

Are Greek pre-service teachers literate on marine pollution issues?



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1. Introduction

To achieve an ocean literate society, ocean sciences must be integrated into educational practice, research, curricula, textbooks and assessments (Tran et al., 2010). Marine pollution is one of the fundamental concepts which support the principle that the ocean and humans are inextricably interconnected (Cava et al., 2005). **Successful integration of ocean literacy in schools requires the commitment of teachers who have a secure knowledge of ocean literacy principles and positive attitudes towards the marine environment.** But are teachers or pre-service teachers literate on marine pollution issues?

2. Objective

This study aims

- to assess **Greek pre-service primary teachers' knowledge, attitudes and self-reported behavior related to marine pollution issues** and
- to investigate **the relationships of these variables with background factors.**

3. Methodology

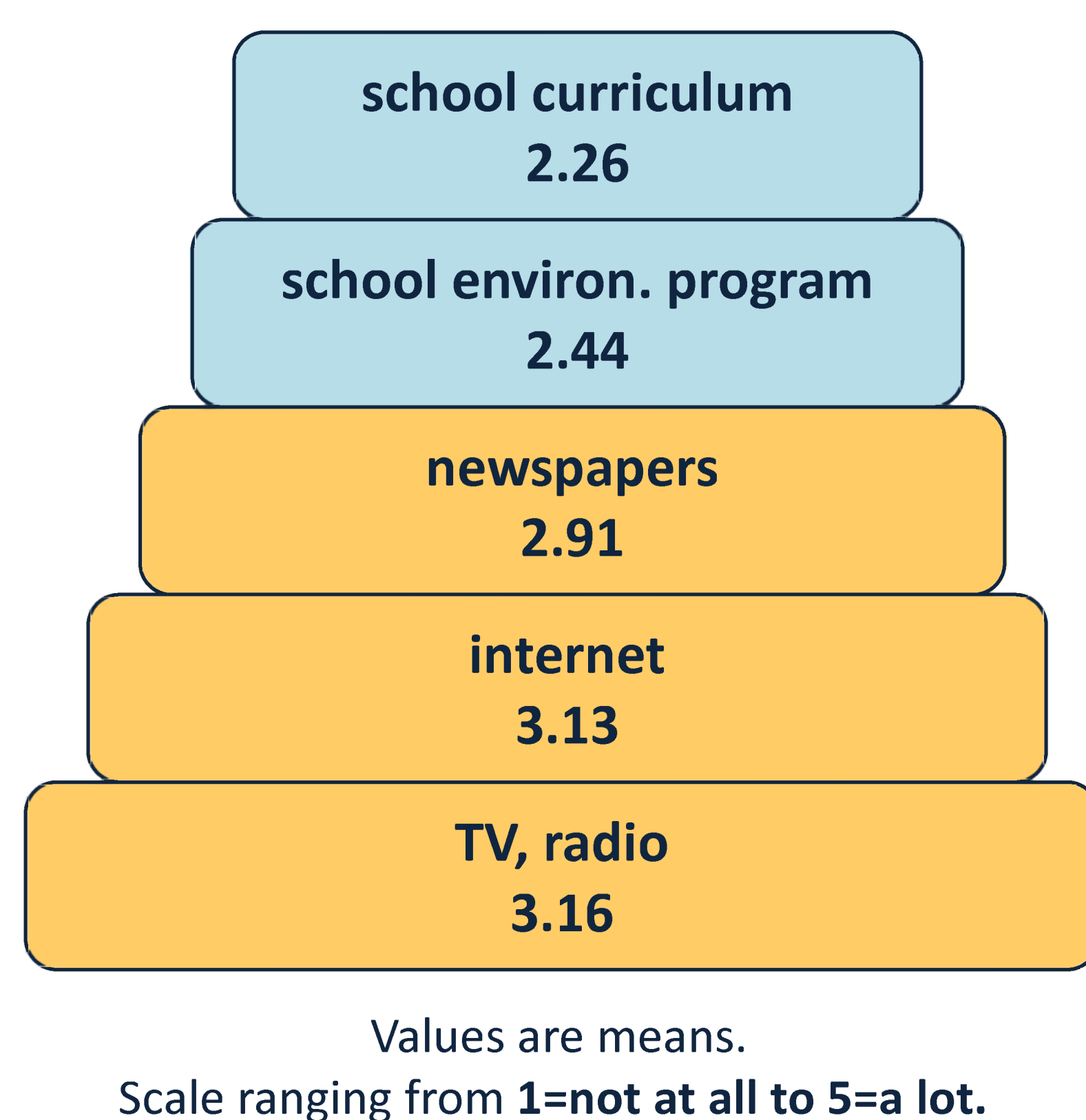
A **questionnaire** with three Likert-type scales, namely **knowledge, attitudes** and **behavior** related to marine pollution, as well as a set of questions regarding **background factors** was administered to 435 Greek pre-service primary teachers.

