

Exploring the Determinants of Personal Finance Difficulties by Machine Learning – with Special Focus on Socio-Economic and Behavioural Changes Brought by COVID-19

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Abstract

Purpose: This research aims to explore how personal and environmental factors, especially the socio-economic changes and behavioural changes fostered by the outbreak COVID-19 pandemic, affect the financial vulnerability of a specific segment of people in financial distress. Innovative research methodology of machine learning will be applied to data collected from over 300 local individuals in Hong Kong seeking counselling or similar services in recent years. **Results:** First, machine learning has found that too much exposure to digital services and information of digitised services may lead to adverse effects on respondents' financial vulnerability. Second, the improvement in financial literacy level provides benefits to the financially vulnerable group, especially those respondents who have started with a lower level. Third, serious addiction to digital technology can lead to worsened debt servicing ability. Machine learning also has found a strong correlation between debt servicing situation and income seeking behaviour as well as spending behaviour. In addition, if the vulnerable groups are able to make appropriate investments, they can reduce the probability of incurring financial distress. Finally, being too active in borrowing and repayment can result in higher likelihood of over-indebtedness. **Conclusion:** Findings can be employed in formulating a better counselling strategy for the professionals. Debt counselling services can be more preventive in nature. For example, according to the findings, with low level of financial literacy, the respondents are prone to over-spending and unable to react properly to the e-marketing promotion messages pop-up from digital services, or even falling into financial/investment scams. In addition, people with low level of financial knowledge will benefit from financial education. Therefore, financial education program could include tech-savvy matters as special features.

Keywords: Personal finance, digitisation of the economy, COVID-19 pandemic, addiction to digital technology, financial vulnerability