Investor Reaction to Consumer Sentiment:
The Case of Manufacturing Firms in Indonesia

Soni Hakim[a]*

[a]Master of Management, Faculty of Economics and Business, Universitas Sebelas Maret
*Corresponding author: sonihakim@gmail.com

ARTICLE INFO

ABSTRACT

This study aims to determine the influence of industrial workers concentration on the consumer confidence index and the influence of consumer confidence index on the capital market, especially stock issuers from manufacturing industry sector. The data used in this research is secondary data with the sample of consumer confidence index taken from Jakarta and Surabaya as well as 47 manufacturing industry stock issuers listed in Indonesia Stock Exchange. This research is conducted by using Granger Causality method. The results generally show that there is no influence found for regional consumer confidence index with large manufacturing industry and regional consumer confidence index with relatively small manufacturing industry towards the national consumer confidence index. Research has also managed to find a significant influence of consumer confidence index on the price of stocks issued by several manufacturing companies.

INTRODUCTION

Bank Indonesia (Indonesian Central Bank-BI) conducted a survey to predict the trend of economic growth in Indonesia a few months ahead. BI also conducted a survey to collect information about consumer confidence on current economic conditions and consumer expectations for the next six months. Consumer Confidence Index (CCI) is composed from Current Economic Condition Index and Consumer Expectation Index.

Researches on consumer confidence index show that there are many indicators to predict private consumption. Howrey (2001) find that consumer confidence is a significant predictor for the rate of gross domestic product (GDP) growth in the future and

the possibility of recession. The increase in consumer confidence indicates an increase in purchases made by consumer, thus causing an increase in gross domestic product. While the decline in consumer confidence indicates a decrease in the number of customer spending, this could lead to negative real economic growth and the decline in gross domestic product that can trigger a recession.

CCI is highly influenced by the capital market. Bram & Ludvigson (1998) find that in United States, the improvements in consumer sentiment stimulate consumption growth in the short term. If consumers have high optimism toward economic growth in the next few months, then the manufacturing company in consumer goods sector will respond to the people's optimism with good sales strategies, thus increasing the company's sales. Investors will look at this and invest their money into companies in the consumer goods sector.

Another study from Stephane Dees & Pedro Soares Brinca (2013) shows empirically that there is a relationship between consumer sentiment and expenditure on consumer spending in the United States and Europe. Overall, the results of research conducted by Stephane Dees & Pedro Soares Brinca shows that the index of consumer confidence in certain circumstances can be a good predictor of the number of consumer consumption. In particular, the sample indicates that the contribution of consumer confidence in explaining household consumption expenditure increases when consumer confidence survey of households showing a major change from previous results.

Research on consumer confidence and manufacturing sectors has been conducted by Dunn & Mirzaie (2006). They investigate the relationship between consumer confidence and manufacturing firms by comparing data from three US CCI which are the University of Michigan Consumer Sentiment Index and data from two independent surveyors. The data of CCI they use is the data from states with large concentrations of manufacturing industries (Ohio) in the period of 1996 to 2002. Using Granger causality analysis, Dunn and Mirzaie (2006) find that consumer confidence in the state with a large manufacturing industry boosted the national consumer confidence while consumer confidence in the country with a small concentration of manufacturing industries inhibit the increase of consumer confidence nationwide. Based on the research conducted by Dunn & Mirzaie (2006), therefore, the hypotheses are H1: there is significant influence of CCI in the area with a large manufacturing industry on the National CCI and H2: there is no significant effect of Consumer confidence in areas with relatively small manufacturing industry on the National CCI.

Dunn & Mirzaie (2006) also find that the information of economic activity affect consumer population that is geographically closer to the source quicker than those who geographically further from the source. In addition, some studies have also shown that the process of building opinions is strongly influenced by geographical location. Weatherford (1983), Book and Prysby (1991, 1999), Homer (2003) in (Dunn & Mirzaie, 2006) have found that local information has a greater impact for individuals who are close to the source of information because it is easier to verify. Based on the research by Dunn & Mirzaie (2006), the third hypothesis is H3: there is significant influence of the ratio of industrial labor on CCI.

The CCI is closely influenced by the capital market. The relationship between the stock market and consumer confidence has been studied by Jansena and Nahuisb (2002) by using a sample of 11 European countries during 1986 to 2001. Their study finds that stock returns and changes in sentiment are positively correlated in nine of the eleven

countries assessed during the studied period.

