sources. The final database selection is made between Scopus, WoS and GS.

Although GS is listed as one of the main source for bibliometric data in several places, Google Scholar is not as widely used in bibliometric studies as Scopus and WoS. Aguillo (2012, p.343) critiques GS that it lacks quality control and provides weaker material than other databases. GS requires more time to obtain useable information as to article selection would have to be made extra caution. Especially if those articles are not found from Scopus or WoS. Because of quality issues, it is not recommended using GS for bibliometric studies. (Aguillo 2012, 343-344; p.350) Jacso (2012, p.326) says Google Scholar have shortcomings which makes it inappropriate for bibliometric studies. Yang and Meho (2006, p.10) are more precise and say that Google Scholar has several technical problems in citation location process. These shortcomings, may or may not exist nowadays, but it seems that Google Scholar is not as respected in science community as Scopus or WoS. Although Google Scholar could provide some articles that cannot be found from Scopus or WoS, it will not be used in this study. Google Scholar would require more manual work. Conference papers, books and other

publications should be removed manually from search results. Google Scholar's citation counts would also contain other material than scientific articles.

Web of Science covers over 12,000 journals (Thomson Reuters 2014) and Scopus provides about 20,000 journals (Elsevier 2014). These are peer-reviewed journals so quality is better than in GS. Both databases also provide bibliometric indicators and are commonly used in bibliometric studies. Those databases provide a good coverage about subject area of business and economics. The Amount of duplicate journals between databases is noteworthy as seen figure 9. At the first sight, it can be questioned if there is need to use WoS as Scopus provides superior journal coverage.

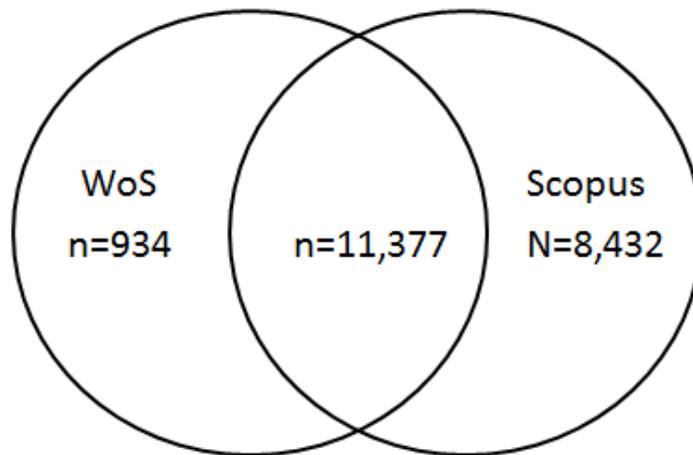


Figure 9. Unique and duplicate journals between Web of Science and Scopus (Academic Database Assessment Tool 2014)

As seen figure 9, Scopus has obviously better journal coverage. However database selection should not be made only based on journal count. Vieira and Gomes (2009, p.588) made vital observation that Scopus provides only partial coverage for some journals. Chadegani et al. (2013, p.24) compared WoS and Scopus and concluded that the advantage of WoS is good coverage articles from 1990s. They

said that Scopus has focus on newer articles. Based on these observations and additional 934 journals WoS would provide, it is decided to use WoS alongside Scopus in this study.

With two different databases, the decision has to be made which database is used when articles are found from both databases. Database selection will affect to citation counts and bibliometric indicators. In this study, it is decided that Scopus is a primal database and WoS is secondary. Articles are retrieved from Scopus if there are articles in both databases. In this way articles are more comparable as the most of the articles will be from same database.

Different search words were examined before final decision. As this study is not looking for any particular customer profitability factors, it is decided to use common terms about customer profitability. It was also noticed that “customer profitability factors” or the other variants of the term does not result sufficient article counts. Table 2 shows results for different search words at Scopus and WoS when document type is limited to articles. Search area is limited in Scopus to “article title, abstract, keywords” and in WoS to “topic”. Topic means that search engine will include article title, abstract, keywords and also “Keyword Plus” which takes phrases and words from cited articles.

Table 2. Results for different search words

Search words:	Scopus: Article Title, Abstract, Keywords	Web of Science: topic
"customer equity"	119	87
"customer life cycle"	16	5
"customer lifecycle"	11	4
"customer life-cycle"	16	5
"customer lifetime valuation"	3	0
"customer lifetime value"	214	161
"customer profit*"	128	75
"customer profitability analysis"	21	7
"customer profitability management"	1	1
"customer profitability"	107	71
"customer relationship value"	5	2
"customer valuation"	39	18
	Scopus: Title	
"customer" AND "profitability"	72	
	Scopus: All fields	
"customer profitability drivers"	0	
"customer profitability factors"	0	
"drivers of customer profitability"	14	
"drivers of customer equity"	11	
"factors of customer profitability"	0	
"factors of customer equity"	0	

Article counts per search word were moderate. Customer relationship management results the most articles, but it does not hit to subject area so well. Customer profitability, as a search word, provided most promising articles about subject area of this study. However article count is a surprisingly low. It is decided to use combination of different search words. Examples from different combinations that were tried are in table 3.

Table 3. Results for different search word combinations

Search word combinations:	Scopus: Article Title, Abstract, Keywords	Web of Science: topic
“customer profitability” OR “customer equity” OR “customer lifetime value”	375 (articles) 419 (articles and reviews) 556 (article, reviews and conference papers)	278 (articles) 302 (articles and reviews)
“customer profit*” OR “profit* customer”	260 (articles) 296 (articles and reviews) 416 (articles, reviews and conference papers)	113 (articles) 116 (articles and reviews)
“customer profitability” OR (“customer equity” OR “customer lifetime value” OR “customer relationship management”) AND “profitability”	215 (articles) 250 (articles and reviews) 362 (articles, reviews and conference papers)	184 (articles) 192 (articles and reviews)
	Scopus:	Web of Science:
Title: “customer” AND “profit*” - OR - Abstract, keywords (WoS: topic): “customer profit*”	244 (articles) 275 (articles and reviews) 352 (articles, reviews and conference papers)	132 (articles) 139 (articles and reviews)

Based on article count per combination and content of search results, it is decided that “customer profitability”, “customer equity” and “customer lifetime value” is the best combination for the purposes of this study. As each of those search words presents a different perspective (accounting period and customer count) for profitability, it is expected to get comprehensive results using them together.

3.2 Article selection

Scopus provided 421 publications and WoS 349 publications. Counts differ from Table 3 as articles are retrieved at beginning of the year 2014 and search word selection was made at the end of the year 2013. Total article count is now 770.

Document type was limited to articles and review-articles. The year of 2014 were excluded from this study. Articles will be divided to three categories during article selection. Article selection process can be seen in figure 10.

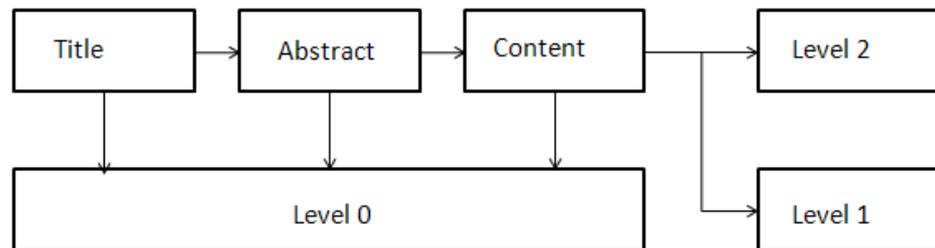


Figure 10. Article selection process and classification

Level 0/1 -articles are not analyzed. Articles are first eliminated based on their title. In this phase, the purpose is to eliminate articles that are not about subject area of this study. The next qualification is based on articles abstract. The last phase is content check and those are classified as Level 2, Level 1 or Level 0 articles. Classification is based on articles content, not for example on journal rankings. Definitions for different levels are shown table 4.

Table 4. Article category definitions

Category	Definition
Level 2	Statistical articles: “Factor(s)’ impact to customer profitability is tested”. Non-statistical articles: “Article focuses on variable(s) that are affecting to customer profitability”. For example article makes framework, estimates factors’ monetary value or includes it profitability calculations with focus on that particular factor.
Level 1	Defined as: “Beneficial for the subject area”. For example articles where customer profitability factors are not in the main role or article does not have sufficient customer profitability point of view. These are for example sub-factors without connection to profitability.
Level 0	Not about subject area, duplicate or missing important information (e.g. abstract).

Level 2 -articles is required to have focus on customer profitability factor. Those articles that handle factor and customer profitability as separately manner are excluded from this study. Customer profitability point of view is required. As factors are unlimited and it is still unknown what factors affect to profitability, sub-factors cannot be collected efficiently. This means that those articles which handle for example factors of satisfaction are not classified as level 2-articles. However those articles are collected for the post research purposes and are classified as Level 1 articles. Article selection process can be seen in figure 11

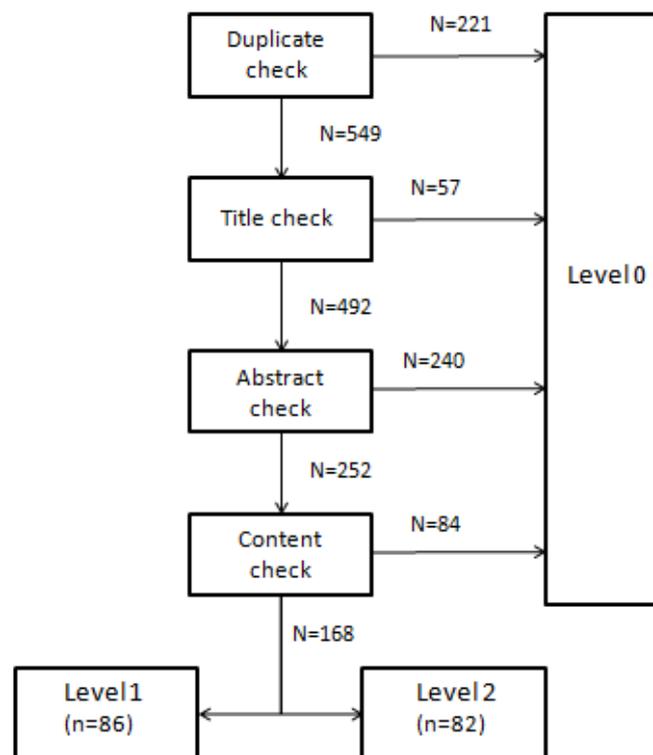


Figure 11. The article selection process

Article count is 549 after duplicates are removed. Article elimination based on title was noted challenging as factors affecting customer profitability are still

unknown and manner of an approach can be from marketing or accounting perspectives. Abstract was read from the most articles.

