RESEARCH ARTICLE OPEN ACCESS

Expectations for Electronic Debate Platforms as a Function of Application Domain

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ABSTRACT
Electronic debate (or commenting) platforms are used with many types of online applications, as a way to engage the users or to provide enhancements, e.g., based on some type of collaborative filtering [1], [2]. The applications enhanced with such debate platforms range widely : news, products, sport, religion, politics, etc. Therefore, the emerging question is whether it is possible to make one electronic debate mechanism good for all applications, and whether the studies on the success of a debate mechanism in one domain do automatically apply to other application domains. Here we compare two traditional application domains of electronic debate platforms: product evaluation and commented news. We exploit the fact that most users are very familiar with both types of such applications, and therefore surveys can be designed to gauge reliably subtle differences between expectations and properties of these domains. Based on over 1000 responses to surveys described here, we are able to report statistically significant differences between the user behavior and expectations in the studied domains.

Keywords **-** Application Domains for Debates, Evaluation of the Impact of Threading Models, Methodology, and Results

I. INTRODUCTION

Even before Internet users were heavily engaged in social networks like Facebook and Twitter, many of them were attracted by social applications, such as commented news, that drew significant participation and activism in the early 2000s [3]–[5]. Various other applications of electronic debates emerged in the same period of time, such as product reviews and evaluation used for collaborative filtering on online stores like Amazon or Recommendation sites like Yelp. While these may be some of the most transitionally used applications of debates, a large number of other applications appeared to varied domains such as: political, religious, science, and education reviews [6]. Various foundations support open software development for supporting comments and debates to be associated to blogs and online news channels, as a way to promoting civil engagement and a civil society [7]. Given the effort spent by developers and foundations to build electronic debate mechanisms, the question arises on whether one platform fits it all, or it has to be adjusted to the actual domain.

In this research we compare properties and expectations user have from two different and well established domains of application for electronic debates. In particular, we use surveys to investigate the expectations and behavior of users with respect to product evaluation comments, and to commented news. The results of these surveys are used to detect relevant differences between the studied domains.

II. BACKGROUND

Open electronic debate platforms can be used with application domains, from politics to entertainment, e.g. Slashdot [5]. News articles or product descriptions can each be associated with a forum. Some studies have focused on the impact of online comments as being open news by themselves [5]. We address the issue of management for such open electronic debate platforms. Namely, of the impact of their organization (e.g., threading model) on the quality of user experience (relevance, redundancy, diversity, importance, clarity, efficiency). We are investigating the user expectation and beliefs concerning platforms for comments concerning products evaluations and news articles. In certain decision making fora (such as parliaments, or electronically in DirectDemocracyP2P), a debate focuses on a clear motion (i.e., proposal of a decision) that is relevant to a given organization. Users can vote on it with justifications [1], [2], [8]. We differentiate between debates and brainstorming sessions, namely where a question and its possible answers were not yet crystallized. The regular discussions commonly available with blogs and electronic news are classified as brainstorming sessions, while discussions associated with common polls, news reviews and petition drives platforms are classified as debates. Understanding of the given problem is improved as the user gets acquaintance with the relevant justification provided by other participants. An essential ingredient comes from the

correct evaluation of the importance of a justification as yielded by the number of participants supporting it. Another important factor in catalyzing the understanding of a justification is the intensity with which each participant supports that justification. In electronic debates, users can support somebody else's justification as an alternative to

Providing his/her own justification. Justifications with large support can be favored by viewers, as they may better represent the opinion of the group. A further mechanism to help users locate relevant justifications is based on threading. Namely, new justifications can point to old justifications that they claim to refute or enhance. Thereby people visualizing old justifications are notified of the presence of the refutation and enhancement claims. In a DDP2P application, all debates and arguments with news have to be related to a motion in a given organization. The user can vote on any with only one justification and he/she can post news linked to motions or justifications [9], [10]. The mechanism of disseminating motions can be used to help the community converge towards enhanced versions of a motion. Discovery of better versions of a motion can be boosted by an appropriate threading mechanism, with each new motion referring back to previous motions on which it claims to improve. These references create a thread that can be traversed by a user, or can be used by automatic reasoning tools helping users in locating promising motions. Namely, if a majority of peer members disagree with a motion that the user has earlier believed to be good, he may reconsider his position on the motion. The peers could have potentially discovered problems with that motion, problems communicated via justifications that can make the constituent withdraw his/her support. Withdrawing support for an unpopular motion will save the time of the other constituents who will be less tempted to spend time reading it, and this will help the organization to save the resources needed to move on the proposal and organize an official ballot [10], [11]. Common alternatives when voting on a motion are Support, Oppose, and Abstain. However, each submitted motion can be customized to allow for any set of possible reactions as appreciated by the author of the motion. Poor choices are supposed to be correctable by enhancements. As previously explained, the understanding of the opinion of one's peers can be further improved by enabling the submitter of votes to associate a justification of their support or opposition to the motion. Threading and thumbs (common technical term) in fora are used for training an automatic moderator [12].

III. METHODOLOGY

There are several application domains for debates, function of the addressed topic:

- Online Products: Online products sellers asking customers to leave a review/comment on their site exist.
- Online News: Readers of the online news posting comments on a news article.
- Religion: People sharing information about their religious beliefs.
- Science: People raising concerns related to the significance and correctness of scientific issues.
- Politics: People sharing information about their political beliefs.
- Sports: Comments and arguments around news concerning sports.

We used surveys to extract the properties of two type of these domains of debates, and to see the differences in their rules as expected and deemed appropriate by users.