Exploratory factor analysis, item analysis and Cronbach's alpha were applied to assess construct validity and reliability.

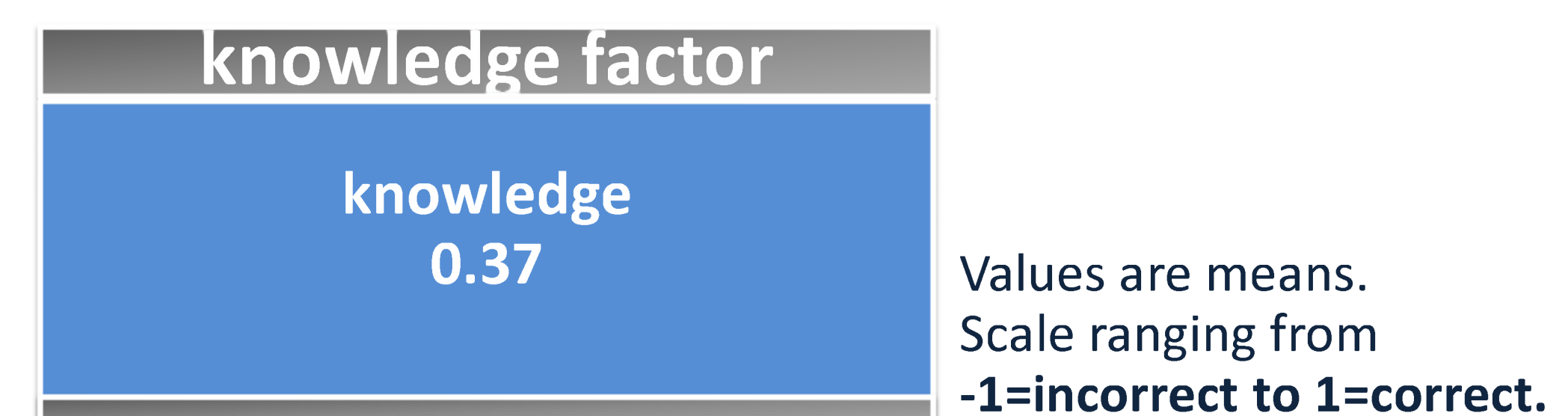
Independent samples t-tests and one-way analysis of variance (ANOVA) were applied to examine relationships between extracted and background factors.

4. Results

- Students attain **information** mostly from **media** and less from formal education.



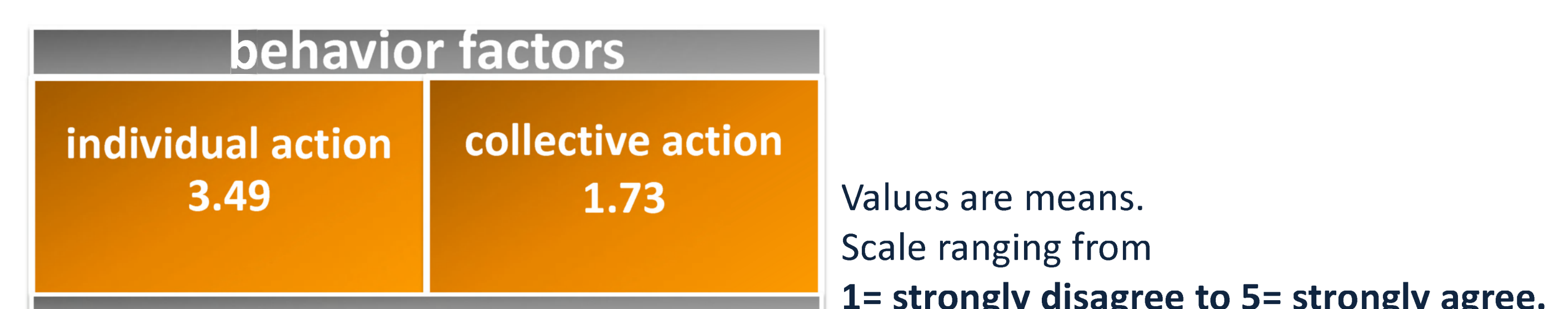
- One factor** was revealed from **knowledge** scale. Greek pre-service primary teachers possess **a relatively moderate level of knowledge** on marine pollution, holding though **misconceptions.**



- Three factors** were revealed from **attitude** scale. Pre-service primary teachers demonstrate **very positive attitudes towards the marine environment**, an **internal locus of control** and a **rather strong willingness to pay.**