This study used Scopus as a primal database. After Level 2 articles were collected it was inspected if articles from WoS could be found from Scopus. The reasoning for this is to keep citation counts comparable using same database. Keywords differ between databases so every article was not found from Scopus in the first attempt although articles were available there. Keywords provided by WoS are known as keywords plus which are additional for author's own keywords. After this check Level 2 article count are 77 from Scopus and 5 from Web of Science.

4 DESCRIPTIVE ANALYSIS

4.1 Publications per year and journal

In this chapter authors and journals are analyzed. Chapter uses only level 2 articles. Reference materials are not used in this chapter. Figure 12 shows how these articles placed on timeline.

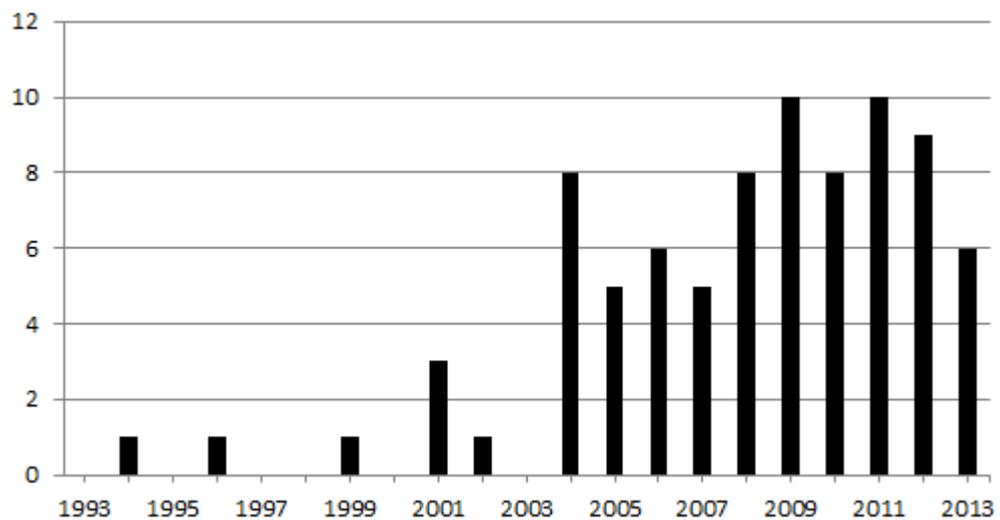


Figure 12. Publications per year

There were found only three publications before year 2001. Publication activity has increased significantly on year 2004. The peak years are 2009 and 2012. The graph could tell increased attractiveness about this particularly subject area. However it can just tell more about the availability of older articles. Scarce publication counts for years before 2000 could be in common for also other bibliometric studies using online-databases and requiring full-documents at electronic form. Overall worldwide publication activity has probably also increased and causing increasing trend for publication counts. It needs to be remembered that search words can also affect to results from which time period articles are found. CLV and CE are newer terms than CP, but those are still used by literature from 1990s.

Table 5 shows in which journals articles have concentrated. Table shows also SJR and SNIP indicators. Higher value for indicators means higher quality and more active publication activity. SNIP is easy to interpret as value one means that journal is average for its field and value lower than one means that it is below average (Journal Metrics 2011, p.6).

Table 5. The most active publishers

Journal	SJR	SNIP	Publication count	Cumulative percentage
Journal of Marketing	5.585	4.320	10	12,2 %
Journal of Interactive Marketing	1.434	1.911	7	20,7 %
Journal of Business Research	1.289	1.886	4	25,6 %
Journal of Marketing Research	3.908	2.103	4	30,5 %
Journal of Service Research	1.998	2.277	4	35,4 %
Harvard Business Review	0.451	3.459	3	39,0 %
Journal of Financial Services Marketing	0.269	0.470	3	42,7 %
Management Science	2.902	2.223	3	46,3 %
Journal of Business and Industrial Marketing	0.710	0.977	2	48,8 %
European Management Journal	0.446	1.096	2	51,2 %
Expert Systems with Applications	1.358	2.435	2	53,7 %
Industrial Marketing Management	1.209	1.512	2	56,1 %
International Journal of Hospitality Management	0.937	1.801	2	58,5 %
International Journal of Research in Marketing	1.579	1.600	2	61,0 %
Journal of Retailing	1.931	2.624	2	63,4 %
Marketing Science	3.552	1.786	2	65,9 %

There are a lot of marketing related journals. No management accounting journals were identified. The most active publishers are Journal of Marketing and Journal of Interactive Marketing. Quality of publishers is quite good as only two journals of these are rated below average on their research field by SNIP indicator.

Together these indicators suggest that Journal of Marketing is the most respected from these journals.

The publication count per country is shown in figure 13. Data is retrieved from Scopus. Scopus calculates how many connections articles have to a specific country. Same article can have multiple connections if it has multiple authors which are from different country. If authors are all from same country it is calculated as one connection. Articles from Web of Science have been manually handled and added to figure using same rules as Scopus does. Figure presents those countries that have two or more connections.

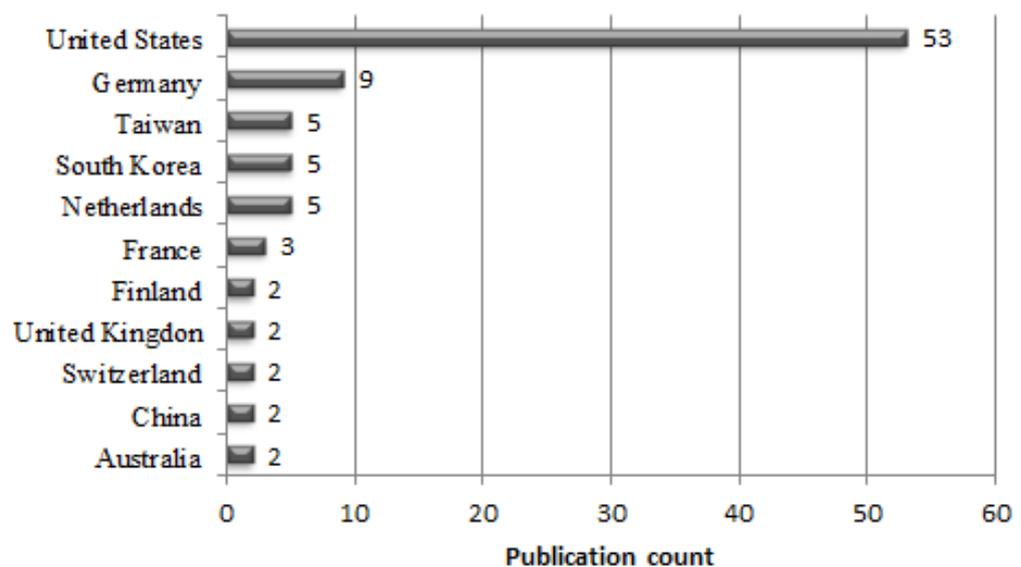


Figure 13. Publications per country

The research is concentrated on United States. There are still over twenty publications related to European countries and over ten publications from Asian countries. Figure 14 shows how publications are distributed between universities.

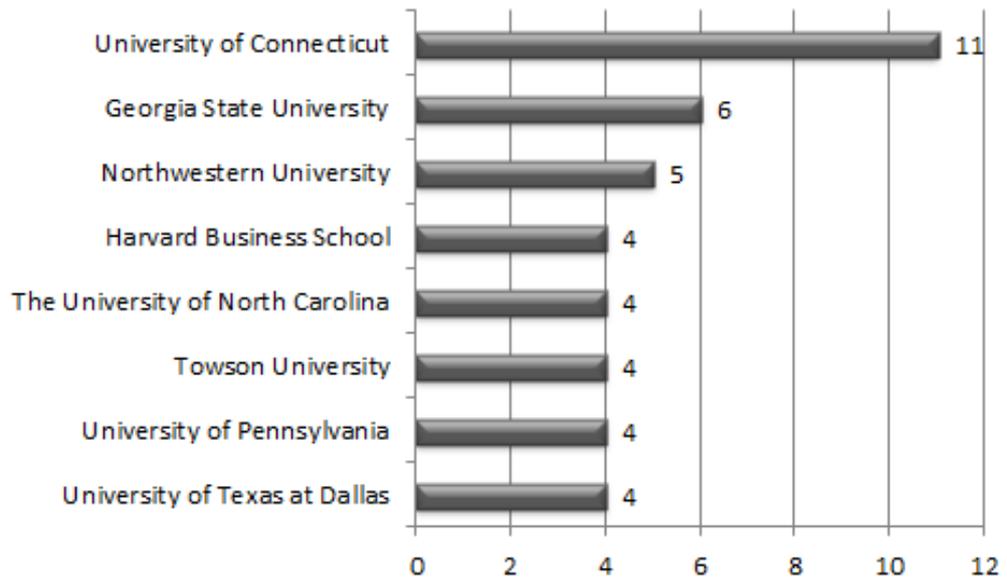


Figure 14. Publications per university

Universities are from United States. University of Connecticut stands out from others with eleven publications. From those a remarkable portion seems to come from marketing department. In the next chapter are looked for the main authors from the subject area. The result from authorship calculations also explains why the concentration is in the University of Connecticut.

4.2 Publications per Author

In this chapter it is looked who are the main researcher for this particularly subject area when it is measured by publication activity. Table 6 shows authors who have four or more Level 2 articles. For those authors has also h-indexes listed in the table. However h-index cannot be used to measure researcher's impact to this particular subject area as a number takes into account also scientist's other publications from different subject areas. Table also shows author's connections to universities.

Table 6. Publication count per author

Authors	h-index	1st authorship	2nd authorship	Other authorships	Total
Kumar, V. • University of Connecticut • Georgia State University	34	10	3	2	15
Venkatesan, R. • University of Virginia • University of Connecticut	16	2	1	2	5
Steffes, E. • Towson University	2	1	1	2	4
Murthi, B.P.S. • University of Texas at Dallas	7	1	3	0	4
Leone, R.P. • Texas Christian University • Ohio State University	10	1	0	3	4
Petersen, J.A. • University of North Carolina • University of Connecticut	7	0	3	1	4
Shah, D. • Georgia State University • University of Connecticut	6	1	2	1	4

The most active publisher for subject area is Kumar Vipin with 15 articles and he has also clearly the highest count of publications with first authorships. Kumar has published articles from University of Connecticut (newer articles) and Georgia State University (older articles). The second highest article count have on Venkatesan Rajkumar. Kumar and Venkatesan also stand out from the rest of the group if overall impact of their publications is measured with h-index. Otherwise no big differences on publication counts can be found from the list. Figure 15 shows co-authorship networks for level 2 articles. It shows the networks which contains authors that are published together more than two article. Stronger the line is between authors, more they have published articles together. Figure is made using Bibexcel and Pajek software.

