Evaluation of the needed Coordination support for Crowdsourcing Software Design (CSD) Activities

In order to evaluate the need for the proposed coordination support, online surveys were conducted. The analysis of survey results is discussed in detail as follows:

4.4.1 Online Survey

The online survey is created in order to evaluate our proposed support improvements. The survey is distributed through email and social media. The survey can be viewed in Appendix A.

A survey was distributed to evaluate both the limitations and the proposed suggestion. The survey was distributed to 150 people and received 41 responses. It is taken into account that the selected people must have a strong background in the domain of CSD. It also considered that they have diverse roles including project manager, client, and designer. The primary data were identified as being relevant to the effectiveness of the conduct of this research. It was obtained using a well-structured survey developed from the initial identification of the limitations facing participants in CSD platforms and to study potential mechanisms for coordination between participants in these platforms.

The survey format was designed to elicit information on the following: information regarding participation in CSD platforms, an analysis of the limitations and suggestions affecting contest coordination in CSD platforms from strongly disagree to strongly agree [93]. The following results were obtained from the responses:

4.4.2 Information regarding participation in crowdsourcing software design platforms

* Figure 4-1 shows that the region of residence of the participants was in Middle East with a percentage of 44.1%, followed by the Asia with 26.5%, and then Europe with 14.7%, and the percentage of participants in South America was the lowest with 5.9%.

Figure (4-1): Respondents' Region of Residence

* The number of times the participants participated in the platforms ranged from 5 to 10 times with 44.1%, as shown in the Figure 4-2.

Figure (4-2): Number of Times the Participants

* Figure 4-3 shows that most participants use the 99designs platform with 35.8%, followed by the Upwork platform with 14.2%.

Figure (4-3): Use of Platforms

* The number of participants reached 41 people including clients, project managers, and designers. Figure 4-4 shows that most of the participants were designers with 73.5%.

Figure (4-4): Respondents' Role

4.4.3 Evaluation of the Limitations and Suggestions affecting contest coordination in crowdsourcing software design platforms

In this section, the respondents were asked to rank the limitations and suggestions affecting contest coordination in CSD platforms on a Likert scale of 1-5. Seventeen limitations and seventeen suggestions affecting contest coordination in CSD platforms are to be discussed in details:

Note: represents the limitation, represents the suggestion

**Part one: Creating design contest**

* **Limitation 1**: 85.3% of respondents found that they agreed that the unavailability of a form that includes all the information related to the contest that will be conducted may lead to a misunderstanding of the requirements of the contest, and 11.8% of respondents found that they not agreed from the limitation 1.
* **Suggestion 1:** 79.4% of respondents found that they agreed that the platform provides a detailed form that includes all the requirements to ensure the proper functioning of the contest, and 11.7% of respondents found that they not agreed from the suggestion 1, as shown in the Figure 4-5.

Figure (4-5): Respondents’ opinions about Limitation and Suggestion 1

* **Limitation 2:** 79.4% of the respondents found that they agreed that the client may ignore the need to attach important files to the contest, which may lead to design errors, and 11.7% of respondents found that they not agreed with limitation 2.
* **Suggestion 2**: 67.6% of the respondents found that they agreed with set constraints on the client when writing the contest brief to ensure they add all the information and details related to the contest in terms of the objectives and the expected final result from the contest and that they attach the files related to the design, and 11.8% of respondents found that they not agreed with suggestion 2, as shown in Figure 4-6.

Figure (4-6): Respondents’ opinions about Limitation and Suggestion 2

* **Limitation 3:** 73.5% of respondents agreed found that manually selecting a project manager may take a significant amount of time away from the contest, and 8.8% of respondents found that they not agreed with limitation 3.
* **Suggestion 3:** 67.6% of respondents responded agreed with the automatically select the project manager based on the type of contest, and 8.8% of respondents found that they not agreed with suggestion 3, as shown in Figure 4-7.