Bram & Ludvigson (1998) find that in the United States, the improvements in consumer sentiment stimulate consumption growth in the short term. If consumers have a high optimism to economic growth in the next few months, then companies in the consumer goods sector will respond to the people's optimism with good sales strategies, thus it will increase the company's sales. Investors will look at this and invest their money into companies in the consumer goods sector. Based on the research by Jansena and Nahuisb (2002) and Bram & Ludvigson (1998), the fourth hypothesis is H4: there is significant influence of capital markets on Consumer Confidence Index

Gibson Paradox provides empirical evidence of the prices tendency and interest rates that move together. If the price rises, interest rates tend to rise, and if price falls then interest rates are likely to go down as well. As prices fall, consumers will feel optimistic about economic stability and increase the consumption.

Iswardono (1999) states that the greater the amount of money in circulation, the lower interest rates that would encourage people to take the money. But the theory of money quantity says that the faster growth of the money supply means the more increasing the prices of goods and services, and the other way around, the decline in the money supply means the lower the prices for goods and services. Based on the research by Gibson Paradox and Iswardono (1999), the fifth hypothesis is H5: there is significant influence of interest rate on CCI.

Research conducted by Shiu-Sheng Chen (2013) on the relationship between the rise and fall of consumer confidence in the capital market fluctuations obtains strong evidence that the lack of consumer confidence has asymmetric effects on stock returns. Shiu-Sheng Chen's research also finds that the decline in consumer confidence has greater impact when the market is in bear market conditions. The greater the pessimism of the market, the higher the probability of the transition, and the prolonged market pessimism will make the market survive the bear market conditions in a long time. When investors predict that the economic situation will weaken in the following months, investors will be afraid that the stock market will fall and their expected benefits will not be achieved. Consequently, investors will flock to sell their shares, and will be causing the stock market to enter the bear market conditions.
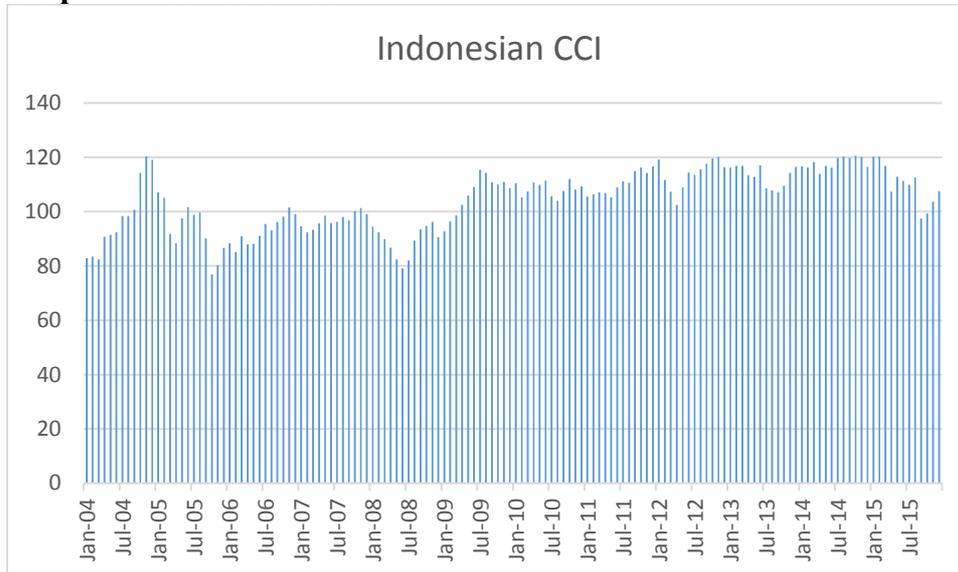
When consumer confidence rises, the stock prices of the manufacturing industry will go up as investors predict an increase in purchases by consumers that will have a positive impact on the performance of the manufacturing industry, and the other way around, when the consumer confidence is down, investors will move their capitals to other sectors because they are pessimistic about the ability of company in the manufacturing industry in achieving their target. Based on Shiu-Sheng Chen (2013) study, the sixth hypothesis is H6: there is significant influence of the consumer confidence index on the issuers' shares of the manufacturing industry.

