“The impact of demonetization on Indian firms’ performance: does company’s age make a difference?”

AUTHORS	Waleed M. Al-ahdal Najib H.S. Farhan Mosab I. Tabash https://orcid.org/0000-0003-3688-7224 T. Prusty

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Waleed M. Al-ahdal (India), **Najib H.S. Farhan** (India), **Mosab I. Tabash** (UAE), **T. Prusty** (India)

THE IMPACT OF DEMONETIZATION ON INDIAN FIRMS' PERFORMANCE: DOES COMPANY'S AGE MAKE A DIFFERENCE?

Abstract

The main aim of this paper is to evaluate the impact of demonetization on Indian firm's quarterly financial performance before and after demonetization period (March-December, 2017), and to find out if companies' age helps to face financial disruption. Four variables, which are net sales, total income, net profit after tax, and earnings per share, were taken as proxies for analyzing the quarterly financial performance of 2,892 companies listed on Bombay Stock Exchange (BSE), National Stock Exchange (NSE), and Calcutta Stock Exchange (CSE). Nonparametric test, particularly Wilcoxon Matched-Pairs Signed Rank Test and Kruskal-Wallis one-way analysis of variance, were applied in analyzing the data. Results reveal that there is a statistically significant difference between the financial performance before and after demonetization at 5% level of significance. It was also found that the decrease/increase in the financial performance of all the firms was affected by the demonetization process, irrespective of their ages. The findings could be useful for financial managers and financial consultants, as they would be able to focus on the issues that matter most at the time of financial disruption.

Keywords Demonetization, financial performance, companies' ages, Wilcoxon test, Kruskal test, India

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Waleed M. Al-ahdal, Research scholar, Faculty of Commerce, Banaras Hindu University, India.

Najib H.S. Farhan, Research Scholar, Faculty of commerce, Aligarh Muslim University, India.

Mosab I. Tabash, Assistant Professor, College of Business, Al Ain University of Science and Technology, UAE.

T. Prusty, Associate Professor, Faculty of Commerce, Banaras Hindu University, India.

INTRODUCTION

Demonetization is a major monetary policy decision, which has an impact on businesses and the economy as a whole. On November 8, 2016, the Indian Government surprised everyone in the society by the declaration of demonetizing 86% of the currency notes, as it had happened earlier in the Indian economic history (Midthanpally, 2017; Misra & Parth, 2017). Four official reasons were behind the demonetization: to circumscribe corruption; curb the funding for anti-social elements like terrorist activities, contraband, espionage; take care of the menace of tax evasion and black money; and push towards digitalization in the economy (Chandrasekhar & Ghosh, 2018; Gupta et al., 2017; Singh & Singh, 2016). It is known that particular decision wasn't such a fast-overnight decision taken by the government of India in reaction to a crisis, but it was wisely planned, more or less secretly, over some time. It also appears to have been kept as a secret; at least to the wider public, until the very last moment (Alahdal et al., 2016; Midthanpa lly, 2017). That's had led the Indian people to face a lot of problems regarding exchanging their money from the old notes to the new ones. Holders of the old notes were allowed to deposit them at banks and post offices until December 30, 2016, with certain restrictions. For instance, they faced substantial penalties unless they were able to explain where the money came from and whether it was already taxed (Dharmapala & Khanna, 2018).

The sudden nature of the announcement and the shortage of cash in the weeks that followed the cashless economy policy had created a remarkable disruption throughout the market and also had threatened the money output, as withdrawal from ATMs was limited to only INR 2,000 per day and these limits were gradually lifted up on February 1, 2017. There were also limits regarding withdrawal from bank branches, at the beginning, it was limited to only INR 4,000 per day and INR 20,000 is the maximum withdrawal in a week. All those limits, which were imposed by the Indian authorities regarding money withdrawal, were lifted up altogether on March 13, 2017 (Dharmapala & Khanna, 2018). Demonetization pushed a large segment of the Indian citizens to access and use digital payment system-providers like e-wallets and banking tools, such as credit cards, debit cards, etc. (Ajwani-Ramchandani, 2017).