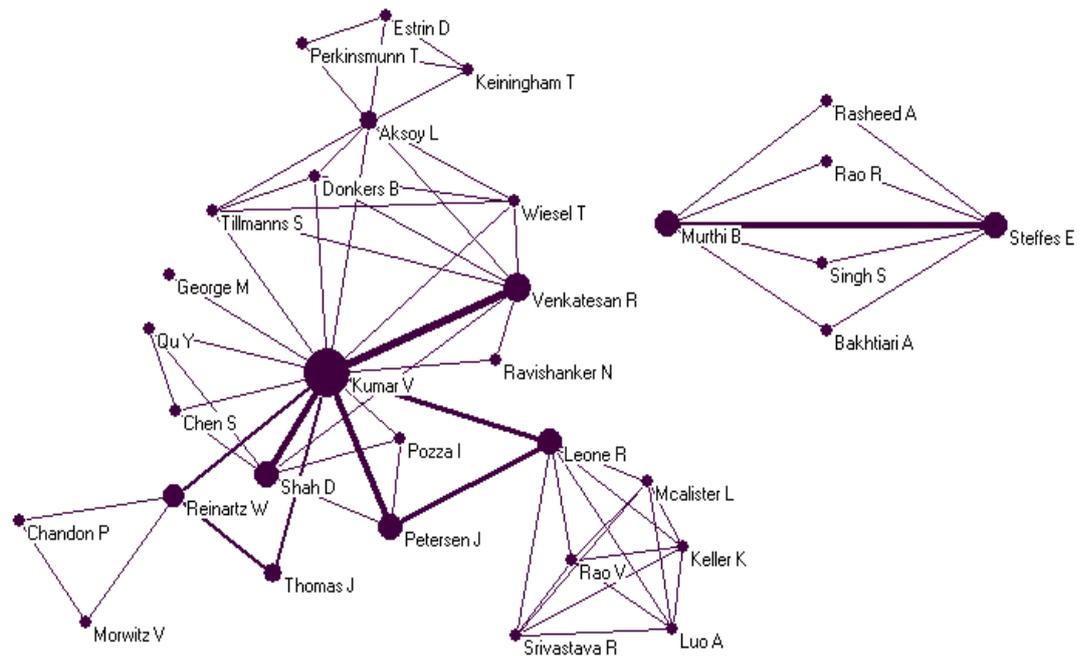


Figure 15. Co-authorship networks

Two different networks were formed. The networks are separate as no authors have been published articles within authors of another network. Main authors for the left group are Kumar, Venkatesan, Shah, Leone and Petersen. All of them, except Petersen, had a connection to University of Connecticut. The strongest link is between Venkatesan and Kumar who has taken in part together for five articles. As total publications for Venkatesan were five, this means Venkatesan's all articles were published with Kumar. Kumar was also one of the authors for all articles where Shah was involved. There are multiple factors studied in this network, for example cross-buying, satisfaction, word of mouth and multichannel shopping.

Another network forms around Murthi and Steffes. They shared authorship in all articles that were included from them in this study. Those articles were focused on credit card industry. Factors they studied were affinity & reward cards, marketing channels and customer related risks. Articles were published years 2011-2013.

4.3 Citation Counts

Citation counts are used to measure articles impact to scientific community. Table 7 presents citation counts for level 2 articles. As database affects to citation counts are articles from Web of Science marked with an up mark. Those articles are not directly comparatively to others as citation counts in Web of Science are generally lower than Scopus.

Table 7. The twenty most cited articles

Rank	First author	Year	Journal	Citations
1	Blattberg, R.C.	1996	Harvad Business Review	318
2	Venkatesan, R.	2004	Journal of Marketing	226
3	Reinartz, W.	2005	Journal of Marketing	181
4	Storbacka, K.	1994	International Journal of Service Industry	171*
5	Kumar, V.	2004	Journal of Retailing	119
6	Niraj, R.	2001	Journal of Marketing	105
7	Kumar, V.	2005	Journal of Interactive Marketing	101
8	Mulhern, F.J	1999	Journal of Interactive Marketing	95
9	Villanueva	2008	Journal of Marketing Research	88
10	Fader, P.S.	2005	Journal of Marketing Research	86
11	Bowman, D.	2004	Industrial Marketing Management	79
12	Richards, K.A.	2008	Industrial Marketing Management	70
13	Hitt, L.M.	2002	Management Science	69
14	Venkatesan, R.	2007	Journal of Marketing	59
15	Kumar, V.	2007	Harvard Business Review	57
16	Hogan, J.E.	2004	Journal of Advertising Research	56
17	Homburg, C.	2008	Journal of Marketing	53
18	Kumar, V.	2010	Journal of Service Research	48
19	Leone, R.P.	2006	Journal of Service Research	47
20	Kumar, V.	2006	Journal of Retailing	42

*Web of Science citation counts

Blattberg and Deighton (1996) have distinctly the most cited article with 318 citations. As same time it is one of the oldest article included to this study. The three most cited articles focused on marketing. In the top lists are five first authorship articles from Kumar and two from Venkatesan. No other authors have multiple first authorship articles in this list. If all authorships are calculated have Kumar total seven articles and Venkatesan five. There are ten different journals at

the top list. Five articles were published by Journal of Marketing. Citation counts are highly affected by publication year. In the next figure (Figure 16) articles are arranged by publication year and citation counts. The purpose is to examine if any articles can be distinguished when publication year is taken into account.

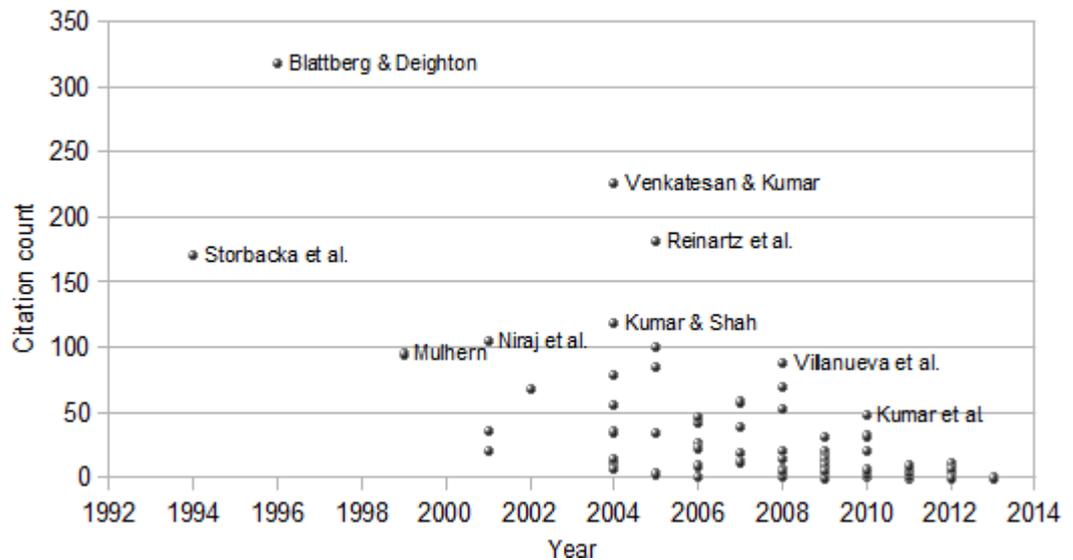


Figure 16. Articles arranged by publication year and citation count

Blattberg and Deighton (1996), Venkatesan and Kumar (2004) and Reinartz et al. (2005) stand out from rest of group. Those were also three most cited articles. For the years 2008 and 2010 has Villanueva et al. (2008) and Kumar et al. (2010) the most cited articles. For years 2011-2013 no clear divergence can be spotted. No other articles stand out. The median citation count for articles is 10,5 and the median publication year is 2009. In the next chapter are the reference lists of articles analyzed.

5 REFERENCE ANALYSIS

5.1 Description of reference material

Reference calculations are made using Bibexcel and Excel. There were 2,120 individual publications at Level 2 -articles reference lists. Databases did not provide references for all articles. For those articles references were added manually if reference information were available inside of PDF-file. References for Furinto (2009) and Villanueva (2009) were added manually from Scopus and Cambell and Frei (2004), Thomas et al. (2004) and Storbacka et al. (1994) from Web of Science. Figure 17 shows how references are placed on timeline.

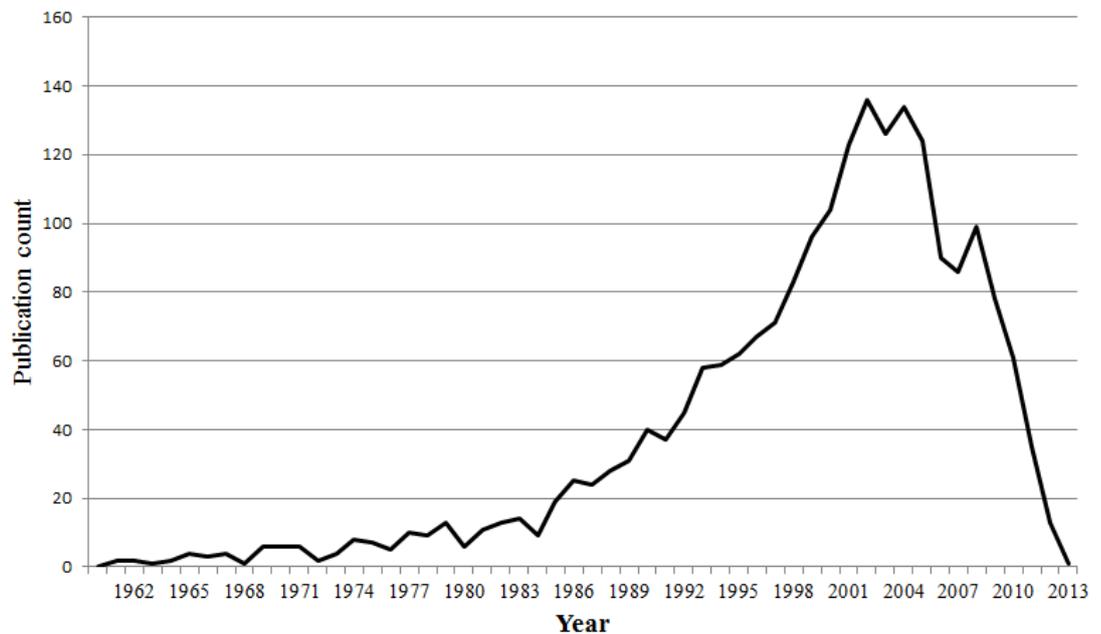


Figure 17. Referenced publications per year

The highest publication counts are on years 2000-2005. The oldest article that was cited by level 2 article was from year 1890. Timeline is restricted in the figure between 1960-2013. Year 1960 were the first one without any publication and there was only a single publications per year before that.

