International Journal of Industrial Engineering and Engineering Management (IJIEEM), Vol. 1, No. 1, June 2019

http://ojs.uajy.ac.id/index.php/IJIEEM

Does Customer Satisfaction Really Lead Company to Financial Success? A Review and Meta-analysis

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ABSTRACT

All the theories about market and marketing research, customer relationship management, and business in general, believe that customer satisfaction is one of the main factors for company financial success. However, a survey on 64 studies shows a wide variation of the correlation between customer satisfaction and financial performance. The correlation coefficients are varied from -0.256 to 0.899. This study applies a meta-analysis on those 64 studies' findings to find the true correlation between customer satisfaction and financial performance. The analysis clusters the 64 studies based on year of research, business category observed, and geographical area of research. The result shows that the correlation between customer satisfaction and financial performance is relatively high (0.525) before 1990, becomes confusing (not-significantly correlated) in 1991-2000, increases (0.626) in 2001-2010, and decreases (0.595) after 2011. Based on business category, the two variables are not significantly correlated both in manufacturing industries and in service industries. The two variables are significantly correlated according to the studies conducted in Europe region (0.566) and Asia-Africa (0.657), but could not to be proven significantly correlated in USA region. The insights from the meta-analysis findings are: (1) the customer satisfaction role is change by time as well as the changes of industry environment, so that research on customer satisfaction will always be beneficial; (2) in individualist society like USA, further researches on customer behavior and culture are required to find more clear explanation about the role of customer satisfaction as well as other financial success factors, on the company performance.

Keywords: customer satisfaction, financial performance, meta-analysis, correlation

Article Info: Received April 28, 2019; Revised 23 May, 2019; Accepted 18 June, 2019.

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1. INTRODUCTION

1.1 Customer Satisfaction and Company Success

Experiences of some companies shows that customer satisfaction builds customer loyalty. Customer loyalty leads to profitable relationships, and in turn, results high company performance. Thus, customer satisfaction plays important role in marketing research and customer relationship management (Kotler *et al*., 2017).

Company success can be achieved through innovation, operational efficiency, and marketing success. Marketing concepts believe that satisfying customer is a stepping stone to achieve marketing target and profit, so that marketing strategies and efforts are devoted to satisfy customer. Measuring customer satisfaction is used to measure the potency of marketing success (Kotler *et al*., 2017).

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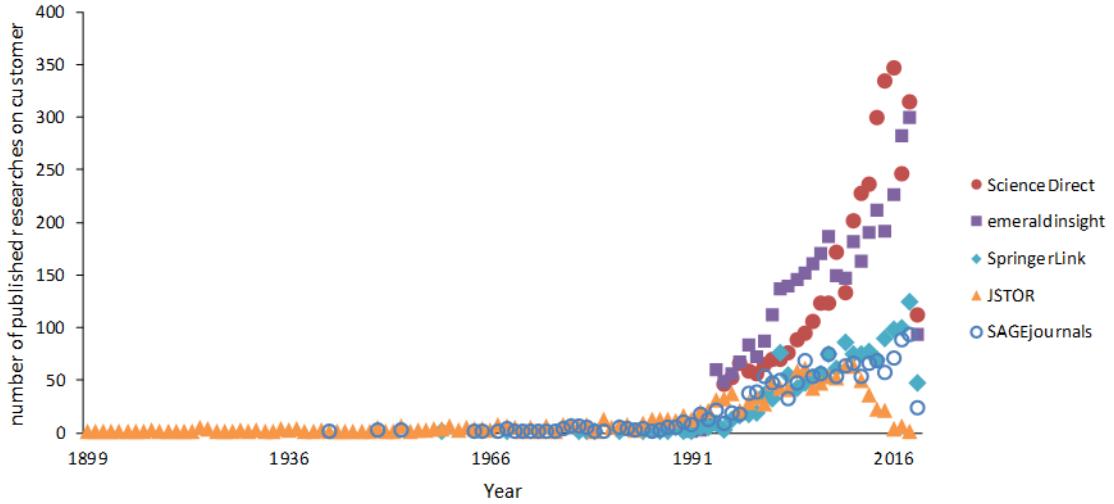