Figure (4-7): Respondents’ opinions about Limitation and Suggestion 3

* **Limitation 4:** 67.6% of respondents found that they agreed that a project manager who is busy with too many contests may be selected, and therefore, the project manager's schedule would not fit the new contest and thus may affect the effectiveness of the contest, and 5.9% of respondents found that they not agreed with limitation 4.
* **Suggestion 4**: 58.8% of respondents found that they agreed with set constraints on capacity related to the association with contests on the project manager, and 8.8% of respondents found that they not agreed with suggestion 4, as shown in Figure 4-8.

Figure (4-8): Respondents’ opinions about Limitation and Suggestion 4

* **Limitation 5:** 76.5% of respondents found that they agreed that a project manager may be selected for a contest that may not be in his or her fields of interest or competence, and 5.8% of respondents found that they not agreed with limitation 5.
* **Suggestion 5:** 55.9% agree to categorize the contest by making a list of contest types by field and competency and to ensure that the project manager has a background related to the type of contest to help validate the contest efficacy, and 5.8% of respondents found that they not agreed with suggestion 5, as shown in Figure 4-9.

Figure (4-9): Respondents’ opinions about Limitation and Suggestion 5

* **Limitation 6:** 79.4% of respondents found that they agreed that there is a lack of multiple communication channels available to send contest announcement messages to designers, thus resulting in a potential missed opportunity for different designers to participate in the contest, and no one of respondents found that they not agreed with limitation 6.
* **Suggestion 6:** 67.7% of respondents found that they agree to send messages or notifications on social media accounts or email regarding a new contest, and no one of respondents found that they not agreed with suggestion 6, as shown in Figure 4-10.

Figure (4-10): Respondents’ opinions about Limitation and Suggestion 6

**Part two: Performing designs and following up on contest design activities**

* **Limitation 7:** 58.9% of the respondents found that they agreed that the availability of designers on the platform is not considered so there is no distinction made between active and inactive designers when they are invited to participate in the contest. This may lead to a lack of diversity in designs because not all different designers have been invited to participate, and this may lead to the loss of the opportunity to participate new active designers, and 20.6% of respondents found that they not agreed with limitation 7.
* **Suggestion 7:** 41.1% of the respondents found that they agree with setting a constraint to select active designers only, and 23.5% of respondents found that they not agreed with suggestion 7, as shown in Figure 4-11.

Figure (4-11): Respondents’ opinions about Limitation and Suggestion 7

* **Limitation 8:** 41.2% of the respondents found that they agreed with the new designers may not be selected because they did not participate in any contests, and 11.7% of respondents found that they not agreed with limitation 8.
* **Suggestion 8:** 53% agree to reserve some invitations for new designers to participate in the contest, and 11.8% of respondents found that they not agreed with suggestion 8, as shown in Figure 4-12.

Figure (4-12): Respondents’ opinions about Limitation and Suggestion 8

* **Limitation 9:** 52.9% of respondents found that they agreed that it may be difficult for the project manager to verify some designers because new designers do not have a design history or because there is no history of the designers in the contest field, and 5.9% of respondents found that they not agreed with limitation 9.
* **Suggestions 9:** 50% agree that it is good for a designer who wants to participate in a contest or new designers who do not have a history to submit a sample of similar designs so that the project manager can verify their skill level, and 11.8% of respondents found that they not agreed with suggestion 9, as shown in Figure 4-13.

Figure (4-13): Respondents’ opinions about Limitation and Suggestion 9

* **Limitation 10:** 52.9% of respondents found that they agreed that designers may not check their email for contest notifications, and 8.8% of respondents found that they not agreed with limitation 10.
* **Suggestion 10:** 35.3% agree that it is good to message designers through different communication channels, such as WhatsApp or text message, and 5.9% of respondents found that they not agreed with suggestion 10, as shown in Figure 4-14.

Figure (4-14): Respondents’ opinions about Limitation and Suggestion 10

* **Limitation 11:** 47.1% of respondents found that they agreed that the time difference between countries is not considered when sending invitations to designers, and 14.7% of respondents found that they not agreed with limitation 11.
* **Suggestion 11:** 32.3% agree that it is good to consider the time difference when sending invitations to designers; the project manager should check the time before sending invitations to designers, and an extra day may be added to the invitation if there is a significant difference in time zones before the start of a contest, and 11.8% of respondents found that they not agreed with suggestion 11, as shown in Figure 4-15.