The next is handled which authors had the most individual articles cited by level 2 articles. Calculations are made using Bibexcel. As Bibexcel can mix up a different authors as a same person, the result were manually corrected. Table 8 presents authors that had 14 or more individual publications cited by level 2 articles.

Table 8. Publication counts per author based on references

Author	Number of 1 st authorship publications	Total number of publications
Kumar, V.	28	46
Rust, R.T.	19	29
Zeithaml, V.A.	9	23
Lemon, K.N.	1	22
Verhoef, P.C.	8	17
Neslin, S.A.	6	17
Lehmann, D.R.	4	17
Parasuraman, A.	8	15
Venkatesan, R.	6	15
Blattberg, R.C.	12	14
Fader, P.S.	10	14
Gupta, S.	9	14
Reinartz, W.J.	8	14

Kumar, V. has the most individual publications cited by Level 2 articles. The author is same that had the most Level 2 articles. That means Kumar, V. is the most productive author of this study. Rust, R.T. has the second highest article count. There are only a couple of new authors that have not been author on Level 2 article. Those are Gupta, S, Verhoef, P.C. and Parasuraman, A.. Gupta, S. has made studies relating on this subject area. In one article Gupta and Zeithaml (2006, p.15-30) made generalizations based on literature about **factors affecting on financial performance**. The first authorship articles from Parasuraman, A. are strongly focused on a **measurement of service quality**. Verhoef, P.C. has made a study about the impact of **acquisition channel** on **customer loyalty** and **cross-buying** (Verhoef & Donkers 2005, p.17). The next is looked up journal counts based on reference lists.

The process for calculating journals includes manual correction to journal names. There were journal title abbreviations in exported material which needed to be fixed manually. Abbreviations are corrected to full form using for Web of Science's journal lists (Web of Science / Journal Title Abbreviations). Journals were also calculated using Bibexcel. Table 9 shows article counts for journals.

Table 9. Publication count per journal based on references

Journal	Count
Journal of Marketing	168
Journal of Marketing Research	120
Marketing Science	77
Management Science	53
Harvard of Business Review	52
Journal of Service Research	47
Journal of the Academy Marketing Science	47
Journal of Retailing	44
Journal of Consumer Research	44
Journal of Interactive Marketing	40
Journal of Business Research	31

The main publisher is Journal of Marketing with 168 individual publications cited by Level 2 articles. If reference material is compared to where the most of Level 2 articles itself were published, have tables a lot of same journals. There are only two new journals in the top lists and those are "Journal of the Academy Marketing Science" and "Journal of Consumer research". Those are both marketing related journals. The top place did not change. That means the most active publisher in the subject area is Journal of Marketing. Next is looked up the most cited references.

5.2 The most cited references

Calculations were made using Bibexcel and Excel. From Bibexcel were taken the fifty most cited references and for these fifty articles results were calculated manually. The table 10 shows how many times same publications have got cited

by level-2 articles. It includes those publications that were cited sixteen or more times by Level 2 articles. Publications that were also level 2 articles are marked up with a star at the upper corner of the citation number. Table also shows how many citations these publications have received total at Scopus to represent overall popularity of these publications.

Table 10. The most cited references by level 2 articles

First Author	Year	Journal	No. of citations by Level-2 articles	No. of citations at Scopus
Rust, Lemon & Zeithaml	2004	Journal of Marketing	36	504
Reinartz & Kumar	2000	Journal of Marketing	32	428
Blattberg & Deighton	1996	Harvard Business Review	30*	321
Venkatesan & Kumar	2004	Journal of Marketing	27*	227
Reinartz & Kumar	2003	Journal of Marketing	24	307
Berger & Nasr	1998	Journal of Interactive Marketing	23	297
Reichheld	1996	Book	23	-
Rust, Zeithaml & Lemon	2000	Book	19	-
Gupta, Lehmann & Stuart	2004	Journal of Marketing research	16	282
Reinartz, Thomas & Kumar	2005	Journal of Marketing	16*	184
Niraj, Gupta & Narasimhan	2001	Journal of Marketing	16*	105
Blattberg, Getz & Thomas	2001	Book	16	-

The lists consists twelve publications and from those three were books. Rust et al. (2004) has the most cited article by level-2 articles. From these articles it has also highest citation count at Scopus. Rust et al. (2000) has also published book which is cited by nineteen level-2 articles. Other authors that have multiple first authorship publications in the list are Reinartz, W.J. and Blattberg, R.C.. Reinartz has two first authorships article in the top 5 and Blattberg has two first authorships in the top 10. Kumar, V. has been author for four articles which consist of three second and one third authorships.

From the nine journals were six published by Journal of Marketing. In timeframe are the most cited references concentrated on years 2000-2005. Articles are described in table 11 and they are arranged same order as table 10. The books are excluded from the description. The table provides also factors what these articles handles, but in this case it does not mean that factor's impact on customer profitability is measured.

Table 11. Descriptions for the most cited references

Authors	Year	Method	Data	Factors	Aim
Rust, Lemon & Zeithaml	2004	Modeling	Cross-industry	Marketing actions	Framework to calculate return on marketing.
Reinartz & Kumar	2000	Statistical analysis	Catalog retailer	Relationship duration	Focuses on relationship duration and its effect on customer profitability
Blattberg & Deighton	1996	Conceptual framework	-	Marketing spending	Optimal level for customer acquisition and retention spending.
Venkatesan & Kumar	2004	Conceptual framework, Statistical analysis	Computer manufacturer	Target marketing	Customer selection and resource allocation.
Reinartz & Kumar	2003	Conceptual framework, Statistical analysis	B2C & B2B	Cross-buying, Frequency, Spending level, Income, demographics, product returns, marketing actions	Study about factors impacting on profitable lifetime duration.
Berger & Nasr	1998	Descriptive Case examples without empirical material	-	Marketing spending	Five different examples to compute CLV.
Gupta, Lehmann & Stuart	2004	Modeling, Statistical analysis	Capital One, Amazon.com, Ameritrade, Ebay, E*Trade	Retention, acquisition cost, margins, discount rate	Links customer value to firm value.
Reinartz, Thomas & Kumar	2005	Framework Statistical analysis	High-tech manufacturer	Marketing channels and expenses	Looking optimal balance for marketing efforts.
Niraj, Gupta & Narasimhan	2001	Statistical analysis	Wholesaler	Price, volume, complexity factors, efficiency factors	Handles customer characteristics and their impact to profitability.

The next content analysis is made for these articles. It is made in chronological order. The oldest article was from Blattberg and Deighton (1996) and it handled marketing costs by searching optimal level of **acquisition and retention spending** which would maximize customer equity. They gave visual examples how customer equity is changing with different level of marketing spending. Article contains also mathematical formula to calculate optimal spending level. (Blattberg & Deighton 1996, p.137-144) Article was classified during article selection as Level 2 article.

Berger and Nasr (1998) provide mathematical models for customer lifetime value by presenting examples. According to them their major contribution are that article provides a general formulations of CLV and article is less context specific than previous research. (Berger & Nasr 1998, p.18) Article was classified during article selection as Level 1 article.

Article from Reinartz and Kumar (2000) is the second most cited by level-2 articles. They studied relationship between **relationship duration and profitability**. They concluded that there is not necessarily a strong correlation between these factors. In their study profits did not increase alongside relationship duration. They find out that long-life customers are not cheaper to serve and those customers do not pay higher prices. Their study was made in business to consumer context. (Reinartz & Kumar 2000, p.28) Article fits well for the subject area, but it was not found during the article selection.

Niraj et al. (2001) focused on customer **satisfaction and satisfactions programs**. They concluded that satisfaction program increases satisfaction remarkably, but satisfaction does not necessarily increase profitability. They suggest that marketing dollars regarding to satisfaction should be aimed for larger customers

whose satisfaction level is already higher than average. Study was executed at B2B sector. (Niraj et al, 2001, p.454) Article is Level 2 article.

Reinartz and Kumar (2003) had also another article where they test a several factors impact to profitable customer lifetime duration. They present the results for B2C and B2B sector separately which gives a possibility to compare factors affect in different business context. Studied factors were **spending level, cross-buying**, buying behavior, **purchase frequency, product returns, loyalty instruments in B2C context, availability of line of credit at b2b context, marketing contacts, location** and **customer's income**. (Reinartz & Kumar 2003, p.94) The article has a major contribution for subject area, but it was not identified during article selection.

Venkatesan and Kumar (2004) discussed **resource allocation** from marketing perspective, but they handled also **customer selection** and **marketing channel**. They provided framework to allocate marketing resources by taking the channel and customer selection into account. They compared different metrics that is used to customer selection and concluded that using CLV results higher profits than selecting customer based on revenue, past customer value or relationship duration. Context area is B2B. (Venkatesan & Kumar 2004, p. 106-121) Article is Level 2 article.

Rust et al. (2004) made framework which can be used to compare different marketing strategies and evaluating return on marketing based on customer equity. The aim was to improve marketing accountability. They provided new model to estimate CLV and validated it using data from airline industry. The model can be used to estimate **return on investment for different marketing actions**. (Rust et al. 2004, p.109-123) Article was classified as Level 1 during article selection.

Gupta et al. (2004, p.16) handled firm valuation and linked **marketing concepts** to shareholder value. They found out that **retention rate** had the greatest impact on customer value. One percent improvement in retention improved firm value by 5%, which were notable bigger impact than on discount rate, cost of capital or acquisition costs had. (Gupta et al 2004, p.7)

Reinartz et al. (2005) handled **marketing expenses and channels** at B2B context. Authors are looking for optimal acquisition and retention spending. Regarding to marketing channels their study suggests that face to face selling is more profitable than telephone or email marketing. (Reinartz et al. 2005, p.63-70) Article is Level 2 article.

From reference analysis Reinartz and Kumar (2000) and Reinartz and Kumar (2003) are included as level 2 articles for content analysis. Articles provide new information and are essential for the subject area as they affect for conclusions in the content analysis. Four articles from the most cited references were already in Level 2 category. For remaining three articles classification changes are not made. In the next chapter is made content analysis for level 2 –articles.

6 CUSTOMER PROFITABILITY FACTORS

6.1 Research gaps

In this study content analysis is used to find factors and research gaps from the subject area. Level 2 articles are listed in Appendix 1 where are also research method, business context and customer profitability factors are listed. Research gaps are tried to find by dividing factors to business-to-consumer, business-to-business, manufacturing and service sector based on the context the factors were studied. There were articles which did not provide enough information to be categorized this way. In these cases factors are listed for both sides.

Articles are also divided to statistical and non-statistical categories. Non-statistical studies are for example different kind of frameworks from the subject area. The first is presented factors that are related on customer's characteristics and behavior. Factors can be seen in table 12. Numbers in factor's right upper corner presents article's number at Appendix 1. The purpose for numbering is that articles and authors can be located. Firm related factors are presented separately as factors did not fit in the same table.