Figure 1. The growth of the number of researches on customer

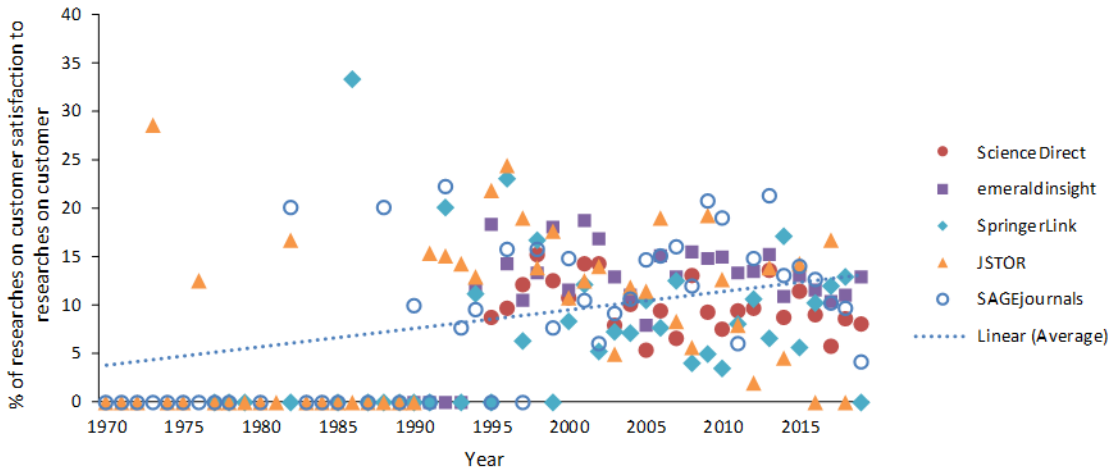

Figure 2. The portion of researches on customer satisfaction to researches on customer

Customer relationship management (CRM) is one of nine 9 building blocks of business model and an important activity for company revenue generation. CRM is dedicated (1) to manage the old customers so that they stay loyal to the company and/or product or brand, and (2) to make the new customers being loyal. One of many data surveyed, recorded, and analyzed in CRM is customer satisfaction (Osterwalder, 2010; Chopra & Meindl, 2004).

1.2 Researches on Customer and Customer Satisfaction

The belief on the role of customer satisfaction in achieving company success makes discussions and researches on customer always interesting until now. Figure 1 shows the growth of the number of researches on customer by year. Data are taken from five outstanding academic publication databases (Elsevier, 2019; Emerald, 2019; Springer Nature, 2019; ITHAKA, 2019; SAGE Publications, 2019). Publication of researches on customer begins around 1900, evolves in 1990s, and elevates rapidly from 2000s until now.

Some of the researches presented in Figure 1 focus on customer satisfaction. The percentage of the researches on customer satisfaction to the researches on customer is presented in Figure 2. As shown by the trend line, the average percentage of researches on customer satisfaction increase by time, from around 4% in 1980s to around 15% today. As the belief that customer satisfaction takes important role to the financial success, some of those researches analyze the relationship between customer satisfaction and financial success. Some of the examples are Pickle & Rungeling (1973), Anderson & Sullivan (1993), Liu & Leach (2001), Rigopoulou *et al.* (2008), Khong & Yao (2011), Calvo-Porral & Lévy-Mangin (2015), and Strenitzerová & Gaňa (2018).

1.3 Contradiction Among Researches' Findings

Although commonly both academicians and practitioners believe that customer satisfaction leads to financial success, some researches show the opposite results. Some of the researches show that customer satisfaction gives no impact on financial success (Ittner & Larcker, 1998; Jaramillo *et al.*, 2007; Lin, 2012; García-Madariaga & Rodríguez-Rivera, 2017). Some other researches, as a matter of facts, prove that customer satisfaction has negative correlation to

financial success (Anderson, *et al*., 1994; Keiningham, *et al*., 2006; Malshe & Agarwal, 2015). Some review papers on customer satisfaction finds varied correlation coefficient between customer satisfaction and financial success. Ittner & Larcker (1998) for example, show that the correlation coefficient between customer satisfaction varied between 0.098 and 0.786. The other review by Jaramillo *et al*. (2007) finds the correlation value in the range of -0.160 to 0.820.