Figure (4-15): Respondents’ opinions about Limitation and Suggestion 11

* **Limitation 12:** 61.7% of respondents found that they agreed that the platform does not remind designers about the need to agree to the Approval Agreement, and 11.8% of respondents found that they not agreed with limitation 12.
* **Suggestion 12:** 38.3% agree that it is good for designers to be reminded that the approval agreement has not been completed and that he or she is currently not considered a participant in the contest, and 14.7% of respondents found that they not agreed with suggestion 12, as shown in Figure 4-16.

Figure (4-16): Respondents’ opinions about Limitation and Suggestion 12

* **Limitation 13:** Most respondents 63.4% of the respondents agree that there is a lack of mechanisms to monitor contest progress and designers who do not submit designs to the contest, and 7.3% of respondents found that they not agreed with  
  limitation 13.
* **Suggestion 13:** 58.8% agree that it is t is good to send notifications to designers about the progress of the contest or notify inactive designers to fulfil their obligations to submit designs, and 9.8% of respondents found that they not agreed with suggestion 13, as shown in Figure 4-17.

Figure (4-17): Respondents’ opinions about Limitation and Suggestion 13

* **Limitation 14:** 41.4% of respondents found that they agreed that the validation process may take a long time, which may waste designers' time and effort, and 9.7% of respondents found that they not agreed with limitation 14.
* **Suggestion 14:** 43.9% agree to provide support by notifying the client to validate the designs as soon as the project manager receives the designs from designers, and 4.9% of respondents found that they not agreed with suggestion 14, as shown in Figure 4-18.

Figure (4-18): Respondents’ opinions about Limitation and Suggestion 14

* **Limitation 15:** 17.1% of respondents found that they agreed that the client eliminates some designs during the evaluation phase when they are evaluating the designs without giving feedback, which in turn may result in the wasted designer effort, and 17.1% of respondents found that they not agreed with limitation 15.
* **Suggestion 15:** 14.6% of respondents found that they agreed to set constraints and obligations on the client to oblige him or her to provide feedback to the designers in the first stages of the contest in addition to browsing all the designs submitted in the first stage, and 7.3% of respondents found that they not agreed with suggestion 15, as shown in Figure 4-19.

Figure (4-19): Respondents’ opinions about Limitation and Suggestion 15

* **Limitation 16:** The majority of respondents answered agreed with 51.2% that the clients do not provide designers with direct feedback nor communication with designers during the contest period, and 4.9% of respondents found that they not agreed with limitation 16.
* **Suggestion 16:** 53.7% agree to provide a mechanism for communication through the platform that enables clients to provide feedback to the designers during the contest, and no one of respondents found that they not agreed with suggestion 16, as shown in Figure 4-20.

Figure (4-20): Respondents’ opinions about Limitation and Suggestion 16

* **Limitation 17:** 39.1% of respondents found that they agreed that there is no mechanism to enable clients to request to combine both designs to produce a better design, and no one of respondents found that they not agreed with limitation 17.
* **Suggestion 17:** 34.1% of respondents found that they agreed provide a mechanism during the feedback phase, and 4.9% of respondents found that they not agreed with suggestion 17, as shown in Figures 4-21.

Figure (4-21): Respondents’ opinions about Limitation and Suggestion 17

4.4.4 Results of the statistical analysis

The descriptive statistical analysis of the average and the start rank is based on the highest average was used to find out the respondents' opinions regarding the limitations and suggestions in the stages of the design contest.Respondents' respond to the limitations and suggestions using a five-point Likert scale: 1) Strongly Disagree, 2) Disagree, 3) Neutral, 4) Agree, and 5) Strongly Agree, as shown in table 4-2 [94].