METHOD

The data in this research are analyzed using Granger casuality analysis performed on Eviews 7. This study uses secondary data, which means that the data are obtained from published reports from competent authorities. The sources of data used in the study are: the website of BI, Orbis, BPS, literature, journals, etc. This study is conducted from January 2004 until December 2015.

The technique used to collect the data is documentation. Documentation is data collection techniques which uses literature, previous research, and published reports to get an overview of the issues to be studied.

Graph 1 Indonesian CCI

Source: Bank Indonesia

The population in this study is the companies in manufacturing industry sector that are listed in Indonesian Stock Exchange, and regions with relatively high concentrations of manufacturing industries. This study uses purposive sampling method to select the samples. The samples used in this study have the following criteria:

a. Criteria for selecting the area
   1. The area is continuously surveyed by BI to prepare the CCI during the study period.
   2. The area has industrial employment ratio data that are continuously available on Badan Pusat Statistik (BPS-Statistics Indonesia) publication.
b. Criteria for selecting the firms
   1. Companies in manufacturing sector that are always listed in Indonesian Stock Exchange during the period of 2004- 2015.
   2. Companies in manufacturing sector whose shares are listed on the main board of Indonesian Stock Exchange.

RESULTS

Table 1 Results of the Granger Causality Test Between Jakarta CCI, Surabaya CCI, and National CCI

Null Hypothesis	Lag					
	1	2	3	4	5	6
	Prob.	Prob.	Prob.	Prob.	Prob.	Prob.
CCI_DKI does not Granger Cause CCI_N	0.6987	0.8396	0.855	0.8849	0.9395	0.9459
CCI_N does not Granger Cause CCI_DKI	0.0106	0.0228	0.0403	0.044	0.0801	0.0209
CCI_SBY does not Granger Cause CCI_N	0.7906	0.8003	0.7142	0.8123	0.7889	0.7318
CCI_N does not Granger Cause CCI_SBY	0.2031	0.2002	0.303	0.6378	0.7492	0.8386

CCI_DKI = Consumer Confidence Index Jakarta
CCI_N = National Consumer Confidence Index
CCI_SBY = Consumer Confidence Index Surabaya

The effect of CCI from the area that has high concentration of manufacturing industry on the National CCI

The test results showed that there is no influence of the CCI in the area with high concentration of manufacturing industries on the National CCI. The smallest P-value obtained from test is 0.7142 at lag 3. This value is still significantly higher than the requirement that the null hypothesis can be rejected, which the P-values should be less than 0.05.

The test results are not consistent with the results of Dunn and Mirzaie's research (2006). Dunn and Mirzaie study find that consumer confidence in the state with a high concentration of manufacturing industry boosted the national consumer confidence. These test results are also inconsistent with the results of Vliegenthart and Hollanders' research (2011) which found that there is correlation between the media and the real economy through consumer confidence.

The test results which are insignificant or the opposite of these expectations may be caused by the lack of information about the conditions and issues that occur in the manufacturing industry, which are published by the local media. Another reason that becomes the cause of the insignificant test results or the opposite of our expectations is the lack of public interest in the information regarding the condition of manufacturing industry in their areas, so that people are less sensitive to changes in economic conditions.

The test results also show that there is no influence of the National CCI on CCI in the area with high concentration of manufacturing industry. This indicates that the National Confidence Index is also unable to drive the movement of the CCI in regions with high concentration of manufacturing industries.

The effect of CCI in area with a low concentration of manufacturing industry on the National Consumer Confidence

The test results show that there is no influence of the CCI in the area with low concentration of manufacturing industry on the National CCI. The smallest P-value obtained from the testing is 0.6987 at lag 1. This value is still significantly higher than the requirement that the null hypothesis can be rejected, which the P-values should be less than 0.05.

The results of this study are consistent with the results of Mirzaie and Dunn's research (2006), which investigated the relationship between consumer confidence and manufacturing industry and find that consumer confidence in a country with low concentration of manufacturing industries inhibits the rise in National Consumer Confidence. The number of workers in the industrial sector in Jakarta area and the ratio of labour in the industrial sector compared to the total employment in Jakarta which is relatively small make the society do not get enough information about the condition of their local manufacturing industries.

The interesting test results appear on the influence of the National CCI on CCI in the area with low concentration of manufacturing industries. The test results indicate that National CCI influence the CCI in Jakarta significantly.