2. RESEARCH QUESTIONS AND HYPOTHESES

The variation of the level of the relationship between financial success and customer satisfaction resulted from researches will confuse the practitioners to refer to the researches' results for their decision making. Many activities or functions like marketing strategy, marketing management, product development, business development, and sales management are closely related to customers and customer satisfaction. How actually is the relationship or how far is the correlation between financial success and customer satisfaction is still questioned and need to be analyzed comprehensively.

Deeply, the variation mentioned above can be caused by many factors. One of the possible factors is time. Industry environment change by time, so that the situation related to customer also change. The results from a research conducted in 1980s when there was no internet used for public, will be different with the results form a research conducted today when everyone can catch the world by their mobile internet.

The other possible factor affecting the variation of relationship between financial success and customer satisfaction is the business type. In service system, the service quality is perceived by customer directly, at the time the service delivered. In manufacturing, customer needs longer time to experience the quality of products. Thus, the customers of service system relatively tend to be more sensitive than the customers of manufacturing system.

Geographical area, related to the culture, people characteristic, or economic condition, may also affect the variation of relationship between financial success and customer satisfaction. The people in Europe for instant, commonly have more sophisticated taste than the people in USA or Asia. People from developing country are different from people form developed country.

In other words, the questions arise in examining the relationship between financial success and customer satisfaction are:

Q_1: Is financial success affected by customer satisfaction?

Q_2: Does the relationship between financial success and customer satisfaction change by time?

Q_3: Is the relationship between financial success and customer satisfaction affected by business type?

Q_4: Is the relationship between financial success and customer satisfaction affected by geographical area?

To answer the research questions, this paper performs meta-analysis on the correlation between the two variables. The followings are the hypotheses used as the basis for the meta-analysis.

H_1: Financial performance is positively correlated to customer satisfaction

H_2: Year of research affects the correlation between financial success and customer satisfaction

H_3: Business type affects the correlation between financial success and customer satisfaction

H_4: Geographical area of research affects the correlation between financial success and customer satisfaction

3. THEORETICAL FRAMEWORK

3.1. Variables and The Relationships

The main variables in this analysis are financial success and customer satisfaction. To prove the hypothesis H_1, the relationship of the two variables is illustrated in Figure 3. The relationship is presented by correlation coefficient, *r*.

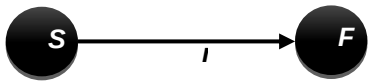

Figure 3. The relationship between customer satisfaction (*S*) and financial success (*F*)

The other variables involved are:

(1) the variable related to the time researches conducted, i.e. year of research, *T*,

(2) the variable related to the business type observed in the researches, symbolized as *B*, and

(3) the variable related to geographical area of researches, noted as *G*.

The three variables *T*, *B*, and *G* take role as moderating variables, i.e. variables affecting the relationship between dependent variable (*S*) and dependent variables (*F*). Figure 4(a), 4(b), and 4(c)

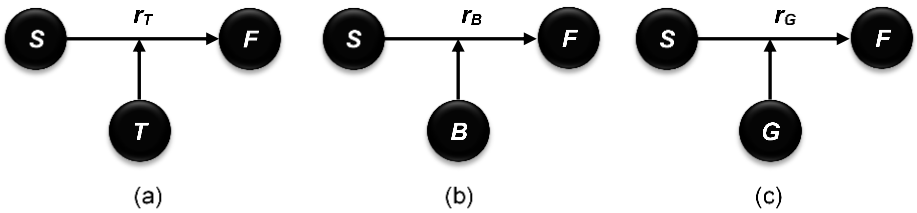

Figure 4. The effect of (a) year of research, (b) business type; and (c) geographical area

present the relationship among *S* and *F* and *T*, *B*, and *G*, respectively. The correlation coefficients are r_T, r_B, and r_G for the involvement of moderating variables *T*, *B*, and *G* respectively.

