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# Critical Success Factors of ISO14001 EMS: what researchers must do

**Name of the author: Harjeet Kaur**

Institutional affiliation: HELP University College, Malaysia

e-mail: [harjeetkjs@help.edu.my](mailto:harjeetkjs@help.edu.my)

## Abstract:

Despite of the growing interest in the voluntary environmental ISO14001 standards, little empirical information exists on the critical success factors of environmental management (i.e. EMS implementation). Indeed more broad empirical studies and large sample surveys methodologies will be required for exploring the relationship of specific environmental management practices to environmental performance. Such empirically validated measurement instruments are essential to undertaking the development and testing of predictive theories of environmental management. In particular more effort should be placed in formulating theoretical models that can represent the complex EMS practices-environmental performance relationships. At the present time, the nature of the relationship between the soft elements, hard elements and environmental performance remains unclear. This paper aims to provide a motivation for investigating the link between the soft and hard elements to environmental performance.

**Key-words:** ISO 14001 EMS, soft elements, hard elements, environmental performance.

## 1. Aims and scope of the paper

This paper aims to provide a motivation for investigating the link between the soft elements and hard elements of ISO14001 EMS to environmental performance.

Propose a theoretical framework that can represent the complex ISO14001 EMS practices-environmental performance relationships (i.e. mediation role of hard elements)

To aid potential research in this area, several research propositions are proposed for empirical testing.

## 2. Review of the Literature

Only a few studies in the existing literature on the critical factors contributing to successful ISO14001 EMS implementation. Many did not test the relationship between the critical success factors with environmental performance.

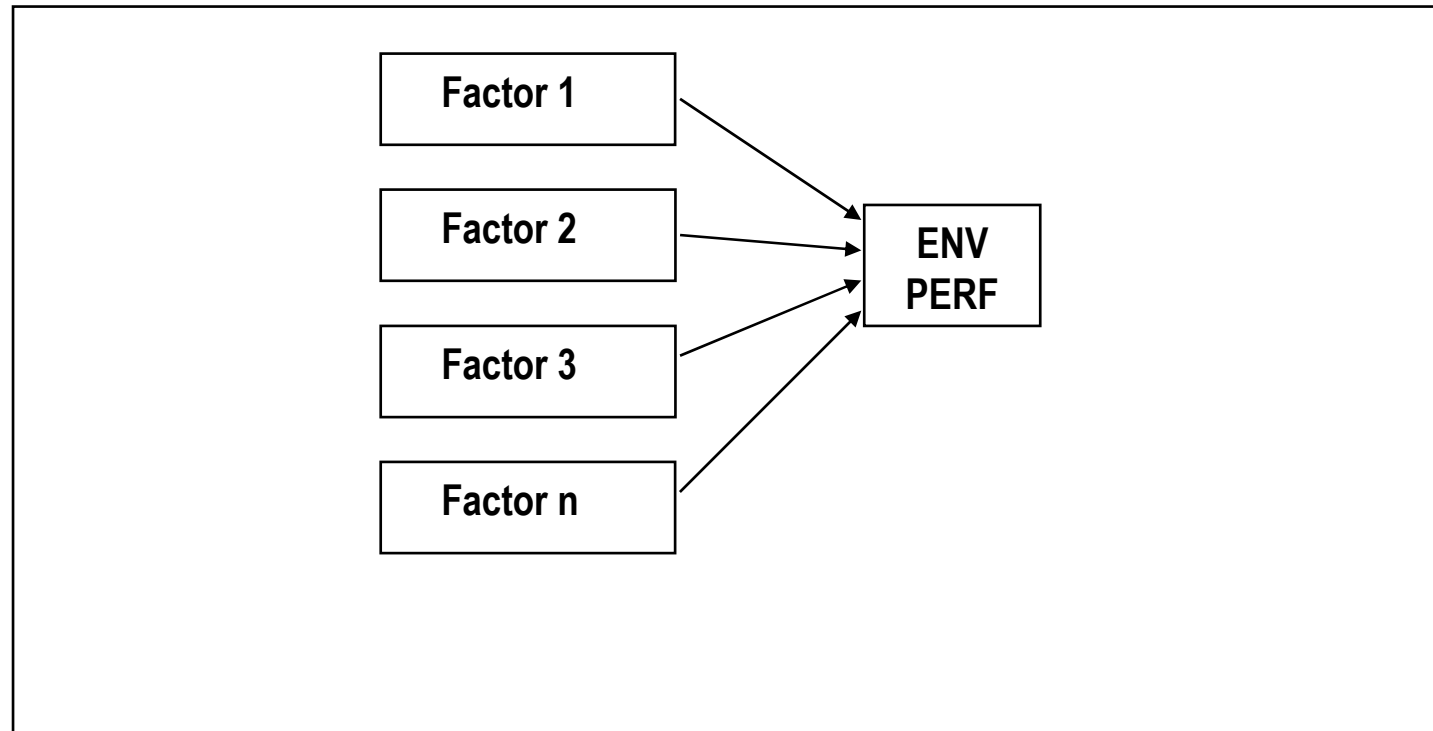
The key components that have impact on ISO14001 EMS implementation are a synergistic blend of 'hard' and 'soft' elements