Table (4-2): Qualitative Interpretation of 5-Point Likert Scale Measurements

|  |  |  |  |
| --- | --- | --- | --- |
| **Likert-Scale Description** | **Likert-Scale** | **Likert Scale interval** | **Interpretation** |
| Strongly disagree | 1 | 1.00 - 1.80 | Negative |
| Disagree | 2 | 1.81 - 2.60 | Negative |
| Neutral/Uncertain | 3 | 2.61 - 3.40 | Moderate |
| Agree | 4 | 3.41 - 4.20 | Positive |
| Strongly agree | 5 | 4.21 - 5.00 | Positive |

**Part one: Creating design contest**

It was applied to the complete answers to the first part of the questionnaire to see if each creating design contests activity needed coordination. Most of the respondents agreed that they faced the limitations mentioned at the start of the design contest stage where the unavailability of a form that includes all the information related to the contest that will be conducted may lead to a misunderstanding of the requirements of the contest with an average of 4.09, followed 3.91 that there is a project manager may be selected for a contest that may not be in his or her fields of interest or competence, and 3.88 that there is a lack of multiple communication channels available to send contest announcement messages to designers, thus resulting in a potential missed opportunity for different designers to participate in the contest. Table 4-3 shows a summary of the limitations of the start and create design contest.

Table (4-3): Statistical results for the Limitation of creating a design contest

| **Limitations** | **Average** | **Rank** | **Interpretation** |
| --- | --- | --- | --- |
| 1-The unavailability of a form that includes all the information related to the contest that will be conducted may lead to a misunderstanding of the requirements of the contest. | 4.09 | 1 | Positive |
| 2-The client may ignore the need to attach important files to the contest, which may lead to design errors. | 3.76 | 5 | Positive |
| 3-Manually selecting a project manager may take a significant amount of time away from the contest. | 3.71 | 6 | Positive |
| 4-A project manager who is busy with too many contests may be selected, and therefore, the project manager's schedule would not fit the new contest and thus may affect the effectiveness of the contest. | 3.82 | 4 | Positive |
| 5-A project manager may be selected for a contest that may not be in his or her fields of interest or competence. | 3.91 | 2 | Positive |
| 6-There is a lack of multiple communication channels available to send contest announcement messages to designers, thus resulting in a potential missed opportunity for different designers to participate in the contest. | 3.88 | 3 | Positive |

Table 4-4 shows Suggestions of the creating design contest activities in CSD that participants rated highly as being very important for coordination. Most respondents agreed on the need to provides a detailed form that includes all the requirements to ensure the proper functioning of the contest (e.g., client expectations, design preferred colors, design plans) with an average of 3.88, followed 3.79 for to send messages or notifications on social media accounts or email regarding a new contest, and 3.74 to set constraints on capacity related to the association with contests on the project manager.

Table (4-4): Statistical results for the Suggestion of creating a design contest

| **Suggestions** | **Average** | **Rank** | **Interpretation** |
| --- | --- | --- | --- |
| 1-It is good that a platform provides a detailed form that includes all the requirements to ensure the proper functioning of the contest (e.g., client expectations, design preferred colors, design plans). | 3.88 | 1 | Positive |
| 2-It is good to set constraints on the client when writing the contest brief to ensure they add all the information and details related to the contest in terms of the objectives and the expected final result from the contest and that they attach the files. | 3.68 | 4 | Positive |
| 3-It is good to automatically select the project manager based on the type of contest. | 3.62 | 6 | Positive |
| 4-It is good to set constraints on capacity related to the association with contests on the project manager. | 3.74 | 3 | Positive |
| 5-It is good to categorize the contest by making a list of contest types by field and competency and to ensure that the project manager has a background related to the type of contest to help validate the contest efficiently. | 3.65 | 5 | Positive |
| 6-It is good to send messages or notifications on social media accounts or email regarding a new contest. | 3.79 | 2 | Positive |

**Part two: Performing designs and following up on contest design activities**

Finally, statistical analysis was applied to the complete answers to the second part of the questionnaire. Most respondents agreed that there is a lack of mechanisms to monitor contest progress and designers who do not submit designs to the contest with an average of 3.77, followed 3.68 clients do not provide designers with direct feedback nor communication with designers during the contest period, followed 3.65 it may be difficult for the project manager to verify some designers because new designers do not have a design history or because there is no history of the designers in the contest field. Table 4-5 shows a summary of the limitations of performing designs and following up on contest design activities.