3.2. Meta-analysis

Meta-analysis is dedicated to find true distribution of a parameter based on the findings of some individual studies. Meta-analysis on correlation, as used in this study, gives the true correlation between two variables based on correlation coefficients resulted from some individual studies. Individual studies are never perfect, because of some artefacts, i.e. sampling error, measurement error, dichotomy, range of variances of the variables, structural deviation of the variables, transcript error, and other external factors. Thus, to get one true parameter value from some individual studies, meta-analysis performs some steps to clean the parameter value from the artefacts. Commonly, a meta-analysis study considers sampling error and measurement error (Hunter & Schmidt, 2004).

Meta-analysis can be performed if at least statistical information of sample size and effect size are available, to analyze sampling error, the most influential artefacts. For correlation meta-analysis, the required effect size is correlation *r*. If there is no information of *r*, the other effect size i.e. *d* statistic, *t* statistic, or *F* statistic, can be used by previously converting them to *r*. The adequate sample size in meta-analysis for non-extreme variance data is 3,000 (Hunter & Schmidt, 2004).

The steps of meta-analysis are (Hunter & Schmidt, 2004): (1) identification of correlation value from every study directly or converted from *F*, *t*, or *d*; (2) correction for sampling error; and (3) correction for measurement error. Correction for sampling error is performed by: (a) computation of mean and variance of r_i; (b) computation of sampling error variance, (c) estimation of corrected correlation variance of sampling error; (d) evaluation of significance criteria based on confidence interval of 95%, and (e) computation of the impact of sampling error based on variance. Correction for measurement error is performed by: (a) computation of corrected correlation of measurement error; (b) computation of measurement error variance; (c) estimation of corrected correlation variance of measurement error; (d) computation of significance criteria based on confidence interval of 95%, and (e) computation of the impact of measurement error.

4. METHOD

4.1. Step of Analysis

This study is carried out through five main stages. The first stage is an observation on a number of studies from a number of researches to get effect size information. A research may contain more than one studies. The second is performing meta-analysis on all the data collected to test hypothesis H_1. Third, the data are clustered based on year of research, business type, and geographical area of research. The forth stage is performing again meta-analysis on the clustered data to test hypotheses H_2, H_3, and H_4. Last, the results are analyzed to get some insights.

4.2. Data

The studies involved in the analysis are taken from the research articles contain matter of study, statistical information, and adequate sample size. Matter of study is related to the research questions and hypotheses, i.e. the relationship between financial success and customer satisfaction. The possible terminologies presenting financial success are financial success, financial performance, profit, sales performance, willingness-to-pay, customer retention, repurchase intention, and customer loyalty. Customer satisfaction are possibly presented as customer satisfaction or customer satisfaction index.

Related to hypothesis H_2, the research articles used must be in the wide range of year of research, i.e. from 1980s, the years when customer satisfaction research begin to be published, until the nowadays research, year 2018. To test hypothesis H_3, the research articles observed must cover manufacturing industry and/or service industry. The research articles involved also include the research in some geographical regions, related to hypothesis H_4. In this study, the geographical regions are classified as USA, Europe, and Asia-Africa.

Most research articles are taken from five outstanding academic publication databases (Elsevier, 2019; Emerald, 2019; Springer Nature, 2019; ITHAKA, 2019; SAGE Publications, 2019). The other small portion of articles are taken from other publisher including conference papers, to get adequate information related to the geographical area of research.

The studies involved in this meta-analyses are 64 studies, taken from 36 research articles. The 52 studies provide effect size *r*, 2 studies provide *d*, 9 studies provide *t*, and 1 study provides *F*. Reliability data used to compute measurement error are available in 70.31% of articles. The reliabilities are in the range of 0.591 to 0.980. The sample sizes of the 64 studies are in the range of 23 to 22,300 and the total sample size is 49,517, satisfy the minimum adequate sample size of 3,000 (Hunter and Schmidt, 2004). Supposed that r_i is the correlation between financial success and customer satisfaction taken from study *i*, the detail of the 64 studies is available in Appendix 1, and the related statistical information is provided in Appendix 2.