The 'soft' elements are essentially dimensions of human resource management (HRM) while the hard elements are more technical-oriented.

Specifically the 'soft' elements are essential for supporting and facilitating effective utilization of the hard elements (Rahman and Bullock 2005, Ho *et al.* 2001, Flynn *et al.* 1995).

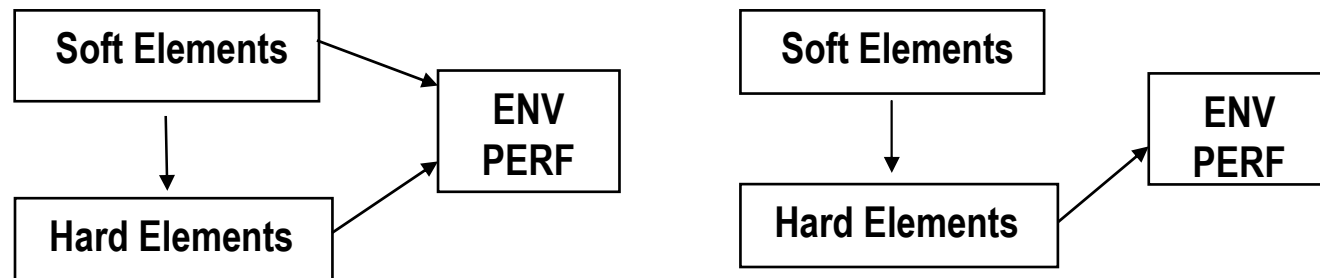
### 3. Methodology of research/ approach

The relationship between the soft elements, hard elements and environmental performance can be categorized at the individual form.



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The relationship between the soft elements, hard elements and environmental performance can be categorized at the group form. The elements of ISO14001 EMS are grouped as 'soft elements' and 'hard elements' first and then the impact of these groups on environmental performance is investigated: partial and full mediation.



## 4. Findings and dates

To aid potential research in this area, the following research propositions are proposed for empirical testing:

P1: soft EMS elements have direct affects on environmental performance

P2: hard EMS elements have direct affects on environmental performance

P3: soft EMS elements have direct affects on environmental performance on the adoption and utilization of hard EMS elements

P4: soft EMS elements indirectly affects environmental performance through its effect on hard EMS elements.

## 6. Concluding Remarks

More broad empirical studies and large sample surveys methodologies will be required for exploring the relationship of specific environmental management practices to environmental performance.

In particular more effort should be placed in formulating theoretical models that can represent the complex ISO14001 EMS practices-environmental performance relationships.

Also because many different conceptualizations exists as to how researchers and/or practitioners might operationally define the environmental performance construct, hence the difficulty of defining environmental performance and then operationalizing the construct as a measurable variable needs further attention (Klassen and McLaughlin 1996).

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