



Figure 4. The following graphic represents the type of sports that are practiced by the users that participated in the

3.1. Users presentation and description

There were a total of 250 participants in the tests and validation conducted to this prototype stage of the system. From these 250 participants, 75% were male and 25% female, around 80% of the respondents had between 21 and 40 years old and 65% of them practice some type of near-the-shore sports activity (Figure 4). From that sample it is also important to conclude that most of the users were focused on surf (30%) and bodyboard (23%) activities. Nevertheless there are almost 47% of users that conduct some other type of near-the-shore activities, proofing that there is also a large number of potential interest in SiUinde beside the surfers and bodyboarders communities (for which there are already a large number of applications available).

The remaining 35% of the respondents that didn't practice any near-the-shore sportive activity, correspond to the users that are still interested in knowing coastline conditions, for other purposes: pleasure, fishing, economical activities or other.

3.2. Coastline activities and applications

The next important stage of the conducted validation was to assess if the users were aware of some other similar existing applications, and if they were, it would be extremely valuable to know exactly what was the users opinions about those applications.

Therefore, it was possible to conclude that around 61% of the surveyed users used some kind of application to find information about the near-the-shore conditions and that Windguru web-based service was selected as their main application of choice in 46% of the cases. The user satisfaction level with the type and quality of the existing applications is high (83% of the users were quite satisfied), however none of the user gave top scores to the existing applications, referring the need for

improvement. Also, on what concerns the information actuality on the analysed applications, around 40% of the respondents rated this aspect with a medium grade (3, on a scale from 1 to 5).

From this, it is important to conclude that users find extremely relevante using some kind of mobile applications to find about the conditions on the coastline. It is also important to notice that although users are usually satisfied with their current application, they refer that there is room for improving existing applications.

3.3. Reports sharing

The following part of the validation refers to one of the most critical characteristics of these type of systems, and consequently also of SiUinde - reports generation and sharing.

The results presented here represent the SiUinde prototype application usage by the surveyed users. During the tests and application testing with users it was possible to extract some conclusion from the analysis conducted. These results can be resumed in the following:

- A large majority of users (86%) agree that it is really easy to find their position on the map that is presented by the mobile application;
- 77% of the users attested that the geolocation on the application was accurate and precise, allowing the application to accurately detect the position of the user on the map;
- The functionality that allows the users to select the nearest beach was considered as extremely useful and intuitive. 75% of the respondents of the respondents considered that this was a useful;
- 81% of the users considered that the amount of beaches presented on the map was sufficient to make the application useful;
- Around 72% of the respondents considered that the icons created and the scale selected to produce and visualize the reports (in terms of sun, sea and wind conditions) were quite adequate and intuitive;
- On what concerns the reporting on the number of persons on the water, 61% of the respondents consider this functionality extremely useful and intuitive to use;
- Regarding the selection of activities according to the conditions of the selected location, 79% of the respondent users considered that this functionality was useful and intuitive;
- The functionality to add free text, photos and video to the report, has been well accepted by end-users and 96% of the users highly valued this option;
- The easiness about report submitting and visualisation of reporting information on the

maps has also received good feedback -98% of the users were satisfied with these functionalities.

From this section it possible to easily conclude that the users that evaluated our system and responded to the questionnaire, highly value the solutions that were adopted and implemented for the reports visualisation and reports submission, as two of the major functionalities of the SiUinde prototype system.

3.4. Overall evaluation of the system

After all the development that was accomplished on the development of the prototype, it was validated and some tests concluded and results collected.

On what concerns the general usage of the SiUinde application by end-users, 76% of the users considered that the application was extremely easy to use. Also, 76% of the users considered that SiUinde introduces something new when compared with the similar applications that they already use and that are available on app stores and on the web.

Another important aspect from this part of the survey is the fact that 85% of the respondent users considered using SiUinde in the near future, replacing their current applications of choice.

In resume, as a general conclusion from this validation and testing, it was possible to conclude that users find the application useful to support their near-the-shore activities, easy to use and attractive, capable of providing intuitive reporting and visualisation functionalities, and would consider using it in the future.

Although still on a prototype stage, the user reaction to the usage of the application was quite stimulating, revealing the interest of the users on its usage.

4. Conclusions

During the present article it was presented a system that was developed to allow the users to collaborate in the sharing of information about a group of parameters that are important for a set of coastline activities.

Coastline activities, mostly sport activities, are gaining importance among users, and more communities of users engage in some type of activities and search and exchange information about those activities.

The developed solution, SiUinde represents an end-to-end solution, supported on a mobile smartphone/tablet application and an integrated backend system, which collects reports from individual users and from other external services, and allows users, according to their specific preferences and activities, to be informed about the near-the-shore conditions in a given place and at a given time.

In addition, this article has also reported on the work that was performed to validate SiUinde with end-users. In order to achieve this, it was conducted a specific survey with a group of potentially interested users. Due to initial the nature of the work conducted and its characteristics only Portuguese test-users were considered.

From the survey that was conducted, and its subsequent analysis, it was possible to conclude that, in general, users were satisfied with the functionalities present on the application prototype and are willing to use the SiUinde application in the near future, as their top application of choice.

Although promising, there is still a larger validation that needs to be conducted after the public release of the system. Moreover, some functionalities, like the recommendation still need to be improved to meet the user demand.

Once again it is clear that this type of systems can be quite useful for end-users, in particular those that spend some precious time looking for the perfect spot and time to conduct their preferred near-the-shore activities. SiUinde presents itself as an interesting alternative to all of them.

5. References

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