Table (4-5): Statistical results for the limitation of performing designs and following up on   
contest design activities

| **Limitations** | **Average** | **Rank** | **Interpretation** |
| --- | --- | --- | --- |
| 7-The availability of designers on the platform is not considered so there is no distinction made between active and inactive designers when they are invited to participate in the contest. This may lead to a lack of diversity in designs because not all different designers who have been invited participate, and this may lead to the loss of the opportunity to participate for new active designers. | 3.52 | 5 | Positive |
| 8-New designers may not be selected because they did not participate in any contests. | 3.38 | 7 | Positive |
| 9-It may be difficult for the project manager to verify some designers because new designers do not have a design history or because there is no history of the designers in the contest field. | 3.65 | 3 | Positive |
| 10-Designers may not check their email for contest notifications. | 3.53 | 4 | Positive |
| 11-The time difference between countries is not considered when sending invitations to designers. | 3.37 | 8 | Moderate |
| 12-The platform does not remind designers about the need to agree to the Approval Agreement (the agreement through which the designer reads the terms of the contest and then agrees to them to thus be considered a participant in the contest). | 3.52 | 5 | Positive |
| 13-There is a lack of mechanisms to monitor contest progress and designers who do not submit designs to the contest. | 3.77 | 1 | Positive |
| 14-The validation process takes place in the final stages of the contest. Thus, the validation process may take a long time, which may waste the designers' time and effort. | 3.47 | 6 | Positive |
| 15-The client eliminates some designs during the evaluation phase when they are evaluating the designs without giving feedback, which in turn may result in wasted designer effort. | 3.32 | 5 | Moderate |
| 16-Clients do not provide designers with direct feedback nor communicate with designers during the contest period. This may result in poor designs | 3.68 | 2 | Positive |
| 17-It is possible that two designs are submitted, but neither can be accepted in their current states. Currently, there is no mechanism to enable clients to request to combine both designs to produce a better design. | 3.53 | 4 | Positive |

Table 4-6 shows a summary of the activities and the process of selecting and appointing participants in the contest that participants rated highly as very important to coordination. Most respondents agreed that it would be good to provide a mechanism for communication through the platform that enables clients to provide feedback to the designers during the contest with an average of 3.71, followed 3.65 that it is good to send notifications to designers about the progress of the contest or notify inactive designers to fulfill their obligation to submit designs; otherwise, they must be withdrawn to allow new designers to join the contest, followed 3.56 that to to reserve some invitations for new designers to participate in the contest.

Table (4-6): Statistical results for the Suggestion of the Start of contest activities and the process of selecting and appointing participants in the contest

| **Suggestions** | **Average** | **Rank** | **Interpretation** |
| --- | --- | --- | --- |
| 7-It may be necessary to set a constraint to select active designers only. | 3.27 | 8 | Moderate |
| 8-It is good to reserve some invitations for new designers to participate in the contest. | 3.56 | 3 | Positive |
| 9-It is good for a designer who wants to participate in a contest or new designers who do not have a history to submit a sample of similar designs so that the project manager can verify their skill level. | 3.41 | 5 | Positive |
| 10-It is good to message designers through different communication channels, such as WhatsApp or text message. | 3.32 | 7 | Moderate |
| 11-It is good to consider the time difference when sending invitations to designers; the project manager should check the time before sending invitations to designers, and an extra day may be added to the invitation if there is a significant difference in time zones before the start of a contest. | 3.26 | 9 | Moderate |
| 12-It is good for designers to be reminded that the approval agreement has not been completed and that he or she is currently not considered a participant in the contest. Also, it is good to provide automated support to respond to the approval agreement through notifications. | 3.35 | 6 | Moderate |
| 13-It is good to send notifications to designers about the progress of the contest or notify inactive designers to fulfill their obligation to submit designs; otherwise, they must be withdrawn to allow new designers to join the contest. | 3.65 | 2 | Positive |
| 14-It is good to provide support by notifying the client to validate the designs as soon as the project manager receives the designs from designers. | 3.56 | 3 | Positive |
| 15-It is good to set constraints and obligations on the client to oblige him or her to provide feedback to the designers in the first stages of the contest in addition to browsing all the designs submitted in the first stage | 3.35 | 6 | Moderate |
| 16-It would be good to provide a mechanism for communication through the platform that enables clients to provide feedback to the designers during the contest. | 3.71 | 1 | Positive |
| 17-It is good to provide a mechanism during the feedback phase that enables the client to combine two designs that complement each other. | 3.47 | 4 | Positive |

