

where P_i is the probability of investing in IT companies by an individual investor.

4. Results and Analysis

4.1 Demographic Information

Only 5.81% of the investors have invested in IT companies (N = 30985). Male investors, not unusually, are dominant (79.12%, N = 421872) over female investors (20.88%, N = 111342) in our analyzed sample. Private Service holder investors (47.15%, N = 251382) are way ahead in number from investors from other professions. The government service holders (N = 12737), in contrast, account for only 2.39% of the total sum of investors. We found 1.72% investors from the academic arena (N = 9170). Business persons (26.69%, N = 142294) are the second largest group of investors. 12.12% homemakers (N = 64607) are in action in the capital market, among which, female homemakers as in housewives (N = 61712) are of 95.52%. Students (N = 39247) are also investing in the capital market and we saw 7.36% of the total investors are students. Professional practitioners (1.95%, N = 10432), Retired employees (0.62%, N = 3326) and Unemployed persons (0.003%, N = 18) contribute very little to the total number of investors. In our sample, 65.75% investors are from Dhaka division (N = 350593). There are some foreign expats who have an investment in the capital market, though very negligible in amount (0.008%, N = 455).

Table 2. Classification of investors in terms of IT-investment

IT Investment (0: NO; 1: YES)	Frequency	Percent	Cumulative Percentage
0	502,228	94.19	91.19
1	30,985	5.81	100.00
Total	533,213	100.00	

Table 3. Cross-tabulation of Gender and Occupation

OCCUPATION	SEX		
	Female	Male	Total
Academician	2,891	6,279	9,170
Business	7,683	134,611	142,294
Govt. Service Holder	1,382	11,355	12,737
Homemaker	61,712	2,895	64,607
Private Service Holder	26,798	224,584	251,382
Professional Practitioner	1,573	8,859	10,432
Retired from Service	190	3,136	3,326
Student	9,104	30,143	39,247
Unemployed	8	10	18
Total	111,341	421,872	533,213

Table 4. Cross-tabulation of Sex and Administrative Division

DIVISION	SEX		
	Female	Male	Total
ABROAD	73	382	455
BAR	1,161	6,070	7,231
CTG	21,790	97,289	119,079
DHA	78,217	272,376	350,593
KHL	2,273	9,443	11,716
MYM	608	2,756	3,364
RAJ	3,378	14,265	17,643
RANG	310	1,532	1,842
SYL	3,531	17,759	21,290
Total	111,341	421,872	533,213

The mean age of the investors is 44.11 years (SD 10.53) and on an average, a single investor invests in 5 companies (SD 6.29). We discovered an investor who invested in 379 companies and this is the highest in our analyzed dataset.

Table 4: Summary statistics of Age, Number of Invested Companies, Years of Trading and Current Portfolio Valuation

Variable	Observations	Mean	Std. Dev.	Min	Max
age	533213	44.10828	10.52758	20	70
years of trading	533213	7.312399	3.470307	0	14
no of companies	533213	5.005405	6.28592	1	379
valuation in BDT	533213	1577728	4.53e+07	30000	2.49e+10

We have investors who have been engaged in trading for 7 years on an average (SD 3.47) with a maximum of 14 years. Average current valuation of their portfolios is around BDT. 1.5 million. The highest valuation of the portfolio is BDT. 2.49 billion.

4.2 Logistic Regression Analysis

Table 5. The result of logit analysis

IT Investment	Odds Ratio	Std. Err.	z	P>z	[95% Conf.	Interval]
age	.9915267	.0006419	-13.14	0.000	.9902694	.9927855
years_of_trading	.9589214	.0017506	-22.98	0.000	.9554963	.9623587
no_of_companies	1.112201	.0009465	124.95	0.000	1.110347	1.114058
Gender (Ref: Female)	1.036652	.0551257	0.68	0.498	.9340473	1.150528
Division_DHK	1.00808	.0130259	0.62	0.533	.9828706	1.033936
BusinessPerson	.9020604	.0692378	-1.34	0.179	.776071	1.048503
Homemaker	1.131286	.0590861	2.36	0.018	1.021209	1.253227
PrivateService	1.135439	.0662594	2.18	0.030	1.012724	1.273023
Student	.9511496	.0686904	-0.69	0.488	.8256129	1.095774
Interaction:						
MaleStudent	1.193874	.0920956	2.30	0.022	1.026353	1.388738
MalePrivateService	1.025436	.0623503	0.41	0.680	.9102324	1.15522
MaleBusinessPerson	1.391803	.1099942	4.18	0.000	1.192085	1.62498
cons	.0513452	.0030172	-50.53	0.000	.0457595	.0576128

Age seems to be a strong predictor of an investor's decision on investing in an IT company or not. The higher the age, the less likely the investor is to invest in an IT company, even if a very less likely (OR 0.99, [95% CI 0.9902694 - 0.9927855]), $P = 0.00$. Similar direction of association is found between trading years and IT investment (OR 0.95, [95% CI 0.95 - 0.96]), $P = 0.00$. As expected, as the number of companies invested in goes up, the more likely is the investor to have an IT company in his endowment (OR 1.11, [95% CI 1.110 - 1.114]), $P = 0.00$. This sort of finding is also true for homemakers (OR 1.13, [95% CI 1.02 - 1.25]), $P = 0.18$ and private service holders (OR 1.13, [95% CI 1.01 - 1.27]), $P = 0.03$.