Since the announcement of demonetization by the Government of India, many scholars typically highlighted and worked on this subject. For instance, Sivathanu (2018) investigated the actual usage of digital payment systems by the consumers during the demonetization period (from November 9, 2016 to December 30, 2016) in India. Ohlan (2017) addressed whether India's demonetization has a significant impact on the number of the international tourists visiting India during the time of the process. However, Kumar and Bumra (2017) noted that the sudden announcement created a disruption and cash crunch in the market where every sector was affected. Moreover, Midthanpally (2017) found that majority of the Indian people agreed that the demonetization will help fighting corruption and push the economy towards digitalization. Likewise, Singh et al. (2017) showed that a large number of people in India were happy with this policy. During the first days, the expectation was negative, as the common people had to suffer many difficulties. But after the new banknotes were available, the overall attitude of the people became positive.

The financial performance is considered the first step to be evaluated by investors around the globe, as the world became smaller in the sense that businesses can be done anywhere (Ali et al., 2017; Al- Matari et al., 2014). The performance management process is the process by which a company manages its performance with the help of its corporate and functional strategies and objectives (Bititci et al., 1997). The process of improvement is required to identify the level to which using of organizational resources could impact business performance (Madu et al., 1996; Santos et al., 2018; Sharma & Gadenne, 2002). The measurement of performance provides a significant feedback to allow management to monitor the performance; progress; motivation, communication, and diagnose problems (Neely et al., 1999).

Market-wide studies of financial performance changes around demonetization do not seem to exist for India or even other countries; especially not once age is included as a factor. So this paper potentially can fill a gap. Thus, this study has two objectives: the first one is to find out the impact of demonization on financial performance of the Indian firms, and the second is to examine whether companies' age matters in the process or not. The paper is divided into 5 parts as follows: the introduction, the literature review and hypotheses, research methodology, results and analysis, and conclusion.

1. LITERATURE REVIEW AND HYPOTHESES

1.1. Demonetization

Demonetization is a process of making all or some of the current currency notes out of use and replacing them with new ones. Demonetization has taken place in many countries around the globe like Zimbabwe, Soviet Union, Myanmar, Nigeria, Zaire, Pakistan, Australia, Ghana, and North Korea. Yameen and Farhan (2018) attempted to study the impact of financial disruption on firm's performance during the demonetization period. The study found that financial disruption that took place during the demonetization period has no impact on firm's performance. Furthermore, Banerjee and Sayyed (2017) have studied the impact of demonetization on consumer's behavior in purchasing items and consumer's mode of payment through on-

line shopping post demonetization. Their results show that demonetization has affected the e-commerce industry. Also, demonetization forced consumers to buy products through online instead of retail shops. Besides, Prabhu et al. (2017) have studied demonetization and its influence on banks operations. They found that the banking sector was significantly affected by demonetization, as banks are channels for legal tender of money to all the needs of the society. Thus, the most significant beneficiaries of demonetization are banks. It made banks accept deposits without any cost of promotion and drastically increased their liquidity position. Moreover, Dharmapala and Khanna (2018) calculated firm's abnormal return on Indian stock market during the demonetization period that calculated return was then compared with patterns of different subsamples abnormal returns that were defined by ownership structure, industry, and other characteristics. The study found that state-owned enterprises and banks have substantial positive returns. It was also found that industries have a pattern of higher returns, which are characterized by greater dependency on external finance. Furthermore, Midthanpally (2017), Singh et al. (2017) found that most Indian people supported the demonetization policy implemented by the Indian government and they agreed that the plan will help to curb corruption and push towards digitalizing the economy.