To summarize the survey findings, it is clear that a large number of participants agreed on the proposed coordination support for these CSD activities, although not all of them did. This is normal due to their different roles, responsibilities, and needs. However, the goal of this evaluation is to make sure that these CSD activities would provide more coordination support for CSD processes.

4.4.5 Evaluation summary

The online surveys above were conducted to understand how CSD participants see the current platform as supporting CSD activities, which are the most important activities underpinning the contest that need improvement, and to what extent they agree with the proposed support for these activities. In general, the survey showed that all the limitations identified are realistic, however, the most important limitations with the highest percentage are:

L1- The unavailability of a form that includes all the information related to the contest that will be conducted may lead to a misunderstanding of the requirements of the contest.

L5- A project manager may be selected for a contest that may not be in his or her fields of interest or competence.

L6- There is a lack of multiple communication channels available to send contest announcement messages to designers, thus resulting in a potential missed opportunity for different designers to participate in the contest.

L13- There is a lack of mechanisms to monitor contest progress and designers who do not submit designs to the contest.

L16- Clients do not provide designers with direct feedback nor communicate with designers during the contest period. This may result in poor designs.

Similarly, the survey shows that all the proposed suggestions seem valid, nevertheless, however, the most important suggestions with the highest percentage were:

S1-It is good that a platform provides a detailed form that includes all the requirements to  
ensure the proper functioning of the contest (e.g., client expectations, design preferred colors, design plans).

S6-It is good to send messages or notifications on social media accounts or email regarding a new contest.

S13-It is good to send notifications to designers about the progress of the contest or notify inactive designers to fulfill their obligation to submit designs; otherwise, they must be withdrawn to allow new designers to join the contest.

S16-It would be good to provide a mechanism for communication through the platform that enables clients to provide feedback to the designers during the contest.

Appendix A:   
A Survey

**To Whom It May Concern:**

This questionnaire is part of a survey aimed to address the limitations facing participants in crowdsourcing software design platforms and to study potential mechanisms for coordination between participants in these platforms.

We would like to ask you to please complete this questionnaire. The data will be treated confidentially, and material and information will not be provided to third parties. When processing this survey, you and your company will be guaranteed anonymity. This survey will take about a few minutes of your time. Thank you very much for your participation.

**Section One. Please provide your information regarding participation in crowdsourcing software design platforms. This will help in evaluating the data from this study.** (In the question below, please tick one appropriate box.**(**

**1. What is your region of residence?**

€ Asia € North Africa € Arabian Island € Middle East

€ Europe € North America € South America € Caribbean

€ Central America € Central America € Sub-Saharan Africa € Oceania

**2. I am currently a**

€ professional software designer € Hobbyist € Other.....................