Table 12. Customer related factors divided into B2C and B2B context

	B2C	B2B
Statistical	Cross-buying ^{7, 14, 40, 60, 84} Purchase frequency ^{3, 13, 40, 43, 84} Loyalty ^{15, 23, 40, 46, 56, 64, 82, 84} Multichannel shopping ^{40, 75} Product returns ^{40, 84} Relationship duration ^{3, 7, 14, 40, 43, 83} Satisfaction ^{14, 23, 43, 46, 56, 64, 80} Share of wallet ^{14, 23, 42} Size ^{3, 14} Purchase amount ^{13, 84} Past profitability ^{7, 23} Word of mouth ^{14,} Nationality ^{3,56, 81} Location ^{7, 84} Social class / income ^{3, 7, 14, 43} Attitudes ^{14, 31} Age ^{3, 7, 14, 18, 43} Gender ¹⁴ Post paid vs. prepaid subscription ⁷⁹ Recency ^{3, 13} Risks ⁶³ - -	Cross-buying ^{48, 57, 60, 84} Purchase frequency ^{48, 53, 57, 84} Loyalty ^{6, 15, 23, 64, 84} Multichannel shopping ⁴¹ Product returns ^{48, 84} Relationship duration ^{48, 57} Satisfaction ^{6, 23, 28, 52, 64} Share of wallet ^{6, 23, 28, 42, 57} Size ^{6, 28, 48, 53, 71} Purchase amount ⁸⁴ Past profitability ²³ Word of mouth ^{37, 76} Nationality ⁸¹ Location ⁸⁴ Income ⁸⁴ - - - - - - Direct delivery units ⁵³ Number of delivery locations ⁵³
Non-Statistical	Cross-buying ⁵ Loyalty ⁵⁵ Multichannel shopping ⁵ Relationship duration ⁶⁷ Satisfaction ^{5, 21, ,67} Past purchase behavior ^{5, 33} Word of Mouth ^{1, 11, 22, 33,35, 36, 70, 73} Learning potential ^{11, 33} - - -	Cross-buying ^{5, 32} Loyalty ^{25, 32, 55} Multichannel shopping ⁵ Relationship duration ^{32, 67} Satisfaction ^{5, 21, 25, 67} Past purchase activity ^{5,32, 33} Word of Mouth ^{1,11, 33, 36, 37, 73} Learning potential ^{11, 33} Product returns ³² Frequency ³² Recency ³²

It needs to be remembered that B2C and B2B differs essentially and both category have some own specific factors which have no need to study in other category. This kind of factors are gender and direct delivery units. No major research gaps can be found from B2C world. The result suggests that B2B world lacks research about attitudes and customer related risks. Next research gaps is tried to find using different allocation rules. Table 13 presents customer related factors when businesses are divided into service and manufacturing industry.

is present on manufacturing sector is a default risks. Company's actions and characteristics are listed on table 14. The table presents factors on B2C and B2B context.

Table 14. Firm related factors divided into B2C and B2B context

	B2C	B2B
Statistical	Marketing channel ^{29, 63, 66} Target marketing ^{36, 62} Value equity ^{24, 29, 30, 31, 81} Relationship equity ^{24, 29, 30, 31, 81} Brand equity ^{24, 29, 30, 31, 65, 81} Marketing actions ^{2, 10, 12, 15, 50, 51, 63, 64, 65, 68, 84} CRM ^{23, 30, 64, 77} Product ^{68, 81} Competition ⁶⁸ Marketing expenses ²³ Competitive advantage ¹⁴ Online service channel ^{8, 16, 20, 78} Salesman expertise ⁴³ Relationship quality ⁷⁷ Stockouts ²⁶	Marketing channel ^{9, 57} Target marketing ^{36, 72, 74,} Value equity ^{30, 81} Relationship equity ^{30, 81} Brand equity ^{30, 65, 81} Marketing actions ^{15, 52, 64, 65, 68, 84} CRM ^{6, 23, 30, 64} Product ^{53, 68, 81} Competition ⁶⁸ Marketing expenses ^{23, 57, 72} - - - - -
Non-Statistical	Marketing expenses ^{4, 69} Marketing actions ^{5, 22, 27, 38, 39, 47, 60} Price ^{5, 19} Brand equity ^{27, 34, 44, 45, 59, 61} Value equity ^{27, 34, 44, 59, 61} Relationship equity ^{27, 44, 59, 61} CRM ^{11, 27, 34, 54, 58, 61} Quality ⁶⁷ Option value to abandon customer ¹⁷ Service quality ⁶⁷	Marketing expenses ^{4, 32, 69} Marketing actions ^{5, 27, 38, 39, 47, 60} Price ^{5, 19} Brand equity ^{27, 34, 44, 45, 59} Value equity ^{27, 34, 44, 59} Relationship equity ^{27, 34, 44, 59} CRM ^{27, 34, 58} Quality ^{25, 67} Option value to abandon customer ¹⁷ Service quality ⁶⁷

The most research is focused on customer equity drivers and marketing actions. Research gaps forms to B2B context as there are no studies about salesman role, stockouts, online service channels and competitive advantage. Table 15 presents factors divided on service and manufacturing context.

Table 15. Firm related factors divided into service and manufacturing context

	Service	Manufacturing
Statistical	Marketing channel ^{9, 29, 63, 66} Target marketing ^{36, 62, 72} Value equity ^{24, 29,30, 31, 81} Relationship equity ^{24, 29,30, 31, 81} Brand equity ^{24, 29,30, 31, 65, 81} Marketing actions ^{2, 10,12, 15, 52, 50, 51, 63, 64, 65, 68, 84} Product ^{53,68,81} CRM ^{23, 30, 64, 77} Competition ⁶⁸ Marketing expenses ^{23, 72} Competitive advantage ¹⁴ Online service channel ^{8, 16, 20, 78} Salesman expertise ⁴³ Relationship quality ⁷⁷ Stockouts ²⁶	Marketing channel ^{9, 29, 57} Target marketing ^{72, 74} Value equity ^{29,30, 31, 81} Relationship equity ^{29,30, 31, 81} Brand equity ^{29,30, 31, 65, 81} Marketing actions ^{12, 65, 68} Product ^{68, 81} CRM ^{6, 23, 30,} Competition ⁶⁸ Marketing expenses ^{23, 57, 72} - - - - -
Non-Statistical	Marketing expenses ^{4, 32, 69} Marketing actions ^{5, 22, 27, 38, 39, 47,, 60} Price ^{5, 19} Brand equity ^{27, 34, 44, 45, 61 59} Value equity ^{27,34, 44, 59, 61} Relationship equity ^{27, 34, 44, 59, 61} CRM ^{11, 27, 34,54, 58, 61} Quality ²⁵ Option value to abandon customer ¹⁷ Service quality ⁶⁷	Marketing expenses ^{4, 32, 69} Marketing actions ^{5, 27 38,39, 60} Price ⁵ Brand equity ^{27, 34, 44, 45} Value equity ^{27, 34, 44} Relationship equity ^{27, 34, 44} CRM ^{11, 27 34,58} Quality ²⁵ Option value to abandon customer ¹⁷ Service quality ⁶⁷

Research gaps form on manufacturing side. No research was identified about online service channels, salesman expertise, competitive advantage and stockouts on manufacturing sector. The gaps remained same as B2B side. In the next chapter it is looked what kind of impact different factors have customer profitability.

6.2 Factors' impact on customer profitability

Articles are divided for statistical and non-statistical categories. Statistical category contains empirical studies which tests factors impact to customer profitability. The second category is non-statistical studies where are articles that for example make frameworks about subject area without testing factors impact to profitability using statistical methods. Table 16 lists customer related factors. Articles that are addressed a factor are marked up with “X” and those articles that did not handle a particular factor are marked up as “-“. “X+” means that article found positive impact to profitability and “X-“means impact was negative. Table does not include all the factors inside of this study. In this chapter tables are made by selecting the main factors and then listing the authors who has studied them. Articles are listed in chronological order.

Table 16. Customer related factors (part 1)

Statistical studies:	Age	Size	Social class	Relationship duration	Cross-buying
Reinartz & Kumar (2000)	-	-	-	X	-
Niraj et al. (2001)	-	X+	-	-	-
Reinartz & Kumar (2003)	-	-	X+	-	X+
Campbell & Frei (2004)	X	-	X	X	X
Bowman & Narayandas (2004)	-	X+	-	-	-
Van Triest (2005)	-	X+	-	-	-
Keiningham et al. (2005)	-	X	-	-	-
Reinartz et al. (2005)	-	-	-	X+	X+
Kumar et al. (2006)	-	-	-	X+	X+
Haenlein et al. (2007)	X	-	-	-	-
Benoit et al. (2009)	X-	X+	X	X	-
Lee et al. (2010)	X	-	X	X	-
Frischmann & Gensler (2011)	X	X	X	X	X+
Mark et al. (2012)	-	X+	-	X	X
Shah et al. (2012)	-	-	-	-	X
Non-Statistical studies:					
Storbacka et al. (1994)	-	-	-	X	-
Kumar (2006)	-	-	-	X	X
Blattberg et al. (2009)	-	-	-	-	X

Customer age have impact to CP. However the impact is not linear. For example customer's age affects to CP in banking world, but most profitable customers are middle-ages as among younger people and senior citizens profitability is lower. (Haenlein et al. 2007, p.231). Benoit et al. (2009, p.10480) measured customer age as "maximum age of the household member" and found negative impact to profitability in banking world.

Customer size seems to affect profitability positively. Van Triest (2005, p.153-154) focused customer size in his study and concluded that size affects positively to CP mainly because exchange efficiencies. That offsets negative effects of lower product margins (Van Triest 2005, p.153-154). Five from seven studies found positive impact. Also Frischmann and Gensler (2011, p.21) found small positive impact between size and CP, but it was not statistical significant. Based on these observations, assumption that bigger customers are more profitable seems to have scientific background, but as Kaplan and Narayanan (2005, p.8) said if costs are not fully priced in large customers can be the most unprofitable ones. Keiningham et al. (2005, p.177) tested the statement of Kaplan and Narayanan (2005, p.8) and confirmed that large customers tends to be the most or the least profitable ones.

Cross-buying seems to have positive impact to profitability, however it seems to be customer depended as Shah et al. (2013, p.78) points out that 10–35 % customers who cross-buys are unprofitable. For these customers higher lever cross-buying increases company's losses (Shah et al. 2013, p.78). **Relationship duration** does not have as clear effect on customer profitability as were expected. There were eight statistical studies and only from two can positive impact be concluded. Reinartz and Kumar (2000, p.28) explains that long-life customers are not cheaper to serve and those customers do not pay higher prices. Another explanation for these results could be the statistical methods that were used by these studies. Benoit and Van den Poel (2009, p.10481) made quantile regression analysis and they found out that relationship duration does not have significant

effect to profitability for lower or middle quantiles, but for higher quantiles it has clear positive effect. According to them ordinary least squares –method can underestimate results. More customer related factors are represented at Table 17.