There are some studies that are conducted in different countries to assess the impact of cashless economy on different aspects. Mieseigha and Ogbodo (2013), Odior and Banuso (1857) have studied the benefits and challenges of the cashless economy in Nigeria. They agreed that the cashless economy has a positive impact on the economic development. Likewise, Nyoni and Bonga (2017) who studied mainly the important implications of a cashless economy in Zimbabwe. They made some policy recommendations that are envisaged to improve the operation of the cashless economy in Zimbabwe. Moreover, Isik and Hassan (2003) have measured the efficiency and productivity of the Turkish banking sector between 1992 and 1996. Their findings revealed that there was a substantial productivity loss (17%) in 1994, which was attributable to technical regress (10%) rather than efficiency decrease (7%). Their study also explored the relationship between bank size, productivity, and crisis. It showed that all banks with different sizes were dramatically affected by the crisis, but small banks were affected more.

In another context, Bayero (2015) studied the impact of the cashless economy on financial inclusion in Nigeria. The study showed that awareness, consumer/user value proposition, and infrastructure have a strong significant relationship with financial inclusion, while the business model of financial service providers did not show any significant link with financial inclusion. Furthermore, Matthew and Anyanwaokoro (2016) compared bank performance under the cash based period versus the cashless period. Data were fetched from the annual reports of selected banks in Nigeria for 6 years, i.e. from 2009 to 2014, which is divided into two periods: 2009–2011 (before the cashless policy) and 2012–2014 (after the adoption of the cashless policy). Findings of the study indicated that a shift towards cashless policy will reduce the high operational cost incurred and help in minimizing the risks associated with the use of physical cash, as well as financial losses in fire outbreaks.

Some researchers (e.g., Adu, 2016; Matthew & Anyanwaokoro, 2016; Muhibudeen & Haladu, 2015; Okoye & Ezejiofor, 2013; Omotunde et al., 2013) argued that the cashless policy offered immense benefits to the economy, the banking sector, the development of payment system, and the reduction of cash related robbery, thereby reducing risk of carrying cash and attracting more foreign investors to come into the country. But prior studies conducted in India and some other countries have not yet investigated the impact of demonetization process on financial performance of firms, particularly the Indian ones. Based on the above studies, the study formulated the following hypotheses:

H0: The population medians (for a particular variable) pre- and post-demonetization are similar.

H1: The population medians (for a particular variable) pre- and post-demonetization are different.

1.2. Firms' age

From empirical studies, firm size is commonly used as one of its important and fundamental characteristics. Company age refers to the number of years the company has been working. Usually, elder firms are bigger than the new ones in term of size, as they have historic record of growth. There are three facts that cannot be ignored when talking about firm's age. Firstly, younger and small firms usually pay fewer dividends to their shareholders in comparison to the elder ones; they take more debt and have more investment. Secondly, Tobin's q value for small companies is higher. Thirdly, small firm's investment is more sensitive to cash flows (Cooly & Quadrini, 2018). Some studies have proved that company's age is one of the profitability determinants (Bertrand & Mullainathan, 2003; Loderer & Waelchli, 2010). However, Liu (2017) has drawn on firm experience (age) to explain this question by using Chinese firm-level data for the period 1998–2007 to examine whether younger firms learn more from exporting than older firms. He showed a significant learning by exporting effects for older firms, especially those engaging in R&D activities, having a large-scale production, and under a private ownership. But he found insignificant or rather limited effects for young firms regardless of their R&D status and firm size. Furthermore, Kim (2016) examined the motives behind firm's credit in Korea. 14,660 firm-year observations data were collected for the period from 1992 to 2011. Results showed that firm's age is positively correlated with accounts payable levels, as it allowed firms to extend the payables. Cooly and Quadrini (2018) attempted to find out whether dynamics of a firm has a relationship with its age, the study showed that firm's dynamics have a negative association with its age.

Table 1. Summary of empirical studies on demonetization – performance nexus

Source: Created by authors.