**3. How many times have you participated in crowdsourcing software design platforms?**

€ Less than 5 times € Between 5 to 10 times € More than 10 times

**4. Which crowdsourcing software design platforms have you used?**

**)**You can choose more than one option.**(**

€ 99 Designs € DesignCrowd € Designhill € Crowdspring

€ Crowd site € Freelancer € Upwork € Design Contest

€ Choosa € Hatchwise € Fiverr € Other……………

**5. What is your work role in crowdsourcing software design platforms?**

€ Project Manager € Designer € Client

**Section Two: Limitations and suggestions affecting contest coordination in crowdsourcing software design platforms**

Note:

**a: represents the limitation**

**b: represents the suggestion**

**Part 1: Questions related to creating a design contest**

|  |  | **Strongly Disagree** | **Disagree** | **Neutral** | **Agree** | **Strongly Agree** |
| --- | --- | --- | --- | --- | --- | --- |
| 1-a | The unavailability of a form that includes all the information related to the contest that will be conducted may lead to a misunderstanding of the requirements of the contest. | 1 | 2 | 3 | 4 | 5 |
| 1-b | To resolve the previous limitation, it is good that a platform provides a detailed form that includes all the requirements to ensure the proper functioning of the contest (e.g., client expectations, design preferred colors, design plans). | **1** | **2** | **3** | **4** | **5** |
| 2-a | The client may ignore the need to attach important files to the contest, which may lead to design errors. | 1 | 2 | 3 | 4 | 5 |
| 2-b | To resolve the previous limitation, it is good to set constraints on the client when writing the contest brief to ensure they add all the information and details related to the contest in terms of the objectives and the expected final result from the contest and that they attach the files related to the design. | 1 | 2 | 3 | 4 | 5 |
| 3-a | Manually selecting a project manager may take a significant amount of time away from the contest. | 1 | 2 | 3 | 4 | 5 |
| 3-b | To resolve the previous limitation, it is good to automatically select the project manager based on the type of contest. | 1 | 2 | 3 | 4 | 5 |
| 4-a | A project manager who is busy with too many contests may be selected, and therefore, the project manager's schedule would not fit the new contest and thus may affect the effectiveness of the contest. | 1 | 2 | 3 | 4 | 5 |
| 4-b | To resolve the previous limitation, it is good to set constraints on capacity related to the association with contests on the project manager. | 1 | 2 | 3 | 4 | 5 |
| 5-a | A project manager may be selected for a contest that may not be in his or her fields of interest or competence. | 1 | 2 | 3 | 4 | 5 |
| 5-b | To resolve the previous limitation, it is good to categorize the contest by making a list of contest types by field and competency and to ensure that the project manager has a background related to the type of contest to help validate the contest efficiently. | 1 | 2 | 3 | 4 | 5 |
| 6-a | There is a lack of multiple communication channels available to send contest announcement messages to designers, thus resulting in a potential missed opportunity for different designers to participate in the contest. | 1 | 2 | 3 | 4 | 5 |
| 6-b | To resolve the previous limitation, it is good to send messages or notifications on social media accounts or email regarding a new contest. | 1 | 2 | 3 | 4 | 5 |

7-Would you have any other comments you want to add about this part (creating a design contest)?

€ Yes € No

If yes, please write your comments here: .............................................................