Table 17. Customer related factors (part 2)

Statistical studies:	Satisfaction	Loyalty	Share of wallet	Word of mouth	Multichannel shopping
Bowman & Naravandas (2004)	X	X+	X+	-	-
Keiningham et al. (2005)	X	-	X	-	-
Reinartz et al. (2005)	-	-	X	-	-
Kumar & Venkatesan (2005)	-	-	-	-	X+
Fader et al. (2005)	-	-	-	-	-
Kumar et al. (2006)	-	X	-	-	X+
Yu (2007)	X	-	-	-	-
Venkatesan et al. (2007)	-	-	-	-	X+
Niraj et al. (2008)	X	-	-	-	-
Homburg et al. (2008)	X+	X+	X+	-	-
Larivire (2008)	-	-	X+	-	-
Villanueva et al. (2008)	-	-	-	X+	-
Smith & Chang (2009)	X+	X	-	-	-
Furinto et al. (2009)	-	X+	-	-	-
Lee et al. (2010)	X+	-	-	-	-
Li (2010)	X+	X+	-	-	-
Zhang et al. (2010)	-	X+	-	-	-
Frischmann & Gensler (2011)	X+	-	X+	X+	-
Qi et al. (2012)	X	X+	-	-	-
Kumar et al. (2013)	-	-	-	X+	-
Non-Statistical studies:					
Storbacka et al. (1994)	X	-	-	-	-
Jacobs et al. (2001)	X	X	-	-	-
Pfeifer & Farris (2004)	-	X	-	-	-
Kumar & Shah (2004)	-	X	-	-	-
Hogan et al. (2004)	-	-	-	X	-
Liu & Wu (2005)	-	-	-	X	-
Ho et al. (2006)	X	-	-	-	-
Algesheimer & Wangenheim (2006)	-	-	-	X	-
Kumar et al. (2007)	-	-	-	X	-
Blattberg et al. (2009)	X	-	-	-	X
Kumar et al. (2010a)	-	-	-	X	-
Kumar et al. (2010b)	-	-	-	X	-
Weinberg & Berger (2011)	-	-	-	X	-
Damm & Monroy (2011)	-	-	-	X	-
Walsh & Elsner (2012)	-	-	-	X+	-

Half of the statistical studies about **customer satisfaction** found positive impact to customer profitability. Bowman and Narayandas (2004, p.442-445) found that customer's satisfaction to company's closest competitor affects negative for profitability. **Customer loyalty** seems to enhance customer profitability. Higher share-of-wallet, multichannel shopping, purchase frequency and referrals had also a positive impact to customer profitability. Research regarding on multichannel shopping is vanished after year 2009.

Word of mouth is central role as in non-statistical studies and it has handled with many different aspects and terms. Algesheimer and Wangenheim (2006, p.48) developed term **Customer's Network Lifetime Value** and Weinberg and Berger (2011, p.328) extends definition of CLV to include customer's referral behavior in social media and proposed term **Customer Social Media Value**. In past four years subject area is widened to take into account other than monetary and referral values of customers. Kumar et al. (2010b, p.297) talks about **Customer Engament Value** which handles referral value, customer influence value and customer knowledge value. Knowledge value means value added by customer feedback, like ideas for innovations and improvements and others factors that can be learned from customer (Kumar et al. 2010b, p.299). Damm and Monroy (2011, p.261-272) review past studies about referral-, learning- and innovation values. Credit risk was handled and measured in credit card industry and it was noticed that customer acquisition channel affects to how big customer related risks are (Singh et al. 2013, p.425). No studies about counterparty risks were found in other industries within subject area of this study. Table 18 presents firm related factors.

Table 18. Firm related factors

Statistical	Service channel	Marketing channel	Target marketing	Brand Equity	Value Equity	Relationship Equity
Hitt & Frei (2002)	X+	-	-	-	-	-
Venkatesan & Kumar (2004)	-	-	X+	-	-	-
Reinartz et al. (2005)	-	X	-	-	-	-
Singh et al. (2009)	-	X	-	-	-	-
Shen & Chuang (2009)	-	-	X+	-	-	-
Van Triest et al. (2009)	-	-	X+	-	-	-
Hyun (2009)	-	-	-	X+	X+	X+
Campbell & Frei (2010)	X-	-	-	-	-	--
Kumar, Petersen & Leone (2010)	-	-	X+	-	-	-
Xue et al. (2011)	X	-	-	-	-	-
Chan et al. (2011)	-	X	-	-	-	-
Steffes et al. (2011)	-	X	-	-	-	-
Gensler et al. (2012)	X+	-	-	-	-	-
Kim & Ko (2012)	-	X	-	X-	X	X
Kim (2012)	-	-	-	X+	X+	X+
Kim et al. (2012)	-	-	-	X+	X+	X+
Zhang et al. (2013)	-	-	-	X+	X	X+
Stahl et al. (2012)	-	-	-	X+	X	X+
Non-Statistical						
Lemon et al. (2001)	-	-	-	X	X	X
Leone et al. (2006)	-	-	-	X	-	-
Kumar & George (2007)	-	-	-	X	X	X
Severt & Palakurthi (2008)	-	-	-	X	X	X
Jones et al. (2009)	-	-	-	X	X	X
Shao & Chen (2013)	-	-	-	X	X	X

Online service channels were studied in banking world. Findings were not consistent as the results of Campbell and Frei (2010, p.21) suggests that there are negative impact to profitability. However they found that among customers who

were using online channel, retention rates were higher. Gensler et al. (2012, p.192) concluded that online channel decreased cost to serve and increased revenues for bank.

Marketing channels were also studied. Steffes et al. (2011, p.90) noticed that **internet and direct mailing** generated more profitable customers than face-to-face selling or telemarketing in credit card industry. Reinartz et al. (2005, p.70-71) made findings that **face-to-face selling** are more profitable than **telemarketing** for high-tech B2B-manufacturer. In their study **email marketing** was the least profitable. Chan et al. (2011, p.847) study suggests that customers acquired via **Google advertisement** are more profitable than customers acquired via conventional methods. As for looking pattern based on these studies, internet (excluding email) channel generates more profitable customers, but it could be very company depended.

Kim and Ko (2012, p.1480) focused on **social media marketing** (SMM) from customer equity perspective. They concluded that SMM affects to CE-drivers, but brand equity had negative effect on CE. Value equity and relationship equity did not have significant effect on CE. (Kim & Ko 2012, p.1484-1486) Their results are contrary to others as all other statistical studies found that **brand and relationship equity** had positive impact to CE.

Target marketing seems to be effective way to enhance customer profitability. Four studies were made about target marketing and all of them recognized positive impact to customer profitability. Van Triest et al. (2009, p.125) measured how **customer specific marketing expenses**, like giving free equipment for customers, affects to customer profitability. They concluded that it was profitable for larger customers, but not for smaller.

Richards and Jones (2008, p.126-128) made research propositions impacts of CRM-activities to customer equity. From the subject area has already made studies. Wu and Hitt (2011, p.262) found that CRM activities has positive impact to **relationship quality**, and enhanced relationship quality leads to higher CLV. Kim (2012, p.241-242) concluded that **CRM methods** can be used to enhance CE-drivers which will have positive impact to organizational performance. Zhang et al. (2013, p.119) studied how **product innovation** affects customer equity and concluded that impact depends on **product category** and **customer's nationality**. Svendsen et al. (2011, p.525) noticed that taking customer aboard to product development enhances profitability. They also concluded that customer specific investments, for example **logistics or information systems**, can impact positively to customer profitability. Competition intensity had negative affect to profitability. (Sevendsen et al. 2011, p.525)

If marketing activities are looked more closely, there were for example **reward and affinity cards** evaluated in credit card industry. Bakhtiari et al. (2013, p.96) concluded that affinity cards have no positive impact to customer profitability and Murthi et al. (2011, p.5) noticed that reward and affinity card holders are less profitable than conventional card holders. However Singh et al. (2013, p. 432) suggests that affinity and reward card holders can be more profitable when customer related risks are taken into account. They explained difference that those customers have a significantly lower level of risk and suggested that reward and affinity card programs can be good method for banks acquire less risky customers. Dreze and Bonfrer (2005, p.14-15; p.25) studied optimal email-marketing frequency. High frequent mailings would cause negative CE because of unsubscriptions and cost of creating content. Infrequent inter e-mail times would maximize size of customer base, but would generate low amount of purchases. In his study optimal email marketing frequency was 85 days. (Dreze & Bonfrer 2005, p.14-15; p.25) Malthouse (2010, p.4927-4939) argued that marketing contact makes customers more profitable in the future. He discussed how this incremental in CLV should be taken into account.

Lee et al. (2010, p.2323) noticed that **advisers' level** has impact to profitability in financial firm, higher adviser's status is in company, more profitable customers are acquired. However advisers' qualifications (degrees) do not impact to profitability (Lee et al. 2010, p.2323). No other studies about **salesman's role** for customer profitability were found.

7 DISCUSSION AND CONCLUSIONS

The first objective of this thesis was to find out factors which impact to profitability are studied in scientific articles. The second objective was to find out the main authors and publishers from the subject area. Expectations were to find factors from marketing and management accounting literature. However research was concentrated on marketing journals and this study did not succeed to gather management accounting perspective for the subject area. Analysis of this study is based on 82 articles that were found from Scopus and Web of Science databases after manual selection.

At the beginning of the study it was noticed that literature information for the subject area are limited. It was decided to use bibliometric methods to conduct the research because all customer profitability factors were not known in advance. Because of limited information on literature did this study design definition for customer profitability factor. Also the complexity of the subject area was presented with a new graphical figure. Those were presented in introduction. The actual research results of this study benefits scientific community. Customer profitability factors were gathered in a single study. The study also divided factors business-to-consumer, business-to-business, service and manufacturing sector based on what context factors were studied. This gives a possibility to interpret research amount on different business context. For the main factors were their impact on profitability summarized. The way of presentation gives also a possibility to view how research is placed on timeline for the main factors.

This may be the first study trying to gather marketing and management accounting perspective regarding on customer profitability factors in the same study. However these two research field have too different approach on the subject area that this study was unsuccessful to track management accounting perspective. Although management accounting perspective is lacking, this study

can waken up discussion why these two scholarships are so separate. During reference analysis it was noticed that a dialogue between marketing and management accounting literature is limited. However used search words “customer equity” and “customer lifetime value” may have represented too strictly marketing aspect. Management accounting literature may also approach the subject area from firm profitability or firm performance perspectives which caused that search words did not catch articles from that scholarship.

