ABSTRACT

Today’s competitive market environment requires the small and medium enterprises (SMEs) companies to be concerned with the quality in improving their processing and production performances. This goal can be achieved through using practical statistical quality tools available in the statistical process control (SPC) programmes. The utilisation of quality tools such as the control charts enable manufacturers to lead in the process of decision making and as well as to meet with the high quality of their products. However, some SMEs prefer to use the manual SPC (graph paper sheet) which is tended to a several drawbacks such as creating human errors and time consumed in detecting problems. Therefore, this study highlights the latest development of SPC computer based system with the intention of performing statistical analysis, as well as in managing the quality data. The concept and information for the development of this system are based on the findings gathered from case studies conducted at the SME manufacturing companies through running interviews, questionnaires and observations. Moreover, the system development is also focused on particular data sets, simple statistical operations and user groups. The findings show that the system which is named the Small and Medium Enterprises - Statistical Process Control (SMEs-SPC) is a very practical tool for data analysis instead of using the manual SPC application. In addition, this system has the potential to encourage operators or production workers and industrial engineers to really understand the importance of collecting quality data for the purpose of enhancing their production performance.

Keywords: quality; SPC; small and medium enterprises
Rujukan


Peningkatan prestasi proses melalui peralatan kualiti berstatistik

1Jabatan Kejuruteraan Mekanik dan Bahan
Fakulti Kejuruteraan & Alam Bina
Universiti Kebangsaan Malaysia
43600 Bangi, Selangor D.E., MALAYSIA
Mel-e: mnizam@eng.ukm.my*; zurazain@vlsi.eng.ukm.my

2Fakulti Teknologi Maklumat & Sains Kuantitatif
Universiti Teknologi MARA (UiTM)
Bukit Ilma, 18500 Machang, Kelantan D.N., MALAYSIA
Mel-e: surianiar@kelantan.uitm.edu.my

3Unit Pengajian Asas Kejuruteraan
Fakulti Kejuruteraan & Alam Bina
Universiti Kebangsaan Malaysia
43600 Bangi, Selangor D.E., MALAYSIA
Mel-e: zm@eng.ukm.my

* Penulis untuk dihubungi