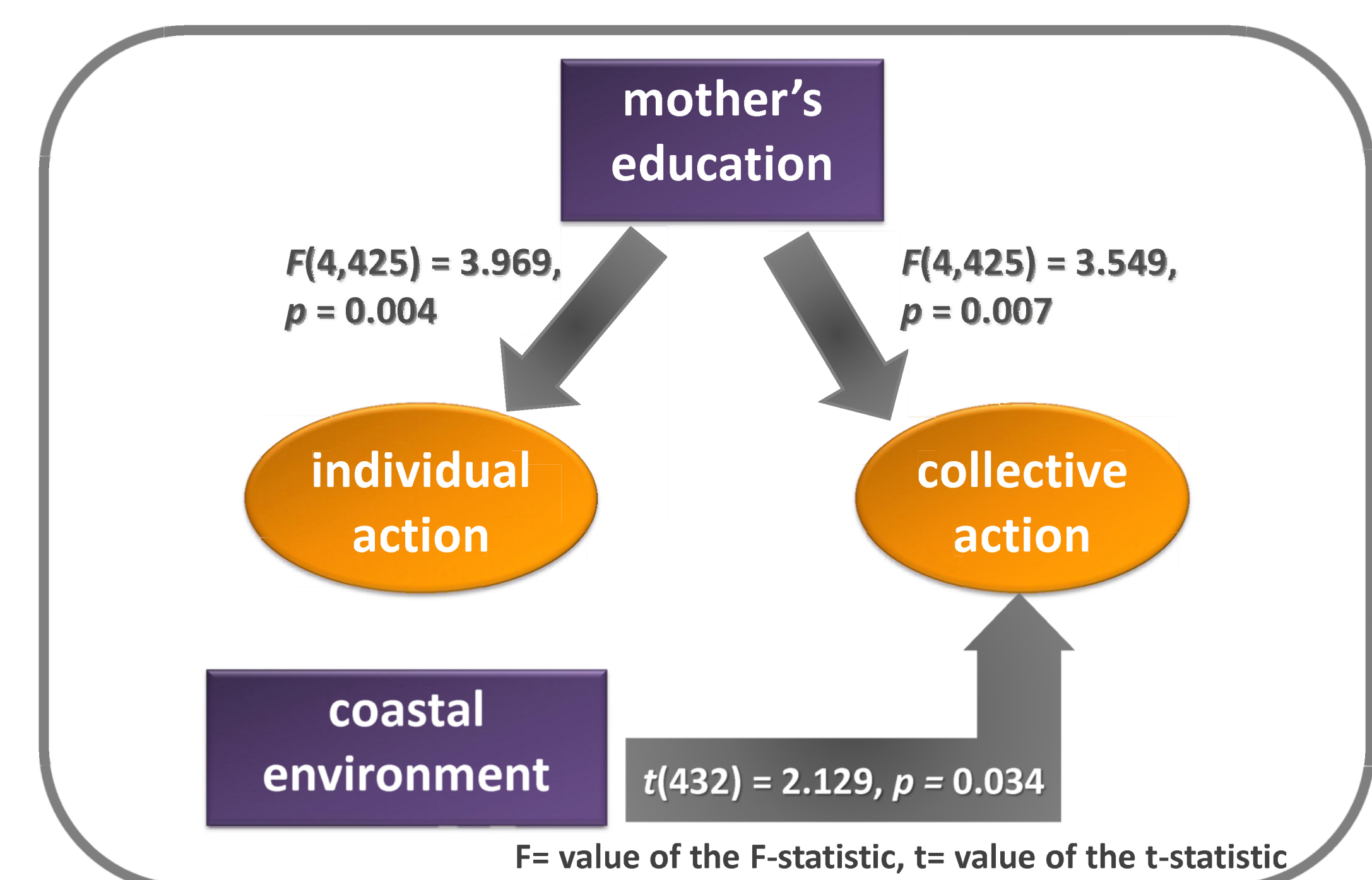


- Two factors** were revealed from **behavior** scale. Pre-service primary teachers demonstrate **moderate individual action** and **limited collective action** related to marine pollution issues.



- Pre-service teachers grown up in a **coastal hometown environment** demonstrated a significantly **higher level of collective action.**

Their **mother's education** significantly affected their **individual** and **collective action.**



5. Conclusion

Improved teacher education programs are needed to equip Greek pre-service teachers with secure **knowledge** on marine pollution issues, appropriate **teaching strategies** and **necessary skills** to act. Then, probably they and their future students will be able to make **informed and responsible decisions** regarding marine pollution issues and to **act individually and collectively** for the protection of the marine environment.

6. Literature

Cava F., Schoedinger S., Strang C. & Tuddenham P. 2005. Science content and standards for ocean literacy: A report on ocean literacy. Retrieved from http://coexploration.org/oceanliteracy/documents/OLit2004-05_Final_Report.pdf

Tran L.U., Payne D.L. & Whitley L. 2010. Research on learning and teaching ocean and aquatic sciences. NMEA Special Report #3: The Ocean Literacy Campaign 22–26.