Table 3 **Results of the Granger Causality Test Between the ratio of industrial labor, capital markets, and interest rates on CCI in Jakarta.**

| | Lag | Independent variables | | |
		Ratio of Labor	JCI	BI Rate
National	1	0.01398	0.03273	0.40638
	2	0.65134	0.19206	0.54477
	3	0.14249	0.16176	0.53649
	4	0.22684	1.95643	0.33157
	5	0.10252	1.52689	0.55368
	6	1.07684	1.25296	0.56935
DKI Jakarta	1	0.12432	0.52814	0.09448
	2	0.03778	0.27901	0.22576
	3	0.2142	0.58192	1.12116
	4	0.0225	1.29862	1.76351
	5	0.04317	1.73753	1.77573
	6	0.04496	1.48417	1.84749
Surabaya	1	1.32788	0.45007	0.17998
	2	2.38442	0.40459	0.19806
	3	1.96958	0.67031	0.26832
	4	1.37634	1.7087	0.49353
	5	0.94297	1.3621	0.50296
	6	1.34418	1.13119	0.74903

The effect of the industrial workers ratio on the CCI

The test results show that there is no effect of industrial labour ratio on the CCI. The smallest P-value obtained from the test is 0.1774 with F-Stat 2.06705 in lag 4 on testing the effect of East Java industrial labour force ratio on the CCI in Surabaya. This value is still significantly higher than the requirement that the null hypothesis can be rejected, which the P-values should be less than 0.05.

The results of this study are not consistent with the results of Dunn and Mirzaie's research (2006), which find that there is significant influence of manufacturing employment on CCI in the area with high concentration of manufacturing companies. These inconsistent test results may occur because most of manufacturing industry workers in East Java province are not concentrated in Surabaya so that the CCI cannot

describe the provincial CCI in general. According to the data from the website of East Java industrial information systems, East Java Province has five regions that are not located in Surabaya namely PIER in Pasuruan, MIE in Gresik, NIP in Mojokerto, SIEB in Sidoarjo, and Gresik Industrial Area. Based on these reasons, consumers in Surabaya have less information regarding to the early signals of economic changes as a base for their assessment on the future economic trends.

The results that are consistent with Dunn and Mirzaie' research appeared on the testing of the effect of labour force ratio in Jakarta on the CCI in Jakarta. The ratio of employees in areas with low concentration of manufacturing industry will not experience the direct impact of changes in the economy because economic changes will not be immediately experienced by the population of this community.

The effect of capital markets on the CCI

The results show that there is no influence of the CCI on the capital market. The probability or the smallest P-value obtained from the testing is 0.105 with F-Stat 1.9564 on 4 lag in the testing of the influence of Jakarta Stock Exchange Composite Index (JCI) on National CCI. This value is still significantly higher than the requirement that the null hypothesis can be rejected, which the P-values should be less than 0.05.

The results of this study are not consistent with the results of research in the relationship between stock market and consumer confidence in the 11 European countries in 1986 to 2001 conducted by W. Jos Jansena and Niek J. Nahuisb in 2002. The study conducted by W. Jos Jansena and Niek J. Nahuisb find that stock returns and changes in sentiment are positively correlated in nine of the eleven countries studied.

The results of the study are inconsistent because in Indonesia there are few people who invest in the stock market, so that the Composite Stock Price Index change does not affect the consumer sentiment. Another explanation for this inconsistent result is that the Composite Stock Price Index is too general to see investor response to the changes in consumer sentiment. Investors only responded to specific sectors that are directly related to consumer sentiment such as various industry sectors stocks, basic industry sector, and the consumer goods sector.

The influence of interest rates on CCI

The test results showed that there is no effect of interest rate on CCI. The smallest P-value obtained from the test is 0.0968 with F-Stat 1.8474 on the lag 6 on the effect of interest rates on the CCI in Jakarta. This value is still significantly higher than the requirement that the null hypothesis can be rejected.

The results of this study are not consistent with the Gibson paradox that provides empirical evidence that there is a tendency for prices and interest rates to move together. If the price rises, interest rates tend to rise and if the price falls then interest rates are likely to go down as well. As prices fall, consumers will feel optimistic about economic stability and will increase consumption.