However, gender and abiding in Dhaka don't appear as immense predictor since they both are insignificant at 5% level with P values equal 0.49 and 0.53 respectively.

Though being a business person or student do not influence the decision of investing in IT company significantly ($P > 0.05$), the interaction terms produce a somewhat different result. A male business person (OR 1.39, [95% CI 1.19 - 1.62]), $P = 0.00$ or a male student (OR 1.19, [95% CI 1.03 - 1.39]), $P = 0.02$; is more likely to invest in IT companies than their counterparts.

The likelihood ratio statistic (chi-square) is statistically significant at even 1% level, χ^2 (12, $N = 533213$) = 17961.20, $P = 0.00$.

4.3 Implications

- Still, as apparent from the demographic information, investment in the capital market is like a men's accessory. Gender divide prevails and at a strong magnitude. When it comes to IT investment, only 1% female investors ($N = 5715$) have at least one IT company in their portfolios, though the likelihood for males to be more IT investment-oriented is statistically insignificant.
- Older peoples don't have interest in IT companies as much as their counterparts have as per the analysis. We get this palpable sense from the observed odds ratios for age and years of trading.

- Private-service holders have more concentration in the capital market than the government service holders. One possible reason is that private employees are more hesitant about their future income flow than the government employees because of government jobs are more secure. Therefore, private employees want to make money from every possible legal source and as a part of this process; they invest more in the capital market.
- Many students are involved in the capital market. Will to obtain financial independence, cutting monetary pressure off from parents, even latent gambling mind can push them toward the market at this younger age.
- Homemakers and private service holders are more likely to invest in IT companies whereas male students and male business persons tend more to invest in those companies.

5. Limitations and Conclusion

Our analysis, in each way, focuses basically on the demographic variations those could stimulus the aspiration after investing in IT companies. As we extracted our expected dataset, we found that the number of the investors in IT sector is very stumpy compared to the whole size of the investors. IT companies don't seem to be lucrative to the majority portion of the investors due to, probably, volatility or lack of trustworthiness, even for less recognition among peer investors. Our study gives a blow to the traditionally perceived notion that gender is an issue while taking investment decision specifically on IT since IT was thought to be a toy for the boy. However, the older or the more experienced the investor, the less is the likelihood of his investing in IT companies. Perchance his technological cognition lags behind the actual progress and potential of the IT companies. Homemakers and private service holders have more positive intention over others to capitalize IT companies. Homemakers pass their leisure browsing internet, surfing television channels, roaming around social network sites which have made them techno-aware and they are not afraid to invest in IT. In our existing social dynamics, it is believed that private companies are more technologically advanced compared to other sectors and thus private service holders might also get the chance to be more close to technological aspects due to their job nature. Gender divide, to a certain extent, is visible among students and business persons because male students and male business persons are ahead in probability than females counterparts in capitalizing IT companies.

Due to inconsistency in data, we had to filter a bulk amount of observations. If those were included, who knows we could have got different results. But the result of our analysis is relatable with our perceived experience in most of the cases. Future research focus could be directed to the point that whether the IT investors are risk-lover or risk-averse, what is there psychometric state, in which cognitive sectors they vary with the non-IT investors, how big is their expectation-perception gap, do they have the positive continuance intention of investing in IT or not. Probably this study is the maiden step in Bangladesh to capture the demographic variation between IT-capitalizer and others. This paper can give IT companies at least some hints to identify who are their investors and can give researchers some food for thoughts for their future research.

6. Bibliography

- Abreu, M., & Mendes, V. (2018). *Do Individual Investors Trade Differently in Different Markets?* Lisbon: Portuguese Securities Commission.
- Ahmed, M. N., & Imam, M. O. (2017). Macroeconomic Factors and Bangladesh Stock Market: Impact Analysis through Cointegration Approach. *International Review of Business Research Papers*, 3(5), 21-35.
- Arnott, R. D., & Chaves, D. B. (2015). Demographic Changes, Financial Markets, and the Economy. *Forthcoming in the Financial Analyst Journal*.
- Bakshi, G. S., & Chen, Z. (1994). Baby Boom, Population Aging, and Capital Markets. *Journal of Business*, 67(2), 165-202.
- Ball, M. (1961). Investment Company Performance: Management Performance More Valid than Investor Experience. *Financial Analysts Journal*, 17(5), 51-58.
- Brunetti, M., & Torricelli, C. (2010). Demographics and Asset Returns: Does the Dynamics of Population Ageing Matter? *Ann Finance*, 6, 193-219.
- BSEC. (2018, May 14). *Bangladesh Securities and Exchange Commission*. Retrieved from <http://www.sec.gov.bd>
- Cresson, J. E. (2002). R²: A Market-Based Measure of Portfolio and Mutual Fund Diversification. *Quarterly Journal of Business and Economics*, 41(3/4), 115-143.