Managerial implications for business sector are constricted as this study focused on describing the research field. However this study sums up characteristics of profitable customers. Those can be used for marketing purposes. Based on customer characteristics it is possible make segments for target marketing. Study also summarized how different marketing channels can affect on profitability although it can be very company depended. Management accounting department can take into consideration if some factors could be used as performance measure indicators. Factors, for example satisfaction, share-of-wallet and loyalty are in contact with profitability and could provide information about changes on organizational performance, market place and adduce issues that need improvements. It could be alarming if values for these indicators are in downtrend. Additional factors like learning value, knowledge value and referral value are good reminder for accounting management department that customer profitability calculations does not give a whole picture of customers contribution for the company.

The results also suggest that many factors impact on profitability are depended on pricing. Shah et al. (2013, p.78) pointed out that 10-35% of cross-buying can be unprofitable and the study from Keiningham et al. (2005, p.177) strengthens the observation that the portion of large customers can also cause a remarkably losses. It could be generalized that more buying by customer cannot rescue failed pricing. For example higher share-of-wallet and purchase frequency as quantitative factor could also cause cumulative losses by proportion of customers. This highlights the

importance of customer profitability analysis to identify unprofitable customers and need for activity-based costing for pricing decisions so these losses could be minimized. Communication between management accounting and marketing department need to be efficiently that selling work is not directed to customers who causes losses and wasted resources.

Based on descriptive analysis, reference analysis and content analysis can this study's research questions answered. Publication activity was concentrated on years 2004-2013 and on service sector. Research quantity was also a little higher in B2C context than B2B. A lot of research was made for example about satisfaction, word of mouth, loyalty, marketing actions and CE drivers. There were multiple authors that had published more than one article about customer profitability factors. The most productive author was clearly Kumar Vipin. He had ten first authorship articles included to this study during article selection process and five from those were among the twenty most cited articles. Kumar had the highest h-index among authors that were compared. That suggests that also his other publications are highly cited. Co-authorship network shows that Kumar has published several articles from the subject area with Venkatesan, R., Petersen, J., Reinartz, W., Shah, D., Thomas, J. and Leone, R.. When looking individual popularity of the articles using citation counts had from these authors a total nine articles in the top 20. It is the major research group on the subject area. The answers for the research questions are summarized in Table 19. At the beginning of this study was also presented Mulhern's (1999) research propositions about the customer profitability factors. Those questions are answered in appendix 4.

Table 19. The main conclusions of the study

Research question	Answer
What customer profitability factors are studied in scientific articles?	There were multiple factors identified. A lot of research was made for example about satisfaction, word of mouth, loyalty, marketing actions and CE drivers. Customer profitability factors can be seen in chapter 6.1 or at appendix 1.
Who are main researchers and publishers?	<p>The main researcher is Kumar Vipin from Georgia State University. Descriptive analysis and reference analysis points out that he is the most productive author. His many articles were also highly cited. He has also high h-index and the biggest co-authorship network forms around him. The second most productive author was Venkatesan, R. and he had also highly cited articles.</p> <p>The research was concentrated on marketing journals. Descriptive analysis and reference analysis points out that Journal of Marketing is the most active publishers in and around the subject area. Indicators assess it high quality publishers. Journal has published a significant portion from the most cited articles and references.</p>
What are the most cited articles?	<p>Based on descriptive analysis area has Blattberg and Deighton (1996) the most cited article with 318 citations. Venkatesan and Kumar (2004) and Reinartz et al. (2005) were the next articles in the top list.</p> <p>Reference analysis revealed that Rust et al. (2004), Reinartz and Kumar (2000) and Blattberg & Deighton (1996) were the most cited by level 2 articles. Those have also the highest citation counts at Scopus from the articles which were handled in this study.</p>
How are articles placed in time?	The publication activity in the subject area was concentrated on years 2004-2013. The peak years were 2009 and 2011. Only a few articles were found before the year 2001. Based on reference material the highest publication counts per year were on years 2000-2005. During that time was also published a remarkable portion of the most cited references.
Are there research gaps in the subject area?	<p>The results suggest that research gaps in B2B context are customer's attitudes, customer related risks, salesman role, stockouts, online service channels and competitive advantage.</p> <p>Other research gaps formed to manufacturing sector. Those are direct delivery units, number of delivery locations, customer related risks, competitive advantage, online service channels, salesman expertise and stockouts.</p>

Further study is required to get more comprehensive understanding from the subject area. The next step is to make a study about sub-factors. It would be especially useful for business sector to know methods how the customer profitability factors can be affected. It is advisable that new research about customer profitability factors would be directed on manufacturing sector where the research amount is more limited. Further study is also required to gather managerial accounting perspective on the subject area. There may be more suitable search words for that purpose than those that were used in this study.

A bibliometric research method is evolving. In 2000s was presented h-index and citation proximity analysis. Study did also identify based on literature newer indicator called as Altmetrics. New methods and indicators are worth to be tracked as they can give new possibilities for future studies. The most of the articles were found from Scopus. Only five articles from 82 were found only from Web of Science. This study strengthens Lukkari's (2011, p.53) conclusions that Scopus could be used as the only database for bibliometric studies and still provide comprehensive results.

8 SUMMARY

This thesis focused on study research field regarding on customer profitability factors. The one of the research problems was to find out what factors' impact on customer profitability has been studied in scientific articles. The research field concerning customer profitability factors was analyzed using bibliometric research method. Used databases were Scopus and Web of Science. Articles were retrieved using search words "customer profitability", "customer lifetime value" and "customer equity". The year 2014 was excluded from the study and search was limited to articles and review-articles. The expectations were to find articles from marketing and accounting and management journals, but the research was concentrated on marketing journals.

Search words provided 770 articles and article selection process resulted 82 articles for further analyzes. Descriptive analysis, citation analysis and content analysis were made. Bibexcel and Pajek software were used in this study. Bibexcel was used for frequency calculations and co-authorship network is drawn with Pajek. Research gaps were looked by dividing factors to business-to-consumer, business-to-business, manufacturing and service sectors based on the context where factors were studied.

The most of the articles were published after year 2003. The median publication year was 2009. A lot of research was made for example about satisfaction, word of mouth, loyalty, marketing actions and customer equity drivers. The peak publications years based on reference analysis are 2000-2005. Noticeable amount of the most cited references were published during that time period. Descriptive analysis and reference analysis revealed that the main researcher on the subject area is Kumar Vipin from Georgia State University. Research on the subject area was concentrated on marketing journals. The main journal on the subject area is Journal of Marketing. The most research was conducted on service sector.

Research gaps were found from B2B and manufacturing context. It was concluded that management accounting perspective requires further study.

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APPENDIX 1. Content of Level 2 Articles

Authors	Year	Method	Industry	B2C /B2B	Factors
1. Algesheimer & Wangenheim	2006	Descriptive, theoretical framework; Extends definition of CLV	-		Word of mouth
2. Bakhtiari, Murthi & Steffes	2013	Statistical, propensity score matching	Credit card industry	B2C	Affinity credit card
3. Benoit & Van den Poel	2009	Statistical, quantile regression	Financial service company	B2C	Age of oldest household member, number of household members, No. of foreigners in, Social class, Purchase frequency, recency, relationship duration
4. Blattberg & Deighton	1996	Descriptive, decision calculus	-	-	Acquisition & retention expenses
5. Blattberg, Malthouse & Neslin	2009	Descriptive, reviews & summarizes previous studies	-	-	Satisfaction, marketing actions, cross-buying, multichannel purchase, pricing, past purchase behavior
6. Bowman & Nayayandas	2004	Statistical, system of equations, methods of least squares,	Metal industry	B2B	Customer size, loyalty, satisfaction with closest competitor, share of wallet, customer management costs, sharing cost information with customer
7. Campbell & Frei	2004	Statistical, regression analysis, comparative	Banking sector	B2C	Age, income, relationship duration, number of products, location, relationship duration, past customer profitability
8. Campbell & Frei	2010	Statistical, methods of least squares	Banking sector	B2C	Online service channel
9. Chan, Wu & Xie	2011	Statistical, markov chain monte carlo & pareto/NBD	Online grocery store	B2B	Marketing channel

(Appendix 1 continues)

Authors	Year	Method	Industry	B2C /B2B	Factors
10. Chandon, Morwitz & Reinartz	2004	Statistical	Online grocery store	B2C	Measurement of customer intentions
11. Damm & Monroy	2011	Review	-	-	CRM, referral potential, innovation potential, learning potential
12. Drèze & Bonfrer	2008	Statistical, logit regression	Entertainment industry	B2C	Marketing frequency
13. Fader, Hardie & Lee	2005	Mathematical modelling, links RFM with CLV	-	B2C	Recency, frequency & monetary value
14. Frischmann & Gensler	2011	Statistical, correlation analysis	Financial service provider	B2C	Share of wallet, satisfaction, affective commitment, word of mouth, cross-selling, gender, size of wallet, household income, age, household size, length of relationship, competitive advantage
15. Furinto, Pawitra & Balgiah	2009	Statistical, stochastic mathematical modeling derived from Markov Chain analysis	Airline & Bank industry	Unknown	Customer loyalty & loyalty programs
16. Gensler, Leeftang & Skiera	2012	Statistica, hybrid matching method	Banking industry	B2C	Online service channel
17. Haenlein, Kaplan & Schoder	2006	Descriptive, links option value to CLV	.		Option value
18. Haenlein, Kaplan & Beeser	2007	Modelling CLV using Markov Chain, classification- and regression tree	Banking industry	B2C	Age
19. Hidalgo, Manzur, Olavarrieta & Farias	2008	Comparative, calculates CLV after price is changed. Publicly available data.	Pension company	Unknown	Price
20. Hitt & Frei	2002	Statistical, regression analysis	Banking industry	B2C	Online service channel
21. Ho, Park & Zhou	2006	Mathematical modeling, Markov chain	-	-	Customer satisfaction
22. Hogan, Lemon & Libai	2004	Modeling, Empirical illustration	Hairstyle	B2C	Word of mouth, marketing
23. Homburg, Droll & Totzek	2008	Statistical, correlation analysis. Survey	310 firms	B2C/B2B	Customer prioritization, satisfaction, loyalty, share of wallet, marketing expense, past profitability