5. RESULTS AND DISCUSSION

The value of r_i of the 64 studies is in the range of -0.256 to 0.899. The meta-analysis on those studies provides the overall true correlation, *r*, of 0.494 at p = 0.022. Thus, the H_1 is accepted. Furtherly, as explained previously, meta-analyses are also conducted to analyze further the relationship between *F* and *S*, by involving *T*, *B*, and *G* as the moderating variables. For this purpose, the 64 studies are clustered and the meta-analysis is performed on every cluster.

Table 1. Correlation between *F* and *S* based on *T*

j	T_j	K_j	N_j	r_j	σ_{rj}	p
1	≤ 1990	8	26,459	0.525	0.122	0.000
2	1991-2000	21	9,665	0.187	0.202	0.177
3	2001-2010	21	9,926	0.626	0.288	0.015
4	≥ 2011	15	4,202	0.595	0.268	0.013

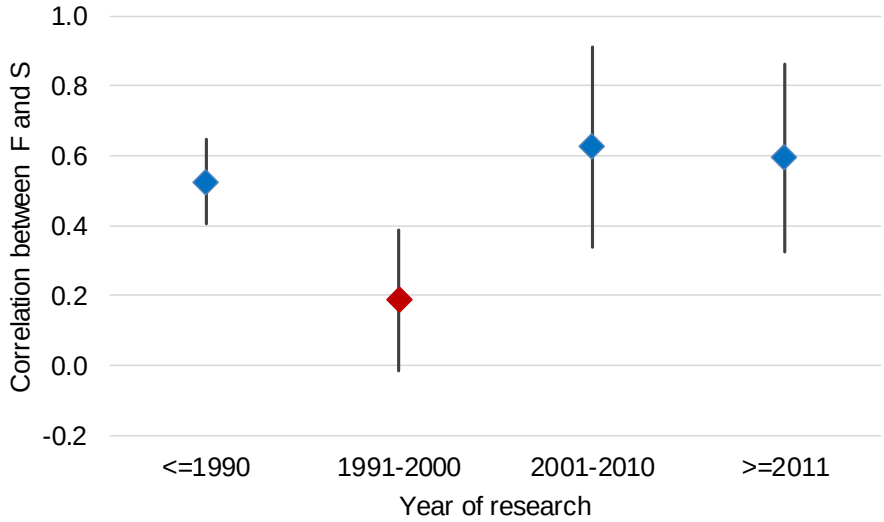

Figure 5. Correlation between *F* and *S* by year of research

Table 2. Correlation between *F* and *S* based on *B*

j	B_j	K_j	N_j	r_j	σ_{rj}	p
1	Manufacturing	15	3,481	0.441	0.308	0.076
2	Services	32	17,018	0.481	0.336	0.076

5.1. Year of Research As Moderating Variable

The influence of moderating variable *T* is evaluated by clustering the 64 studies according to year of research. Every cluster covers 10 years range, start from 1980s, the time when the early researches on customer satisfaction conducted. Thus, the clusters are ≤ 1990, 1991-2000, 2001-2010, and ≥ 2011. The correlations between financial success and customer satisfaction of cluster *j*, r_j, resulted from the meta-analysis are presented in Table 1 altogether with the related number of studies K_j and number samples N_j involved, and the related *p*-value. The profile of the correlation by year of research is illustrated in Figure 5. In general, the correlation between *F* and *S* tend to increase, except during 1991-2000. In this decade, the relationship between *F* and *S* could not be explained. The possible cause of this anomaly is the escalation of the role of information and communication technology. In this time, the usage of internet was accelerated and personal communication facilities like cellular phone and smartphone emerged. Many companies invested much money for technology change and researches using financial measures becomes bias. Except during 1991-2000, it can be concluded that *T* affects the relationship between *F* and *S*, or the H_2 is accepted.

5.2. Business Type As Moderating Variable

The effect of business type is evaluated by clustering the 64 studies based on the business type observed in the studies. The 15 of 64 studies observes manufacturing companies, the other 32 surveys services companies, and the 17 others studies both manufacturing and services companies. The meta-analysis on manufacturing and services cluster provides the results presented in Table 2.