Author name	Year	Country	Methodology	Major finding(s)
Shaikh and Deshpande	2018	India	Review article	Demonetization of old currency notes had some positive impact on reducing the cash flow to terror organizations, dismantling of counterfeit currency infrastructure, better income tax, and indirect taxation, boost to the digital economy.
Banerjee and Sayyed	2017	India	Percentage of respondents aware of online shopping	It found that demonetization has impacted the e-commerce industry. Due to demonetization, consumers are buying more products through online channel instead of retail shops.
Singh et al.	2017	India	Scoring method	There is a positive sentiment among Indian people regarding demonetization policy, which was implemented by the Indian government.
Midthanpally	2017	India	Descriptive statistics	He found that the majority agreed that the cashless policy will help fight corruption and push towards digitalizing the economy.
Ohlan	2017	India	Break-point unit root tests	He found that the series of tourist arrivals to India is stationary and the impact of shocks is neutral. In addition, no significant structural break in tourist arrivals to India is associated with the sudden demonetization.
Matthew and Anyanwaokoro	2016	Nigeria	Paired samples test	While some benefits associated with cashless policy, which include reduced cash handling cost, reduced the risk of cash related crimes, reduced revenue leakages and increased convenience, still, some challenges were found, which include the prevalence of e-fraud, infrastructural deficits, and erratic power supply.
Bayero	2015	Nigeria	Descriptive statistics and regression	Financial inclusion has strong significant relationship with awareness, infrastructure, and consumer, but there is no significant relationship with business model of financial service providers.
Muhibudeen and Haladu	2015	Nigeria	Descriptive regression and ANOVA	Cashless policy tools do not affect currency circulation outside Nigerian banks. Also, the cashless policy will reduce the high operational cost incurred and help in minimizing the risks associated with the use of physical cash, as well as the financial losses in fire outbreaks.
Omotunde et al.	2013	Nigeria	Descriptive statistics and regression	The cashless policy may curb cash related corruption, reduce cash related robbery, therefore, decrease the risk of carrying cash, attract more foreign investors, and increase employment.
Mieseigha and Ogbodo	2013	Nigeria	Chi-square and ANOVA	Positive impact and significant relationship were found between cashless economy and economy development, on the one hand, and accountability, transparency, and reduction cash-related fraud, on the other hand.
Okoye and Ezejiofor	2013	Nigeria	ANOVA and Chi-square	Cyber fraud and illiteracy are major problems that may hamper the implementation of the policy. The policy will help fight money laundering, corruption, and reduce the risk of carrying cash.

Mateev et al. (2013), in their study, investigated the impact of firm's characteristics on capital structure, using a panel data of 3,175 firms for the period 2001–2005. Their findings demonstrated that the older firms that have sufficient internal funds used less external funds. Afrifa (2013) found a positive link between the firm's age and the firm's financial performance, and they are consistent with the market learning theory. He also found that older firms are less risky than younger firms. Therefore, the following hypotheses are formulated:

H0: Elder companies performed financially the same way like the younger ones during the demonetization period.

H1: Elder companies performed financially better than the younger ones during the demonetization period.

2. RESEARCH METHODOLOGY

2.1. Data collection and study methodology

The financial data for the current study have been extracted from Prowess Q database (the largest database focusing on the Indian companies' financial performance). There are 6,930 companies listed on BSE, NSE, and SCE. The final sample of this study consists of 2,892 companies. The other companies were excluded from the sample because of any of the following reasons:

- non-availability of quarterly data for the required period from June 2016 to March 2017;
- presence of missing values, as any company that had a single missing value, which was excluded from maintaining the reliability of the results.

This study was conducted by dividing the study period into two periods. The pre-demonetization period (from June to September 2016) and the post-demonetization period (from December to March 2017). Financial variables, such as net sales, total income from continuing operations, net profit/(loss) for the period from continuing operations (after tax), and earnings per share before extraordinary item, were adopted for measuring the firm's financial performance during the both periods. This approach of periodical event analysis has been used by a number of researchers like Kesimli and Gunay (2011) who studied the effect of the global financial crisis on working capital, Al-Malkawi and Pillai (2013) who evaluated the impact of financial crisis on UAE real estate and the construction sector. Financial ratios seem to be the most common measures for evaluating the companies' performance because of its beneficial use in decision-making (Ketz et al., 1990; Needles et al., 2010). Quarterly financial data have been evaluated for the purpose of this study, 4 variables are taken for testing the financial status pre- and post-demonetization.