Authors	Year	Method	Industry	B2C /B2B	Factors
24. Hyun	2009	Statistical, correlation analysis	Restaurant industry	B2C	Brand equity, value equity, relationship equity
25. Jacobs, Johnston & Kotchetova	2001	Descriptive, reviews past studies and models it to B2B context	-	B2B	Customer satisfaction, loyalty, quality
26. Jing & Lewis	2011	Statistical, regression analysis. Modelling approach	Online retailer	B2C	Stockouts
27. Jones, Richards, Halsted & Fu	2009	Descriptive, framework combines theory from relationship marketing, account management and CE.	-	-	Brand equity, relationship equity, value equity, relationship, Marketing actions, CRM
28. Keiningham, Perkins, Munn, Aksoy & Estrin	2005	Statistical, regression analysis	Financial industry	B2B	Size, satisfaction, share of wallet
29. Kim & Ko	2012	Statistical, correlation analysis	Luxury fashion industry	B2C	Social media marketing, value equity, relationship equity, brand equity, purchase intentions
30. Kim	2012	Statistical, correlation analysis	Cross-industry study	B2C/B2B	CRM. Brand equity, value equity, relationship equity
31. Kim, Ko, Xu & Han	2012	Statistical, structural equation model	Luxury fashion industry	B2C	Attitudes, brand equity, relationship equity, value equity
32. Kumar	2006	Descriptive, framework for maximizing CLV	-	B2C/B2B	Marketing expenses, Loyalty, product returns, past purchase activity, recency, frequency, cross-buying
33. Kumar, Aksoy, Donkers, Venkatesan, Wiesel & Tillmanns	2010	Descriptive, framework, extends definition of CLV	-	-	Customer referral value, influence value & knowledge value
34. Kumar & George	2007	Descriptive, framework, summarizes different approach to measure CE	-	-	Brand equity, value equity, relationship equity, CRM
35. Kumar, Petersen & Leone	2007	Descriptive, Mathematical formula	-	B2C	Customer referral value
36. Kumar, Petersen & Leone	2010	Descriptive, four case companies, statistical analysis	-	B2C/B2B	Target marketing, customer referral value

Authors	Year	Method	Industry	B2C /B2B	Factors
37. Kumar, Petersen & Leone	2013	Statistical, regression and correlation analysis, conceptual framework	Telecommunication and financial institute	B2B	Word of mouth
38. Kumar, Pozza, Petersen & Shah	2009	Descriptive, framework	-	-	Relationship marketing.
39. Kumar & Shah	2004	Descriptive, framework	-	-	Loyalty program
40. Kumar, Shah & Venkatesan	2006	Statistical, regression and correlation analysis	Retail store	B2C	Cross-purchase, multichannel shopping, relationship duration, frequency, loyalty, product returns
41. Kumar & Venkatesan	2005	Statistical, correlation and regression analysis, comparative	Computer software & hardware manufacturer	B2B	Multichannel shopping
42. Larivire	2008	Statistical, Structural equation model, regression and correlation analysis. Conceptual framework.	Financial service industry	Unknown	Share of wallet
43. Lee, Lin & Chen	2010	Statistical, regression and correlation analysis	Banking industry	B2C	Satisfaction, age, salary, frequency, product quantity, advisers level, number of advisers professional qualifications, relationship length
44. Lemon, Rust & Zeithaml	2001	Descriptive, framework of driver identification	-	-	Brand equity, relationship equity, value equity
45. Leone, Rao, Keller, Luo, McAlister & Srivastava	2006	Descriptive, modeling approach	Manufacturing & Retailer	B2C/B2B	Brand equity
46. Li	2010	Statistical, correlation analysis	Credit card industry	B2C	Satisfaction, loyalty
47. Malthouse	2010	Mathematical modeling Empirical illustration	Catalog retailer and charity	Unknown	Marketing contact
48. Mark, Niraj & Dawar	2012	Statistical, regression analysis	Computer parts distributor	B2B	Relationship duration, number of orders, cross-buying, number of returns, frequency, order amount (\$)

Authors	Year	Method	Industry	B2C /B2B	Factors
49. Mulhern	1999	Case study: customer profitability analyse	-	-	Research propositions for the subject area
50. Murthi, Steffes & Rasheed	2011	Statistical, comparative	Credit card industry	B2C	Reward & affinity cards
51. Nies & Natter	2010	Statistical, analysis of variance and logistic regression	Retail stores	B2C	Retail coupons
52. Niraj, Foster, Gupta & Narasimhan	2008	Statistical, longitudinal study using least square analysis	Beverage supply company	B2B	Customer satisfaction & satisfaction program
53. Niraj, Gupta, Narasimhan	2001	Statistical, regression analysis.	Grocery wholesaler & distributor	B2B	Volume, delivery locations, number of orders, number of items, special items, direct delivery units
54. Persson	2013	Descriptive, interviews	Banking sector	B2C	Management strategies
55. Pfeifer & Farris	2004	Mathematical modeling	-	-	Retention rate / customer loyalty
56. Qi, Zhou, Chen & Qu	2012	Statistical, correlation analysis	Mobile data services	B2C	Loyalty, Satisfaction, Nationality
57. Reinartz, Thomas & Kumar	2005	Statistical, system of equations, correlation analysis, framework for optimization of marketing efforts	High tech manufacturer	B2B	Marketing expenses, contact channels, relationship duration, cross-buying, frequency, share of wallet
58. Richards & Jones	2008	Descriptive, conceptual framework	-	-	CRM-activities
59. Severt & Palakurthi	2008	Descriptive, interview	Convention industry	Unknown	CE-drivers & sub- drivers
60. Shah, Kumar, Qu & Chen	2012	Statistical analysis, Comparative	Cross-industry	B2C/B2B	Cross-buying
61. Shao & Chen	2013	Qualitative (Sub-factors: statistical)	Service industry	B2C	Brand equity, relationship equity, value equity, CRM
62. Shen & Chuang	2009	Statistical analysis	Department store	B2C	Target marketing
63. Singh, Murthi & Steffes	2013	Models customer risks and makes a statistical study	Credit card industry	B2C	Customer related risks, marketing channels, affinity & reward cards.

Authors	Year	Method	Industry	B2C /B2B	Factors
64. Smith & Chang	2009	Statistical analysis	Banking sector	Unknown	Satisfaction, loyalty, marketing actions
65. Stahl, Heitmann, Lehmann & Neslin	2012	Statistical, Correlation analysis	Automobile industry	Unknown	Marketing actions, brand equity, relationship equity, value equity
66. Steffes, Murthi & Rao	2011	Statistical	Credit card industry	B2C	Marketing channels: direct mail, internet, teleselling
67. Storbacka, Strandvik & Grönroos	1994	Descriptive, conceptual framework	-	-	Service quality, satisfaction, relationship duration, relationship strength
68. Svendsen, Haugland, Grønhaug & Hammervoll	2011	Statistical, Correlation analysis	Norwegian exporters & importers	Unknown	Customer involvement in product development, product differentiation, Supplier specific investments, competition, competition orientation, brand profiling emphasis
69. Thomas, Reinartz & Kumar	2004	Descriptive, modeling	Examples from different industries	Unknown	Marketing expenses
70. Walsh & Elsner	2012	Quantitative, Calculates CLV for different groups and makes comparisons	Mail order firm	B2C	Word of mouth
71. Van Triest	2005	Statistical, Correlation analysis	Hygiene industry	B2B	Size
72. Van Triest, Bun, Van Raaij & Vernooij	2009	Statistical analysis	Hygiene industry	B2B	Marketing expenses, Target marketing
73. Weinberg & Berger	2011	Descriptive, Extends definition of CLV.	-	-	Social media as referral value
74. Venkatesan & Kumar	2004	Statistical analysis, Conceptual framework	IT manufacturer	B2B	Target marketing
75. Venkatesan, Kumar & Ravishanker	2007	Statistical analysis	Apparel retailer	B2C	Multichannel shopping
76. Villanueva, Yoo & Hanssens	2008	Statistical, modeling approach	Web hosting	B2B	Word of mouth
77. Wu & Li	2011	Statistical analysis	Hotel industry	B2C	CRM, Relationship quality

Authors	Year	Method	Industry	B2C /B2B	Factors
78. Xue, Hitt & Chen	2011	Statistical	Retail bank	B2C	Online service channel
79. Yamamoto Sublaban & Aranha	2009	Statistical, conceptual framework	Mobile phone sector	B2C	Post paid & prepaid subscriptions
80. Yu	2007	Statistical, correlation and regression analysis	Banking sector	B2C	Satisfaction
81. Zhang, Ko & Lee	2013	Statistical, correlation analysis	Clothing industry	Unknown	Product, Nationality, Brand equity, Relationship equity and Value equity
82. Zhang, Dixit & Friedmann	2010	Statistical,	Personal care industry	B2C	Loyalty
<u>Articles from reference analysis (used only in content analysis)</u>					
83. Reinartz & Kumar	2000	Statistical	Catalog retailer	B2C	Relationship duration
84. Reinartz & Kumar	2003	Statistical	Catalog retailer High-technology firm	B2C/B2B	Spending level, cross-buying, frequency, product returns, loyalty instruments (b2c), availability of line of credit (b2b), marketing frequency, location, income

APPENDIX 2. Level 1 Articles

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APPENDIX 4. The answers for Mulhern's research propositions

Mulhern's research propositions (Mulhern 1999, p.38)	Results based on Level 2 articles
<i>"Customer profitability is positively related to customer satisfaction."</i>	Confirmed
<i>"Customer profitability is positively related to brand loyalty."</i>	Loyalty and brand affects positively to profitability, but it is not studied in form of "brand loyalty".
<i>"Customer profitability is positively related to the length of a customer relationship."</i>	Studied, but results are not unanimous.
<i>"Customer profitability is positively related to the match between product's benefits with the customer's needs."</i>	Not answered, but CE-driver known as value equity includes by definition customer's perception on what he gets compared to how much is paid for. Half of the statistical studies found positive impact on CE for value equity.
<i>"Customer profitability is positively related to the quantity and quality of marketing communications to the customer."</i>	Marketing methods and channels affects to profitability. Other channels are more profitable than others. Target marketing seems to be an efficient method. The results suggest that too frequent or too scarce marketing are not optimal. Marketing efforts and frequency are studied for example by Reinartz & Kumar (2003, p.94)
<i>"Customer profitability is inversely related to price sensitivity."</i>	Not answered. There were articles about price, but not in form of "price sensitivity".
<i>"Customer profit is directly related to the degree of favorableness of customers' attitudes toward a company or brand."</i>	Studied by Kim et al. (2012) in context of luxury brand. Attitudes toward brand did not increase profitability, but affected to value and brand equity.
<i>"Customer profit is directly related to the portion of a customer's business that a company owns."</i>	Confirmed. Factor is known as share-of-wallet.
<i>"The concentration of customer profitability is positively related to the breadth of brands and product lines offered."</i>	Not answered. However it is known that cross-buying affects positively on profitability.
<i>"The concentration of customer profitability is positively related to the variability in prices offered. "</i>	Not answered