WHAT MAKES A GOOD ABSTRACT?

SPS, UTM

ABSTRACT

- The abstract is the place where someone can get a quick overview of your research.
- Most examiners first scan the abstract and make initial judgement about the quality of a thesis.
- Hence, having concise and nicely written abstract is paramount.

ELEMENTS OF GOOD ABSTRACT

Perry et al (2003, p. 658) recommend that an abstract should include the following seven elements:

Element 1: The abstract has to start with a brief theme sentence to orientate the reader about the overall issue addressed in the thesis. The sentence should grab the reader's attention.

Element 2: The abstract should then indicate the main aim or purpose of the study.

Element 3: Next, the academic and/or practical importance of the study should be explained.

Element 4: The methodology used in the study should also be described.

Element 5: The main findings of the study should be summarized.

Element 6: Statements of conclusions should indicate the contribution made by the study in filling gaps in the literature.

Element 7: Finally, the practical or managerial implications of the study's findings should be highlighted where appropriate (highly applicable for social science studies).

Source: Perry, C., Carson, D. & Gilmore, A. (2003). Joining a conversation: Writing for EJM's editors, reviewers and readers required planning, care and persistence. European Journal of Marketing, 37(5/6): 625-557.

EXAMPLE 1: ENGINEERING

[Element 1] Self-consolidating high performance concrete (SCHPC) is an advanced class of concrete that can flow through congested reinforcement or intricate geometric configurations under its own weight without any compaction activity and it does not segregate. Research and development in the use of supplementary cementing materials (SCM) to produce SCHPC have continued to gain attention worldwide. This is as a result of the global quest to reduce carbon dioxide emission to the threshold that will be tolerated by the earth. [Element 3] Despite the successes achieved by replacing cement with supplementary cementing materials (SCM), a number of drawbacks were unavoidable. The inclusion of palm oil fuel ash (POFA) into the SCHPC mixes increases the water demand due to high surface area and also induces segregation at replacement levels above 20%. In contrast, the inclusion of pulverized burnt clay PBC in the mix reduces the water demand due to lower surface area and improves the rheological properties of SCHPC at a replacement level of up 37.5%. Although PBC improves the rheological properties of SCHPC, its contribution to strength development is less effective in comparison to POFA. [Element 2] This research, therefore, focuses on the impact of blended POFA and PBC on the fresh and hardened properties of SCHPC. [Element 4] Assessment of the microstructure, physical and chemical characteristics of the binders was carried out. Furthermore, a simple mix design approach and the evaluation of the fresh and hardened properties of the SCHPC systems were executed. Various techniques, including the use of X-ray diffraction, scanning electronic microscope, Particle size analysis, BET surface area analysis and thermogravimetric analysis were used to study the microstructure of the SCM and the hardened SCHPC systems. Series of paste, mortar and concrete were prepared with blended POFA and PBC at the replacement level of 10%, 15%, 20% and 30%, using water to binder ratio (W/B) of 0.30, 0.35 and 0.40 respectively. Fresh properties of the paste, mortar and concrete were studied with respect to their filling ability, passing ability, segregation resistance, unit weight, air content and heat of hydration. The hardened properties examined are; mechanical strengths, deformation characteristics and durability properties. [Element 5] A 4-phased investigation revealed that both POFA and PBC are good pozzolanic materials having excellent physical and chemical properties. At 30% replacement, the filling ability was improved by 7%, the passing ability was improved by 7% and the segregation index was reduced from 7 to 2.4%, with a visual stability index of 0. The unit weight and air content decreased by 2.5% and 5.6%, respectively, while the heat of hydration was reduced by 19%. Also, the mechanical strengths were increased between 5 to 6% and the increase in the drying shrinkage values was less than 0.01%, while the modulus of elasticity was increased by 4%. The durability and microstructural characteristics of the respective SCHPC were significantly improved. [Element 6] Consequently, a blend of POFA and PBC of up to 30% (15% POFA and 15% PBC) with a high range water reducer dosage of ≤ 2.5% was considered suitable for the production of SCHPC with W/B ≤ 0.3 and up 0.40.