For getting an appropriate inference regarding the impact of demonetization on the Indian firm's performance and checking whether the company's age makes any difference based on the study samples, formal statistical tests were applied. Firstly, Wilcoxon matched-pairs signed test was performed to find out whether the financial variables differ in the two periods (pre- and post-demonetization). This test enables the study to find out whether the decrease/increase in the financial performance (post-demonetization as compared to pre-demonetization period) is significant or not. Wilcoxon test is a non-parametric test, it is the alternative to paired *t*-test. Secondly, Kruskal-Wallis test was performed to check if the company's age helps at the time of disruption or crisis. For this purpose, the sample was divided into three groups, companies established before 1987, between 1987 and 1993, and after 1993, to see if the decrease/increase financial performance (post-demonetization as compared to pre-demonetization) among the three groups is significant.

This test also is one of the non-parametric tests; it is equivalent to the parametric test one-way ANOVA. The advantage of these tests is that the assumption of normal distribution is not required. If the data are not normally distributed, then, *t*-test would not be appropriate to perform (Davis & Pecar, 2010). Thus, it is more suitable to perform non-parametric tests instead of parametric tests. The results produced form Wilcoxon and Kruskal-Wallis tests will be discussed in the next section.

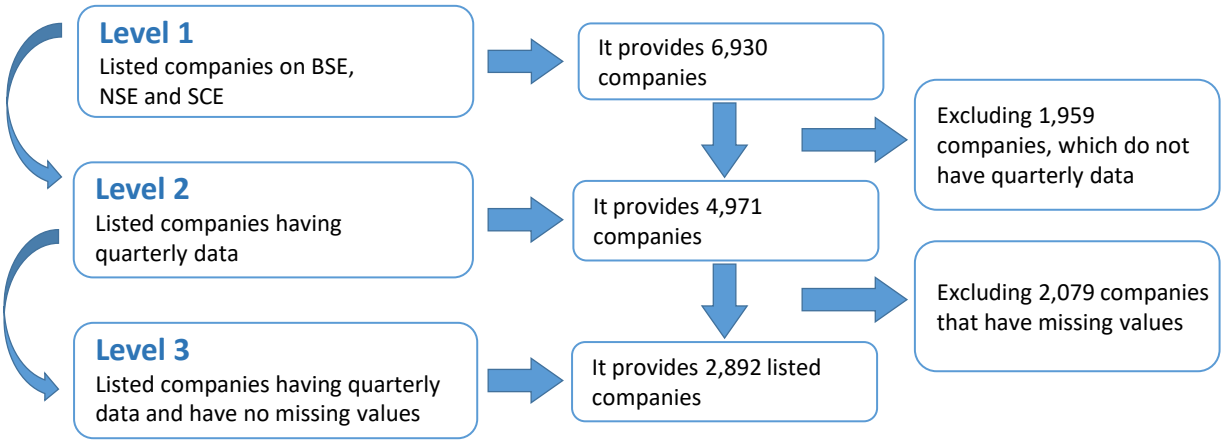

Figure 1. Summary of study selection process

2.2. Sample selection

Figure 1 illustrates the required steps for reaching to the final sample. Initially, the data for the large sample were downloaded. The target Sample of the study consists of 6,930 companies, which are listed in BSE, NSE, and CSE. After that, 1,959 companies were excluded, because it was found that they do not have quarterly data for the study period and 2,079 companies were dropped out from the sample because of missing some required values. Therefore, 2,892 companies that met the criteria were selected for the study.

2.3. Variables' description

The present study used four different financial ratios to analyze the overall performance of the Indian listed companies before and after demonetization as shown in Table 2.

2.4. Indian quarterly GDP

Indian economic growth experienced a slowdown in the fourth quarter (March 2017) due to the impact of demonetization on the key sectors, such as financial services sector and construction sector (Demonetization pulls, Jun 10, 2017).