Both clusters cannot explain the relationship between *F* and *S*, as shown by the insignificant correlations ($p > 0.05$). In other words, the business type gives no effect on the relationship between *F* and *S*, and the H_3 is rejected.

Table 3. Correlation between *F* and *S* based on *B*

j	G_j	K_j	N_j	r_j	σ_{rj}	p
1	USA	33	14,960	0.333	0.313	0.144
2	Europe	13	30,297	0.566	0.124	0.000
3	Asia-Africa	18	4,260	0.657	0.309	0.017

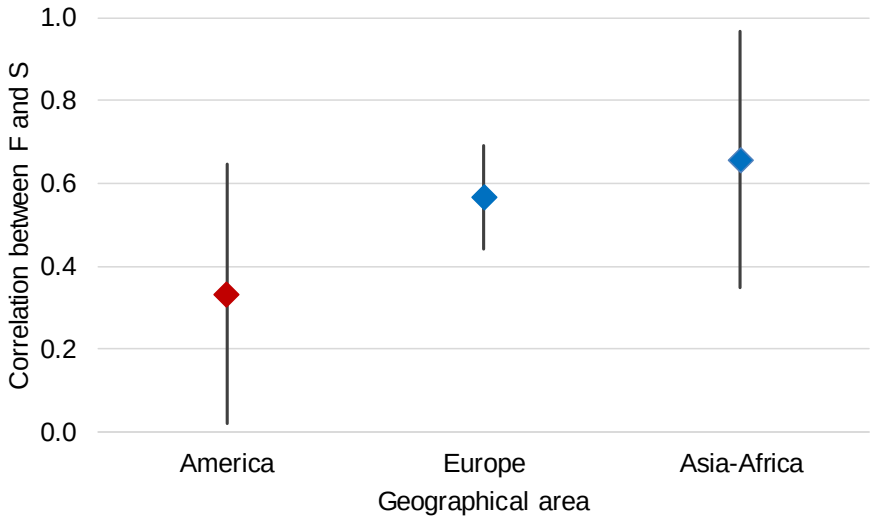

Figure 6. Correlation between *F* and *S* by geographical area of research

5.3. Geographical Area As Moderating Variable

A review about cross-cultural consumer behavior performed by de Mooij & Hofstede (2011) concludes that consumer behavior is influenced by culture. Geographical area is one of some parameters can be used to identify culture difference. Thus, the geographical area, *G*, of research on the relationship between *F* and *S* is suspected to be a moderating variable. To evaluate the influence of *G* to the relationship between *F* and *S*, the 64 studies are clustered into the geographical area of research, i.e. USA, Europe, and Asia-Africa. Table 3 and Figure 6 present the results of the meta-analysis on each cluster.

Table 3 and Figure 6 show that the correlation between customer satisfaction and financial success is highest in Asia-Africa. In Europe, the correlation is also significantly high. However, the correlation cannot be explained in USA. As analyzed by de Mooij & Hofstede (2011), consumers came from society with close social engagement tend to use feels to make a decision about product and buying. Their high social engagement also makes words if mouth take important role in buying behavior. The satisfaction level of some people will communicated to and influence the other people. Thus customer satisfaction will drive the company financial success. This behavior is relevant to Asia-Africa and Europe. USA culture is different from the two regions. People in USA tend to be individualism. Individualist consumers like American make a decision on product and buying by considering and learning many related aspects (de Mooij & Hofstede, 2011). The decision is taken based mostly on rational reasons. Words of mouth has no significant role, and customer satisfaction is not the dominant factors for company success. This results show that the H_4 is accepted.

6. CONCLUSION AND INSIGHTS FOR FURTHER RESEARCH

This review and meta-analysis on the relationship between customer satisfaction brings some insights. First, in general, customer satisfaction is proven to significantly influence the financial success. However, the wide variation of the correlation values among studies means that research on customer satisfaction is still a challenge.