EXAMPLE 2: PHYSICS

[Element 1] Laser surface alloying (LSA) is an optical technology to modify surface properties of a material. [Element 2] However, it is still at infancy stage compared to other established conventional methods in modern material processing. This stems from less information about the fundamental process behind the phenomenon. In attempt to shed light on this matter, a fundamental study is carried out by alloying aluminium (A1) with iron (Fe) using a single laser pulse exposure. [Element 3] A new work is proposed by coupling LSA with laser induced breakdown spectroscopy (LIBS) which allows the in-situ monitoring and optimizing the iron coating thickness. [Element 4] LSA system is developed using a Q-switched Nd:YAG with fundamental wavelength of 1064 nm, with pulse duration of 10 ns. The laser operates in a single pulse, but the laser energy was varied from 10 up to 520mJ. Pure aluminum sheet and block were employed as the substrate. PVA solution is used as the adhesive material to pre-paste iron powder as the alloyed element at thickness in the range from 110 to 180 μm. When Q-switched laser is focused on the sample, an optical breakdown occurred associated with plasma formation. CCD video camera was used to record the plasma and MayaPro 2000 spectrometer was used to analyze the spectrum of the emission line during the plasma cooling. The alloyed aluminium was analyzed using SEM, EDX, XRD and HV microhardness. The microstructure of the alloyed layer showed the effect of melting co-existence with solid particle. Chemical composition of the alloyed showed the Fe, Al, C, and O. Meanwhile the XRD examination identifies the presence of new composite like A113Fe4, A12Fe, A1Fe, A15Fe2, A16Fe and A1Fe3. The presence of new composites is responsible for improving the hardness of the A1 surface and the maximum hardness achieved is 41 HV corresponding to the super lateral energy of 455 mJ. [Element 5] Based on this information the mechanism of laser alloying is understood due to the capability of the energy delivered to meet the decalescent and recalescent point. At both points there involve absorption and liberation of latent heat to delay either during heating or cooling process, which are responsible for allowing the information of new composite. Analysis using LIBS has shown that the plasma temperature is proportional to the laser energy. In contrast, the intensity of A1 line in the spectrum is inversely proportional to coating thickness. Meanwhile, the optimum coating thickness can be determined from the overlapping intensity between A1 and Fe emission lines. The optimum thickness recorded at 140 μm and 130 μm for energy 65 mJ and 330 mJ respectively and was found to coincide with the highest recorded increment in hardness. [Element 6] The coupling LIBS system with LSA has been shown as a promising technique to alloying material which offers an in-situ monitoring for the laser energy, coating thickness as well as for optimization of the coating thickness.

EXAMPLE 3: SOCIAL SCIENCES

[Element 1] Small and medium sized enterprises (SMEs) in developed and developing countries contribute significantly to the economy through their products and services. [Element 3] Marketing planning activities contributed significantly to small businesses' success. This clearly indicates the importance of strategic marketing to SMEs' performance. Review of literature indicates in spite of the importance of SMEs and the increase of the knowledge in strategic management and marketing, few empirical studies have examined SMEs' performance from the angle of strategic marketing. [Element 2] This study aims to fill in the lack of the empirical investigations on strategic marketing practices by developing an integrative model to examine the relationship between strategic marketing planning and company performance. Review of the related literature identified three dimensions of strategic marketing planning to be incorporated in the conceptual model namely: formality, comprehensiveness and formality. Apart from the above factors, the role of marketing networking dimensions and possible control variables were also examined. These variables were empirically tested on Malaysian SMEs in manufacturing industries. [Element 4] This study employed survey technique through questionnaire to SMEs' owners/managers. Previous developed and well-established items served as measures of this study's constructs. Data were analysed by modelling an artificial neural network with multiple back propagation software. [Element 5] The findings supported the non-linear relationship between strategic marketing planning and SMEs' performance (financial and non-financial) that has been moderated by marketing networking dimensions (i.e. marketing networking intensity, marketing networking strength, marketing networking proactivity and marketing networking diversity). [Element 6] In addition, the results of this study indicated the importance of marketing networking dimensions for SMEs performance and its vital role to improve the effect of strategic marketing planning on the SMEs' performance.

THANK YOU AND GOOD LUCK!