Table 2. Variables' definition

Variable name	Definition	Used in the existing studies
Net sales	It refers to the number of sales generated by a company after deducting returns, allowances, and any allowed discounts.	Gupta et al. (2017), Joshi and Ghosh (2012), Wire (2015)
Total income from operations	It is the total money received by a firm that includes revenues from services, income from sales, and other sources. The total income is computed for assessing taxes and evaluating the net worth of a firm.	Gupta et al. (2017)
Net profit (after tax)	It is one of the profit measures that excludes the costs and tax benefits of debt. It gives an accurate image of the operating efficiency for the leveraged companies. It is calculated as follows: Operating Income x (1 Tax Rate)	Gupta et al. (2017), Joshi and Ghosh (2012), Wire (2015)
Earnings per share	It is the result of dividing the net profit or (loss) attributable to equity Share-holders by the weighted average number of equity shares outstanding.	Al Manaseer, Al-Hindawi, Al-Dahiyat, and Sartawi (2012), Junarsin (2011), Lin, Liao, and Chang (2011), Tsegba and Ezi-herbert (2011)

Table 3 shows that the GDP before demonetization were higher than the GDP after demonetization. This is also one of the factors that affect firm's performance.

Table 3. Actual quarterly GDP

Source: Investing.com (Jan 07, 2018).

Quarters	Actual quarterly GDP before demonetization	Actual quarterly GDP after demonetization
March 28, 2017 (Q4)	7.00%	6.40%
Dec 30, 2016 (Q3)	7.30%	7.50%
Cep 31, 2016 (Q2)	7.10%	7.60%
Jun 31, 2016 (Q1)	7.90%	7.50%
March 08, 2016 (Q4)	7.30%	7.30%
Dec 30, 2015 (Q3)	7.40%	7.30%
Sep 31, 2015 (Q2)	7.00%	7.40%
Jun 29, 2015 (Q1)	7.50%	7.30%

3. RESULTS AND DISCUSSION

Measuring the performance of a firm offers significant valuable information, which allows managers to oversee the performance, increase motivation, communication and identify problems, and report the progress (Waggoner, Neely, & Kennerley, 1999).

3.1. Descriptive statistics

Table 4 reports the descriptive statistics of financial performance of the Indian firms covered by the current study.

The results in Table 4 show that the mean and median of net sales before demonetization were 4562.69 and 290.85, while in the of post-demonetization, period were 4940.80 and 305.20, respectively. The study further demonstrates that mean and median of total income in the pre-demonetization period were 4841.83 and 311.20, whereas they were 5313.55 and 328.55 in the post-demonetization period. Net profit is one of the most important measures in the finance literature; it plays a considerable role in ratio and financial performance analysis. Net profit of the sample reported a significant decline from 5.70 in the pre-demonetization period to 5.20 in the post-demonetization period. Furthermore, the mean and median of EPS before demonetization are 2.52 and .42, which declined after the demonetization to 2.32 and 0.40.

3.2. Wilcoxon test

Profitability indices refer to those measures that evaluate the performance and efficiency of a company for a particular period of time. Financial measures show the ability of a firm to obtain a logical return on its assets, sales, and capital invested. The results in Table 5 demonstrate Wilcoxon test for the difference in the financial performance in the pre- and post-demonetization period. Paired sample *t*-test looks at the differences between the means, while Wilcoxon test looks at the differences between the medians.

Table 4. Descriptive statistics

Variable	Pre-demonetization period			Post-demonetization period		
	Mean	Median	SD	Mean	Median	SD
Net sales	4562.69	290.85	27287.15	4940.80	305.20	30958.07
Total income	4841.83	311.20	28637.48	5313.55	328.55	32678.37
Net profit (after tax)	365.09	5.70	3085.87	316.54	5.20	4425.07
Earnings per share	2.52	.42	30.68	2.32	.40	22.77

Table 5. Wilcoxon test

Source: SPSS output.