The results of this study can be explained by the quantity theory of money. Iswardono (1999) states that the greater the money supply, the lower interest rates will encourage people to take their money. But the quantity theory of money says that the faster the money supply growth means the higher the prices of goods and services will increase, and the other way around, the lower the money supply means the lower prices for goods and services.

Interesting results are found in CCI influence on interest rates. All three CCI variables affect BI Interest Rates. This result is likely due to the decision of BI Board of Governors who takes CCI as an indicator in determining BI interest rate every month and apply this through the management of liquidity in the money market in order to achieve the operational target of monetary policy on monetary operations conducted by BI.

Table 2 Results of The Granger Causality Test Between Stock Price and CCI

	Lag 1	Lag 2	Lag 3	Lag 4	Lag 5
Basic Industry and Chemicals					
Asiaplast Industries	0.0369	0.0276	0.0846	0.1141	0.2071
Citra Tubindo	0.5338	0.8407	0.2145	0.1192	0.0709
Intikeramik Alamasri	0.4171	0.557	0.5566	0.6395	0.3471
Indocement TP	0.0986	0.2616	0.4346	0.3943	0.1931
Semen Indonesia	0.0045	0.0156	0.0182	0.0066	0.0016
Suparma	0.9852	0.5094	0.6617	0.2111	0.1641
Arwana Citramulia	0.7028	0.7278	0.2972	0.0284	0.0429
Miscellaneous Industry					
Astra International	0.8626	0.7981	0.918	0.5391	0.5145
Gajah Tunggal	0.635	0.4554	0.42	0.246	0.3373
Prima Alloy Steel	0.064	0.1084	0.1221	0.1198	0.304
Indo Kordsa	0.3098	0.735	0.6066	0.3372	0.4284
Ever Shine Tex	0.5744	0.8452	0.8492	0.852	0.8568
Goodyear Indonesia	0.3357	0.2053	0.3166	0.3539	0.2535
Consumer Goods					
Darya-Varia Laboratoria	0.6717	0.9121	0.9817	0.9346	0.9376
Gudang Garam	0.3707	0.7388	0.9036	0.797	0.4029
HM Sampoerna	0.3968	0.3768	0.5434	0.1392	0.0108
Indofarma	0.6846	0.9078	0.691	0.4389	0.4604
Mustika Ratu	0.4878	0.5984	0.7821	0.7037	0.5386
Mayora Indah	0.0728	0.0389	0.0611	0.0239	0.0261
Bentoel Internasional	0.2577	0.0481	0.0679	0.085	0.1386
Mandom Indonesia	0.1615	0.053	0.0818	0.0065	0.003
Tempo Scan Pacific	0.5361	0.6574	0.6207	0.7966	0.855
Voksel Electric	0.0754	0.0726	0.206	0.2735	0.3111
Wilmar Cahaya Indonesia	0.1746	0.2817	0.3993	0.4101	0.5711

The results of the test show that there is significant influence of CCI on some of the manufacturing industry stock price. The test results show that there are seven issuers that are proven to have significant relationship with the CCI. From these issuers, three are from the basic industries and chemicals sector and four are from consumer goods sector. The result of testing for the data from Semen Indonesia shows P-value of <0.05 at any lag. This

proves that there is a significant influence of CCI on the stock price. When consumer confidence rises, the stock prices of the manufacturing industry will go up as investors predict an increase in purchases made by consumers that will have positive impacts on issuers performance from the manufacturing industry, and the other way around, when the consumer confidence is down, investors will move their capital to other sectors because the investors are pessimistic about the ability of issuers from the manufacturing industry in achieving their target.

The test results also show that there is significant influence from some of the stock price of the manufacturing industry towards the CCI. The results of this study are consistent with the findings from Mary Ward Otoo's research (1999) which find that the rise in the stock market boosts consumer confidence. The test results show that there are 18 listed companies that are proved to affect consumer confidence. From the number, five companies are from basic industries and chemicals sectors, six are from miscellaneous industry sectors, and seven are from consumer goods sector.

CONCLUSION

There is no influence found in the relationship betwen CCI from areas with high concentration of manufacturing industry, CCI from areas with low concentration of manufacturing industry, and national CCI. The CCI published by BI only surveys the capital of the province, while the concentration of manufacturing industry in some provinces are spread into several cities so that the published confidence index does not describe the sentiment in the whole province.