The second insight is related to the role of customer satisfaction. The effect of customer satisfaction on financial success tends to change by year of research. In the future, research on customer satisfaction becomes more interesting related to the industry 4.0 and society 5.0 issues. The trend of customer satisfaction role will provide priceless information for companies' CRM. Related to business type, the difference of the role of customer satisfaction in different industry types cannot be proven in this review. However, it does not mean that there is no difference. A deeper understanding about customer satisfaction in different type of business is still a challenge to learn further. Further, the geographical area, as well as the culture, is proven to be a variable affecting the customer satisfaction role. The

result of meta-analysis indicates that there are so many opportunities and needs to learn about customer satisfaction wherever and whenever, as culture is related to the location and always changed by time. A cross-cultural investigation on the role of customer satisfaction will also being interesting works. The collected customer behavior and other related facts can be used to develop a specific map or dictionary or portfolio, to which companies can refer, to model their CRM and/or marketing policies.

The third insight is about the dependent variable, the financial success. Based on all the aspects of meta-analyses conducted in this review, financial success cannot always be proven to be related to customer satisfaction. In a certain time, during 1991-2000, for example, and in USA region the financial success is not significantly correlated to customer satisfaction. Thus, further studies to explore and evaluate other factors for financial success are also interesting to do. In the disruptive environment towards industry 4.0, in which the relationship and connectivity among industry factors becomes dynamically change, the evaluation of financial success factors becomes a need.

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APPENDIX 1

Table A.1. Studied for meta-analysis

Study	Article	Year of research	Business type	Geographical area
1-2	Pickle & Rungeling (1973)	1968	Miscellaneous	USA
3	Anderson & Sullivan (1993)	1989-1990	Miscellaneous	Sweden
4	Anderson *et al.* (1994)	1989	Miscellaneous	Sweden
5-6	Ittner & Larcker (1998)	1995-1996	Telecommunication	USA
7	Ittner & Larcker (1998)	1995-1996	Finance	USA
8	Ittner & Larcker (1998)	1994	Finance	USA
9	Ittner & Larcker (1998)	1995	Finance	USA
10	Kristensen *et al.* (1999)	1998	Postal service	Denmark
11	Liu & Leach (2001)	2000	Human resource	USA
12	Gruca & Rego (2005)	1994-2002	Miscellaneous	USA
13-14	Gustafsson *et al.* (2005)	2003-2004	Telecommunication	Sweden
15	Mittal *et al*. (2005)	1994-2000	Miscellaneous	USA
16	Keiningham *et al*. (2006)	2000-2001	Trading	USA
17	Jaramillo *et al*. (2007)	2001	Property	USA
18	Jaramillo *et al*. (2007)	1999	Trading	USA
19	Jaramillo *et al*. (2007)	1995	Pharmaceutical	India
20	Jaramillo *et al*. (2007)	1986	Property	USA
21	Jaramillo *et al*. (2007)	1997	Miscellaneous	USA
22	Jaramillo *et al*. (2007)	1982	Trading	USA
23	Jaramillo *et al*. (2007)	1992	Finance	USA
24	Jaramillo *et al*. (2007)	2002	Miscellaneous	USA
25	Jaramillo *et al*. (2007)	1998	Miscellaneous	USA
26	Jaramillo *et al*. (2007)	1999	Miscellaneous	USA
27	Jaramillo *et al*. (2007)	1998	Property	USA
28	Jaramillo *et al*. (2007)	1995	Pharmaceutical	USA
29	Jaramillo *et al*. (2007)	2002	Miscellaneous	USA
30	Jaramillo *et al*. (2007)	1980	Miscellaneous	USA
31	Jaramillo *et al*. (2007)	1980	Miscellaneous	USA
32	Jaramillo *et al*. (2007)	1993	Miscellaneous	USA
33	Jaramillo *et al*. (2007)	1992	Miscellaneous	USA
34	Chang *et al*. (2008)	2006	Wood	Taiwan
35	Rigopoulou *et al*. (2008)	2006	Electronics	Greek
36	Valenzuela *et al*. (2010)	2008	Finance	Chile
37	Cho & Rutherford (2011)	2009	Education	USA
38	Khan & Dost (2011)	2009	Telecommunication	Pakistan
39-40	Liang & Zhang (2011)	2009	Restaurant	Taiwan
41-42	Schwepker & Good (2011)	2009	Trading	USA
43	Khong & Yao (2011)	2009	Finance	Taiwan
44	Alrubaiee (2012)	2010	Finance	Jordan
45	Lin (2012)	2010	Finance	Taiwan
46	Eren *et al*. (2013)	2011	Finance	Turkey
47	Quddus & Hudrasyah (2014)	2012	Delivery	Indonesia
48	Ali *et al*. (2015)	2013	Telecommunication	Pakistan
49-50	Calvo-Porral & Lévy-Mangin (2015)	2013	Telecommunication	Spain
51	Ibojo (2015)	2013	Finance	Niger