Variable	Rank				Significance level, Sig
	Negative	Positive	Ties	Total	
Net sales	2422g	3274h	88i	5784	.000
Total income	2398j	3320k	66l	5784	.000
Net profit (after tax)	2961d	2711e	112f	5784	.016
Earnings per share	2940a	2714b	130c	5784	.001

Note: a. Earnings per share post < Earnings per share pre. b. Earnings per share post > Earnings per share pre. c. Earnings per share post = Earnings per share pre. d. Net profit after tax post < Net profit after tax pre. e. Net profit (after tax) post > Net profit (after tax) pre. f. Net profit (after tax) post = Net profit (after tax) pre. g. Net sales post < Net sales pre. h. Net sales post > Net sales pre. i. Net sales post = Net sales pre. j. Total income post < Total income pre. k. Total income post > Total income pre. l. Total income post = Total income pre.

3.2.1. Net sales

It refers to the volume of sales generated by a firm after deducting the returns, allowances that are being given to customers. Net sales represent the company's size, as the company's size has implications on the purchasing and selling power. Is there any change in the volume of sales in the post-demonetization period from that of the pre-demonetization?

The results in Table 5 show that 2,422 cases have a negative difference, 3,274 cases have a positive difference, and 88 cases have no difference in their sale volume pre- and post-demonetization. *P*-value indicates that there is a significant difference between net sales pre- and post-demonetization at 5% level of significance (p-value = 0.00). This means that the medians of net sales pre and post are not the same. The increase in the sale post demonetization over the sales in the pre-demonetization period might be attributed to credit sales, as the post-demonetization period witnessed a severe cash shortage and tight restriction over money transformations that force the companies to sell its goods and services in credit.

When sales volume declines, a company must look at the reasons behind that and make a strategy to increase the sales, as it is the main source of income. The increase in net sales during disruption period indicates that the company management planned and managed the crisis successfully, whereas the decrease in net sales volume means that the company was affected by the disruption.

3.2.2. Total income

The total income is generated by a continuing operation, which is the accumulation of net sales, the other income, and the extra-ordinary income (excluding discontinuing income) of the company during a particular quarter. It is used to calculate earnings per share with the help of a number of shares outstanding (Alvi & Ikram, 2015).

In Table 5, the results show that 2,398 cases have a negative difference, 3,320 cases have a positive difference, and only 66 cases have no difference in their total income. Out of 5,784 cases, only 66 cases have no significant difference between their total income pre and post demonetization, while the remaining 5,718 cases have a difference in their total income. This difference is statistically significant (p-value is 0.000) at 5% level of significance. This indicates that the median total income in the pre-demonetization period is not similar to the one post demonetization. Total income/net income is used by investors to analyze the performance of the management. It measures the profitability of one share, which reflects the management's efficiency and effectiveness (Alvi & Ikram, 2015). A drop in the total income during disruption period means reduction in the earnings per share, and this decline indicates that the management was not effective enough during the disruption period. An increase in total income during disruption period means that the company managed the period very well, which prevented it from being negatively affected.

3.2.3. Net profit (after tax)

It refers to the amount of money that a company earns after the deduction of all the taxes. It shows how competent a firm is in converting its revenue into profits. Table 5 shows that there is a difference between net profit after tax pre and post demonetization and that difference is significant (p-value = 0.016) which is less than 0.05. This indicates that the median of net profit after tax pre and post demonetization period are not the same. This suggests that the average post demonetization net profit after tax declined from 365.09 to 316.54 Rs. million. It means that the companies had losses, despite of their good sales performance. That could be due to the inability of paying back the debt to their suppliers and at the same time, their inability of collecting the debts from their customers. Net profit after tax is used for determining how much a company really earns. In general, the decline in net profit after tax means that the company was negatively affected by the financial disruption, and it needed to control its costs. If there is no change in the net profit after tax, which indicates that the firm was not affected by the demonetization.