- Davenport, M., & Mann, K. (2016). Demography, Capital Flows and International Portfolio Choice over the Life-cycle. *Unpublished*.
- Dos Santos, B. L., Peffers, K., & Mauer, D. C. (1993). The Impact of Information Technology Investment Announcements on the Market Value of the Firm. *Information Systems Research*, 4(1), 1-23.
- DSE. (2018, May 14). *Dhaka Stock Exchange Limited*. Retrieved from http://www.dsebd.org/by_industrylisting1.php
- Fagereng, A., Gottlieb, C., & Guiso, L. (2013). *Asset Market Participation and Portfolio Choice over the Life-cycle*. Oslo: Statistics Norway, Research Department.
- Foucault, T., Sraer, D., & Thesmar, D. J. (2011). Individual Investors and Volatility. *The Journal of Finance*, 66(4), 1369-1406.
- Ghazinoory, S., Khorasani, A., Rostamy, A. A., Taheriattar, G., & Rashidirad, M. (2016). Performance appraisals of ICT companies in the Tehran stock market: contradiction with the global trend. *Economic Research*, 29(1), 529-544.
- Goetzmann, W. N., & Kumar, A. (2007). *Equity Portfolio Diversification*. Review of Finance.
- Goyal, A. (2004). Demographics, Stock Market Flows, and Stock Returns. *Journal of Financial and Quantitative Analysis*, 39(1), 115-142.
- Hasan, R., & Raturi, M. (2003). Does Investing in Technology Affect Exports? Evidence from Indian Firms. *Review of Development Economics*, 7(2), 279-293.
- Heaton, J., & Lucas, D. (1997). Market Frictions, Savings Behavior, and Portfolio Choice. *Macroeconomic Dynamics*(1), 76-101.
- Hoque, A. (2007). Co-movement of Bangladesh Stock Market with Other Markets: Conintegration and Error Correction Approach. *Managerial Finance*, 33(10), 810-820.
- Islam, M., Khan, H.-a. R., & Ahmed, M. (1996). The Behavior of Stock Investment in Bangladesh. *Savings and Development*, 20(4), 447-460.
- Jokhi, D. M., & Pandya, D. (2016). Impact of Demographic Transition on Stock Markets - A Review Perspective. *Internaional Journal of Innovative Research and Development*, 5(3), 194-196.
- Klemkosky, R. C., & Martin, J. D. (1975). The Effect of Market Risk on Portfolio Diversification. *The Journal of Finance*, 30(1), 147-154.
- Korniotis, G. M., & Kumar, A. (2011). Do Older Investors Make Better Investment Decisions? *The Review of Economics and Statistics*, 93(7), 244-265.
- Kumar, A., & Lim, S. S. (2008). How Do Decision Frames Influence the Stock Investment Choices of Individual Investors? *Management Science*, 54(6), 1052-1064.
- Lease, R. C., Lewellen, W. G., & Schlarbaum, G. G. (1973). The Individual Investor: Attributes and Attitudes. *The Journal of Finance*, 29(2), 413-433.
- Mobarek, A., Mollah, A., & Bhuyan, R. (2008). Market Efficiency in Emerging Stock Market: Evidence from Bangladesh. *Journal of Emerging Market Finance*, 7(1), 17-41.
- Poterba, J. M. (2001). Demographic Structure and Asset Returns. *The Review of Economics and Statistics*, 83(4), 565-584.
- Poterba, J. M. (2001). Demographic Structure and Asset Returns. *The Review of Economics and Statistics*, 83(4), 565-584.
- SDAsia. (2018, May 14). *Great Investment Potential in Bangladesh ICT Sector: Employment for 2 million People by 2021*. Retrieved from <https://sdasia.co/2016/10/19/40406/>
- Singh, J., & Yadav, P. (2016). A Study on the Factors Influencing Investors Decision in Investing in Equity Shares in Jaipur and Moradabad with Special Reference to Gender. *Amity Journal of Finance*, 1(1), 117-122.
- Statman, M. (1987). How Many Stocks Make a Diversified Portfolio? *The Journal of Financial and Quantitative Analysis*, 22(3), 353-363.
- Ulrich, T. A. (1975). The Effect of Portfolio Size on Portfolio Performance: An Empirical Analysis. *The Journal of Finance*, 30(3), 921-922.

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