Changes in the ratio of industrial workers also have no influence on the CCI. The ratio of industrial labour does not affect the CCI. This may occur because the industrial workers data published by BPS is the ratio of provincial labour, while industrial area in East Java does not concentrated in Surabaya only, so that the CCI from Surabaya cannot describe the CCI in East Java generally. According to the data from the website of East Java industrial information systems, East Java Province has five regions that are not located in Surabaya namely PIER in Pasuruan, MIE in at Gresik, NIP in Mojokerto, SIEB in Sidoarjo, and Gresik Industrial Area. Based on these reasons, consumers in Surabaya have less information about early signals of economic changes on which to base their assessment of the future economic trends.

Fluctuations in the stock market have no effect on the CCI. This result may be caused by the low number of local investors in the Indonesian capital market, so when the fluctuation happens in the capital market, only a few people experience the direct impact or even have enough information about the condition. The reason why there is no influence found in the relationship betwen capital markets and CCI can also be caused by the fact that Composite Stock Price Index is too general to see investor response towards the changes in consumer sentiment. Changes in consumer sentiment are only responded by investors on specific sectors in which stocks are directly related such as miscellaneous sectors, basic and chemicals industry, and the consumer goods sector.

The fluctuation in BI interest rates does not affect the CCI. The absence of relationship between BI interest rates on CCI can be explained by the money quantity theory. The money quantity theory says that the faster the growth of money supply means the higher the prices of goods and services, and the other way around, the lower the money supply means the lower the prices for goods and services.

There is significant influence of the consumer confidence on the stock price of several manufacturing firms. When consumer confidence rises, the stock prices of the manufacturing industry will go up as investors predict an increase in purchases made by consumers that will have a positive impact on the performance of the firm, and the other way around, when the consumer confidence is down, investors will move their capital to other sectors because they are pessimistic about the ability of firm in manufacturing industry in achieving their target.

The results of this study find that the significant effect of CCI on manufacturing sector stock price is partially confirmed. When consumer confidence rises, the stock prices of the firms in manufacturing industry will go up, and vice versa, when the consumer confidence is down, the share prices of the firms in manufacturing industry will go down.

Based on these results, company can determine appropriate strategy whether they will issue the new shares or repurchase shares. When their CCI rises, company can issue stock because it will get substantial capital from the issuance of these shares, whereas when the CCI falls, the company should repurchase their shares back because the stock has low value and then they will conduct right issue to the stocks when the price has gone up.

REFERENCES

Bram, Jason, and Sydney Ludvigson. 1997. Does Consumer Confidence Forecast Household Expenditure? A Sentiment Index Horse Race. *Federal Reserve Bank of New York Research Paper*. 9708.

Chen, Shiu-Sheng. 2011. Lack Of Consumer Confidence And Stock Returns. *Journal of Empirical Finance.* 18: 225–236.

Dees, Stephane, and Pedro Soares Brinca. 2013. Consumer Confidence As A Predictor Of Consumption Spending: Evidence For The United States And The Euro Area. *International Economics*. 134: 1-14.

Dominic H. 2008. Berinvestasi di Bursa Saham. Jakarta: Elex Media Koputindo.

Dunn, Lucia F., and Ida A. Mirzaie. 2006. Turns in Consumer Confidence: An Information Advantage Linked to Manufacturing. *Economic Inquiry*. 44(2): 343-351.

Hollanders, David, and Rens Vliegenthart. 2011. The influence of negative newspaper coverage on consumer confidence: *The Dutch case. Journal of Economic Psychology*. 32: 367–373.

Howrey, E. Philip. 2001. The Predictive Power of the Index of Consumer Sentiment. *Brookings Papers on Economic Activity*. 1: 175–216.

Iswardono. 1999. Uang dan Bank. Yogyakarta: BPFE-Yogyakarta.

Jansen, W. Jos., and Niek J. Nahuis. 2002. The Stock Market and Consumer Confidence: European Evidence. *Economics Letters.* 79 (1): 89-98.

Mankiw, N. Greorgy. 2007. *Makroekonomi*. Jakarta: Erlangga.

Otto, M. W. 1999. Consumer Sentiment and the Stock Market. *Federal Reserve Board Paper*. November.

Sekaran, Uma, and Roger Bougie. 2013. *Research Methods for Business: A Skill-Building Approach. Sixth Edition*. United Kingdom: John Wiley & Sons Ltd.