3.2.4. Earnings per share (EPS)

Earning per share is one of the performance measures, which can be calculated by net income di-

Table 6. Kruskal-Wallis test

Variable	Group 1			Group 2			Group 3			Kruskal-Wallis	
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Chi-square	Sig.
Net sales	–656.44	–3.15	5607.6	–497.13	–2.90	5736.30	–131.68	–2.45	2032.17	1.103	.576
Total income	–834.22	–8.05	5097.24	–619.86	–3.75	6920.56	–161.17	–3.45	2730.33	2.003	.367
Net profit (after tax)	87.3	.75	1693.58	–46.27	.200	3379.51	183.33	.100	4138.91	1.927	.382
Earnings per share	.53	.015	41.19	.13	.010	32.72	.21	.010	5.79	.673	.714

vided by the number of shares outstanding in the quarter. Sinha (2009) believed that as long as a number of users cannot access the company's records, earnings per share can be used as a single index for the company's performance. This ratio also helps us in calculating the price earnings ratio, which reveals demand and growth of business' stocks. EPS helps policy makers to take an appropriate investment decision.

It is clear from Table 5 that the difference between EPS in the pre- and post-demonetization period is significant at 0.05 level of significance with *p*-value = 0.001. This indicates that the profit from a share decreased after demonetization. That shows a downward decline in the company's performance after demonetization.

A frequent drop in company's earnings per share pushes the stock price of a company to decline, which, in turn, affects the company's credibility and accountability. Singhvi and Bodhanwala (2006) advocated that earnings per share are a good representation of the company's earning ability. The repeated drop in EPS may give a signal to the investors to change their investments to another industry. The constant decline in EPS means that the company is affected negatively by the disruption and demonetization, and it did not get the required profit and vice versa.

3.3. Kruskal-Wallis test

For performing this test, the study sample was divided into three groups according to their foundation year: group 1 consists of companies founded before 1987, group 2 consists of companies established between 1987 and 1993, and group 3 consists of companies established after 1993. This classification of the three groups of companies is to examine whether the decrease/increase in the financial performance (post-demonetization as compared to pre-demonetization period) is statistically significant among the three groups or not. Barclay, Marx, and Smith (2003) argued that old and large companies might have more assets in comparison to young and small ones, and that the old firms tend to have stable cash flow, while Kim (2016) believed that the larger and older firms are able to extend their accounts payables level, which gives them the advantage over small firms, as they would not pay additional interests, which results in boosting the financial performance.

It is clear from Table 6 that the decrease/increase in the financial performance measured by earnings per share, net profit (after tax), net sales, and total income is statistically insignificant (p-value >0.05) at all levels of significance, which leads us to accept the null hypothesis, which states that elder companies performed financially same like the younger ones during the demonetization period. In the normal situation, elder companies are profitably superior because of their good establishment with the customer and also because of their ability to access resources (Coad, Segarra-Blasco, & Teruel, 2010). Mateev, Poutziouris, and Ivanov (2013) advocated that firm's age and size are considerable factors in determining the leverage. Therefore, companies, especially the elder ones, must utilize their relations with the suppliers to extend the debt during financial disruption.

CONCLUSION

There is no sense to compare the impact of demonetization with the global banking sector crisis of 2008. Demonetization is not such a big disaster, but it created a liquidity shock that hampered economic activities. The study aimed at examining the impact of demonetization on the financial performance of 2,892 listed companies and finding out whether companies' age makes a difference in the financial performance during the demonetization period. This paper is an extension to the literature work that has been done so far regarding demonetization. Using set of nonparametric tests, findings indicated that there is a difference in the financial performance of 2,892 companies in the pre- and post-the demonetization period. The selected companies were divided into three groups according to their establishment year to investigate if the decrease/increase in the financial performance post-demonetization period is statistically significant. It was found that there is no significant difference among the three groups at 5% level of significance, which means that the demonetization process had an impact on all the companies, irrespective of their age.

LIMITATIONS AND FUTURE DIRECTIONS

Although the sample size of the study is large, which enables the researchers to make a generalization on Indian firms, the study has some limitations. Firstly, number of companies in the groups that examine the age factor is not equal. Secondly, there are some variables that might affect the firm's performance and hide the effect of demonetization such as seasonality, which are not included in this study due to non-availability of data. It is suggested that such variables to be included in the future studies that examine the impact of demonetization or financial disruption on firm's performance.

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