Study	Article	Year of research	Business type	Geographical area
52-53	Malshe & Agarwal (2015)	1994-2010	Miscellaneous	USA
54-55	Susanty & Kenny (2015)	2013	Restaurant	Indonesia
56	Akbar & Djatmiko (2016)	2014	E-commerce	Indonesia
57	Khuong & Dai (2016)	2014	Transportation	Vietnam
58	Minh & Huu (2016)	2014	Finance	Vietnam
59	Palit *et al*. (2016)	2014	Restaurant	Indonesia
60	Wahab *et al*. (2016)	2014	Apparel	Malaysia
61-62	García-M. & Rodríguez-R. (2017)	2008	Automotive	Spain
63	Chicu *et al*. (2018)	2015	Call center	Spain
64	Strenitzerová & Gaňa (2018)	2016	Telecommunication	Slovakia

APPENDIX 2

Table A.2. Statistical of information of the studies

Study	Sample size	*F*	*t*	*d*	*r*	Reliability of independent variable	Reliability of dependent variable
1	1,846				0.760		
2	1,846				0.410		
3	22,300				0.436	0.980	
4	77				-0.250		
5	2,491		6.160				
6	2,491		4.920				
7	73		2.350				
8	121		13.680				
9	125		14.230				
10	373			0.490		0.883	
11	169				0.230	0.870	0.760
12	735				0.165		
13	2,715				0.748	0.692	0.766
14	2,715				0.519	0.630	0.766
15	399				0.230		
16	125				-0.256		
17	119				0.310	0.840	0.840
18	294				0.040	0.840	0.840
19	138				0.220	0.810	0.960
20	178				0.020	0.840	0.840
21	402				0.060	0.840	0.840
22	149				-0.060	0.840	0.840
23	254				-0.040	0.880	0.840
24	223				0.070	0.840	0.840
25	126				0.290	0.840	0.840
26	313				0.820	0.840	0.840
27	396				0.170	0.840	0.840
28	180				0.060	0.840	0.840
29	103				0.310	0.840	0.840
30	23				0.460	0.860	0.840
31	40				0.190	0.830	0.840
32	268				-0.160	0.840	0.840
33	271				0.180	0.880	0.890
34	250				0.343		
35	420				0.200	0.809	
36	299				0.710	0.780	0.840
37	165		2.718			0.975	0.975
38	61				0.230	0.519	0.645
39	151				0.870	0.901	0.923
40	477				0.780	0.901	0.923
41	345				0.332	0.870	0.860
42	345				0.671	0.870	0.870
43	31				0.899	0.802	0.823

Study	**Sample size**	***F***	***t***	***d***	***r***	**Reliability of independent variable**	**Reliability of dependent variable**
44	217				0.748	0.931	0.942
45	262		1.560			0.928	0.862
46	745				0.297	0.802	0.869
47	178				0.163	0.696	0.883
48	450				0.780	0.800	0.780
49	236				0.608	0.928	0.656
50	288				0.606	0.916	0.681
51	107	41.173					
52	23				-0.140		
53	23				0.150		
54	135		14.97			0.867	0.867
55	135		17.11			0.858	0.882
56	385				0.718	0.693	0.949
57	288				0.315	0.639	0.826
58	261				0.885	0.923	0.930
59	500			0.580		0.865	0.875
60	234				0.420		
61	84				0.024		
62	84				0.578		
63	109				0.165	1.000	1.000
64	151				0.308		