**Part 2: Questions related to the Performing designs and following up on contest design activities**

|  |  | **Strongly Disagree** | **Disagree** | **Neutral** | **Agree** | **Strongly Agree** |
| --- | --- | --- | --- | --- | --- | --- |
| 1-a | The availability of designers on the platform is not considered so there is no distinction made between active and inactive designers when they are invited to participate in the contest. This may lead to a lack of diversity in designs because not all different designers who have been invited participate, and this may lead to the loss of the opportunity to participate for new active designers. | 1 | 2 | 3 | 4 | 5 |
| 1-b | To resolve the previous limitation, it may be necessary to set a constraint to select active designers only. | 1 | 2 | 3 | 4 | 5 |
| 2-a | New designers may not be selected because they did not participate in any contests. | 1 | 2 | 3 | 4 | 5 |
| 2-b | To resolve the previous limitation, it is good to reserve some invitations for new designers to participate in the contest. | 1 | 2 | 3 | 4 | 5 |
| 3-a | It may be difficult for the project manager to verify some designers because new designers do not have a design history or because there is no history of the designers in the contest field. | 1 | 2 | 3 | 4 | 5 |
| 3-b | To resolve the previous limitation, it is good for a designer who wants to participate in a contest or new designers who do not have a history to submit a sample of similar designs so that the project manager can verify their skill level. | 1 | 2 | 3 | 4 | 5 |
| 4-a | Designers may not check their email for contest notifications. | 1 | 2 | 3 | 4 | 5 |
| 4-b | To resolve the previous limitation, it is good to message designers through different communication channels, such as WhatsApp or text message. | 1 | 2 | 3 | 4 | 5 |
| 5-a | The time difference between countries is not considered when sending invitations to designers. | 1 | 2 | 3 | 4 | 5 |
| 5-b | To resolve the previous limitation, it is good to consider the time difference when sending invitations to designers; the project manager should check the time before sending invitations to designers, and an extra day may be added to the invitation if there is a significant difference in time zones before the start of a contest. | 1 | 2 | 3 | 4 | 5 |
| 6-a | The platform does not remind designers about the need to agree to the Approval Agreement (the agreement through which the designer reads the terms of the contest and then agrees to them to thus be considered a participant in the contest). | 1 | 2 | 3 | 4 | 5 |
| 6-b | To resolve the previous limitation, it is good for designers to be reminded that the approval agreement has not been completed and that he or she is currently not considered a participant in the contest. Also, it is good to provide automated support to respond to the approval agreement through notifications or multiple communication channels, such as WhatsApp or text message. | 1 | 2 | 3 | 4 | 5 |
| 7-a | There is a lack of mechanisms to monitor contest progress and designers who do not submit designs to the contest. | 1 | 2 | 3 | 4 | 5 |
| 7-b | To resolve the previous limitation, it is good to send notifications to designers about the progress of the contest or notify inactive designers to fulfill their obligation to submit designs; otherwise, they must be withdrawn to allow new designers to join the contest. | 1 | 2 | 3 | 4 | 5 |
| 8-a | The validation process takes place in the final stages of the contest. Thus, the validation process may take a long time, which may waste the designers' time and effort. | 1 | 2 | 3 | 4 | 5 |
| 8-b | To resolve the previous limitation, it is good to provide support by notifying the client to validate the designs as soon as the project manager receives the designs from designers. | 1 | 2 | 3 | 4 | 5 |
| 9-a | The client eliminates some designs during the evaluation phase when they are evaluating the designs without giving feedback, which in turn may result in wasted designer effort. | 1 | 2 | 3 | 4 | 5 |
| 9-b | To resolve the previous limitation, it is good to set constraints and obligations on the client to oblige him or her to provide feedback to the designers in the first stages of the contest in addition to browsing all the designs submitted in the first stage | 1 | 2 | 3 | 4 | 5 |
| 10-a | Clients do not provide designers with direct feedback nor communicate with designers during the contest period. This may result in poor designs. Additionally, since clients might request substantial modifications at a late stage, it may take considerable time and effort from the designer. | 1 | 2 | 3 | 4 | 5 |
| 10-b | To resolve the previous limitation, it would be good to provide a mechanism for communication through the platform that enables clients to provide feedback to the designers during the contest. | 1 | 2 | 3 | 4 | 5 |
| 11-a | It is possible that two designs are submitted, but neither can be accepted in their current states. Currently, there is no mechanism to enable clients to request to combine both designs to produce a better design. | 1 | 2 | 3 | 4 | 5 |
| 11-b | To resolve this previous limitation, it is good to provide a mechanism during the feedback phase that enables the client to combine two designs that complement each other. | 1 | 2 | 3 | 4 | 5 |

7- Would you have any other comments you want to add about this part (Performing designs and following up on contest design activities)?

€ Yes € No

If yes, please write your comments here: .............................................................

**-Would you like to receive an email when I publish the results of the questionnaire?**

€ Yes € No

If yes, what is your email address.............................................................

**-Would you want to be interviewed on the subject of the questionnaire?**

€ Yes € No

If yes, what are your email address.............................................................

**-This is the end of the questionnaire. I thank you very much for your cooperation in this research. If you have any questions or comments, please leave them below:**

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