Decision Support System to Predict Business Performance: Study of Small and Medium Scale Enterprises During COVID-19

Prepared by

Muthukuda Arachchige Don Buddhika Lanka Jayaweera
198757X

Faculty of Information Technology
University of Moratuwa

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Declaration

We declare that is our own work and has not been submitted in any form for another degree or diploma at any university or other institution of tertiary education Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given.

Name of Student

M.A.D.B.L Jayaweera

Signature of Student

UOM Verified Signature

Date: .....

Supervised by

Name of Supervisor

Mrs. Indika Karunaratne

Signature of Supervisor

UOM Verified Signature

Date: .....

Abstract

The COVID-19 pandemic has disrupted business activity, particularly for small and medium enterprises, some of which have been entirely lost to the economy. This unexpected crisis has required that businesses change quickly with few resources. Some enterprises respond to this situation by applying creativity and have responded to the change more successfully than others. Generally, business performance depends on the owner's characteristics and how they operate their businesses. Therefore the aim of this research was to examine the relationship between owner characteristics and small business performance and limitations during the pandemic. This research consisted of collecting primary data, using a questionnaire, from small and medium enterprises in three grama niladari divisions, in Chilaw. Hypotheses were tested using descriptive techniques, multiple regression analyses, and decision tree algorithmhem. It was hypothesized that the owner's s characteristics would relate to business performance according to sales growth, profit growth and number of employees growth. The results indicate that a substantial proportion of businesses have closed due to the pandemic. Business owners had used financial and non-financial strategies to tackle the crisis (obtaining loans, utilizing business and social networks, pursuing new market channels), but a substantial number simply did not adopt particular strategies. The personality characteristics, adaptability, competitiveness, autonomy, risk propensity and emotional resilience significantly affected business performance ($p<0.05$). The owner's age, business type, business age, and some finacila and non-financial strategies also showed significant relationships with business performance ($p<0.05$). The research findings give insights into how the pandemic has taken a toll on SMEs and findings are used to build up a decision support system.

Keywords**:** Owner's characteristics, Business characteristics, decision support system, Business performance, COVID-19

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