

# Viability of the Digitalization of Dental Laboratory in Bacolod City

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## Article history

Submitted: 29 June 2020

Revised: 25 October 2020

Accepted: 10 November 2020

## Keywords

Hospital Administration

Digitalization

Dental Laboratory

Viability

Descriptive Research

Bacolod City

**Introduction.** Dentistry has evolved from its origin to the present day, becoming almost entirely digitized and supervised. The digitalized dental laboratory saves time due to computer-aided design and computer-aided manufacture (CAD/CAM) technology, which will capture and display clients' tooth or teeth and gums on a 3D image on a computer screen sent to the lab. It enables a dental lab technician to work faster and get the perfect design of the digital dental restoration. The main advantage of digitalization includes faster and improved efficiency on the turn-around time of devices, like crowns and bridges, and improved accuracy of procedures and manufactured gadgets. Digitalization Dental Laboratory (DDL) is the first to offer a digital dental lab in the city of Bacolod. The service allows laboratories to design the prosthesis digitally from in-house CAD software and email the design data provider or download the data file into a proprietary web host or server. The lab will cater to the digital needs of dental patients of the Multi-Specialty Dental Center (a sister company of DDL) and other dental clients.

**Methods.** Descriptive research design utilizing a survey questionnaire was used to determine the viability of the Digitalization of Dental Laboratory in terms of management, marketing, technical, financial, and socio-economic aspects, challenges and opportunities of the laboratory as well as its marketability utilizing the elements of the marketing mix such as product, price, place, promotion, people, physical evidence and process. Through purposive sampling, 138 respondents participated in the survey. The data were gathered using a researcher-made instrument. Descriptive statistics were employed using mean and standard deviation to determine the degree of viability. For challenges and opportunities, frequency count and percentage distribution were used to describe "what exists" concerning the variables and to analyze the data. Secondary data were employed to assess and calculate the financial performance of a dental laboratory for 2019-2020 and the digital dental laboratory for 2021-2022-2023.

**Results.** The findings of the study revealed that the digitalization of dental laboratory in terms of management, marketing, and technological aspects is viable. However, financial and socio-economic aspects have high viability. The DDL's competitive advantage is its acquisition and use of the dental computer-aided design and computer-aided manufacture (CAD/CAM). Although these require a large amount of investment, they increase productivity due to less than an hour turn-around time for tooth restoration. The effectiveness of the DDL on the use of the elements of the marketing product, price, place, promotion, concerning people, process, and physical evidence is highly viable. The financial performance of the dental laboratory for FY 2019-2020 was not sufficient to cover its operating expenses. With the installation of modern dental equipment and technology by FY 2021, 2022, 2023, the digital dental lab projected that the firm achieves high financial profitability, liquidity, and solvency. Cash flow is enough to pay its short and long-term responsibility to its creditors and save for future investment. The identified challenges of the digital dental laboratory are the high turn-over of digital dental lab technicians, the lack of proper training on the use of digitalized dental products, and the high investment cost in the acquisition of new technology. Overall, the digital dental laboratory business in Bacolod is highly viable since it is a pioneer among the dental laboratories to be digitalized in the city.

**Conclusion.** Management may sustain the firm's financial health and maintain its financial position by safeguarding its fund's disbursement and giving priority to a productive project. The firm may explore the possibility of requesting the Technological Education and Skills Development Academy (TESDA) to continue supporting the continuity of training future digital dental laboratory technicians by offering a more advanced vocational course on digital dentistry specifically for dental lab technicians. Measures must be taken to sustain the firm's profitability, liquidity, and solvency to make the business visible to fellow dentists and dental clients and the current patients of its sister company Multi-Specialty Dental Center. The COVID-19 pandemic has affected the deferred revenue of the digital dental laboratory. To cope with the investment in the acquisition of modern equipment and personal protective equipment not only for dentists but also for the laboratory, the firm may develop a strategy to recover the unprecedented revenue decline. The firm should also strengthen its website and social media exposure to accommodate dental clients online, follow the protocol of CDC, PDA, and DOH to observe a "high level of precaution," and eliminate the risk of the life of the front liner.

**Practical Value of the Paper:** The study significantly contributes to the few existing studies on the viability of digital dental laboratory. The management will utilize the study to search for ways to reduce the impact of COVID 19 in dental practice. A feasibility study has been derived as an output of this study. The study significantly contributes to the few existing studies on the viability of digital dental laboratory. The management will utilize the study to search for ways to reduce the impact of COVID 19 in dental practice. A feasibility study has been derived as an output of this study.

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