A. Evaluation of the Impact of Threading Models on Electronic Debate

We conducted online studies from March to November 2015 in which we presented a survey to participants and asked them to answer its questions using the Survey Monkey platform. In our study we use the technique of submitting the questions in an online survey to collect the data from online users. We designed and distributed questionnaires in a couple of languages.

B. Study Questions:

Study questions contained three groups [13]:

• Participation Agreement

The first question in our survey is a participation agreement. Participation is voluntary.

• General Information:

We collected general information like gender, age range, secondary language, and level of education to evaluate our survey population.

- **Understanding Questions:**

Participants answered a chain of multiple choice questions to determine the factors that attract the users while reading or taping reviews (comments/threads) for any online news.

C. Goals of Our Survey :

The purpose of our surveys is to:

- Evaluate how comments for product evaluation differ from online news.
- Gather suggestion of how to improve user interfaces for corresponding debate applications.

IV. COMPARISON AND RESULTS

We had designed and distributed two surveys with same types of questions for two domains of electronic debate which were Online Products and

Online news as shown in Figure 1. We used the surveys technique to compare between those types of domain by finding the similarities and differences of the choices of each question of these surveys.

A. Participation Agreement (Institutional Review Board (IRB))

The first question in our surveys for both domains (products and news) asked the user to accept a participation agreement.

We asked: Do you agree to the above terms? By clicking Yes, you consent that you are willing to answer the questions in this survey. **Analysis:** Most of the participants accepted to answer the questions in our survey. This was an easy question because this question confirmed the participation in our survey.

Q/Compaering		Product	News	Similarity	Difference
Gender	M	0.79472	0.82741	0.960501	0.039498
	F	0.20527	0.172588	0.840787	0.159212
Age	Less than 2	0.02912	0.040609	0.717233	0.282766
	Between 2	0.4563	0.467005	0.977100	0.022899
	Over than	0.51456	0.49238	0.95690	0.04309
Language	English	0.87794	0.812183	0.925092	0.074907
	Chinese	0.00138	0.005076	0.273231	0.726768
	French	0.00832	0.005076	0.609983	0.390016
	Spanish	0.01664	0.02284	0.728617	0.271382
	Other	0.09570	0.154823	0.618136	0.381869
Educatior	High Schoc	0.1303	0.14213	0.917277	0.082722
	Bachelor	0.49653	0.489847	0.98653	0.01346
	Master	0.29680	0.271573	0.914974	0.085025
	Ph.D.	0.0762	0.096446	0.790933	0.209066
Reading_	Usually	0.50069	0.203045	0.405528	0.594471
	Sometimes	0.49930	0.796954	0.626518	0.373481
Type_of_	Brief revie	0.53952	0.436548	0.809129	0.190870
	Long revie	0.37031	0.223350	0.603129	0.396870
	Both	0.09015	0.340101	0.265075	0.734924
Reviews_ Before	5 or less	0.37309	0.322335	0.86395	0.13604
	10 or less	0.36338	0.431474	0.842196	0.157803
	More than	0.20804	0.246192	0.845046	0.154953
Focus_or ve	Positive	0.11789	0.157360	0.749183	0.250816
	Negative	0.16504	0.147208	0.891908	0.108091
	Both	0.71705	0.695431	0.969837	0.030162
Showing_No _justification	Yes	0.55339	0.411161	0.74298	0.25701
	No	0.44660	0.588833	0.758453	0.241546
Attention	Positive w	0.22052	0.294416	0.749031	0.250968
	Negative w	0.15811	0.078680	0.497617	0.502382
	Both	0.62135	0.626903	0.991156	0.008843
Expending ds	All the tim	0.05547	0.063451	0.874341	0.125658
	Sometimes	0.47156	0.398477	0.845005	0.154994
	Never	0.4729	0.538073	0.878980	0.121019
User_Regi nguage	All the tim	0.1414	0.11928	0.843211	0.156788
	Sometimes	0.53398	0.515228	0.964882	0.035117
	Never	0.32454	0.365483	0.888002	0.111997
Supporting nsulation	All the tim	0.03328	0.038071	0.874341	0.125658
	Sometimes	0.28294	0.408629	0.692413	0.307586
	Never	0.68377	0.553299	0.809186	0.190813
Benefit_of ads	Argumenta	0.37170	0.345177	0.928630	0.071369
	Positive	0.40360	0.302030	0.748329	0.251670
	Negative	0.13453	0.352791	0.381344	0.618655
Structure_ atforms	Structured	0.56865	0.581218	0.978383	0.021616
	Unstructur	0.43134	0.418781	0.97087	0.029126

Figure 1: Result of Similarities and Differences Between our Two studies Domains

B. General Information:

In our surveys, there were some questions about general information. Every question had to fulfill the purpose of the study. These questions are about: Gender, Age, and Education.

1) Gender: This question aimed to know who were more interesting in the debate, men or women. This question will help to structure debate user interfaces (DDP2P applications) according to the interaction of humans.

We asked: What is your gender?

Key Finding:

- First Survey (Online Products)
  - 78.5 percent of participants were male.
  - 21.5 percent of participants were female.
- Second Survey (Online News)
  - 81.3 percent of participants were male.
  - 18.7 percent of participants were female.

• **Similarities between these two surveys** (Online Products and Online News) in this question.

- **Male:** The similarity between online products and online news was 96.05 percent for first chose of gender question which was male.
- **Female:** The similarity between online products and online news was 84.07 percent for second chose of gender question which was female.

• **Differences between these two surveys** (Online Products and Online News) in this question.

- **Male**: The difference between online products and online news was 3.95 percent for first chose of gender question which was male.
- **Female**: The difference between online products and online news was 15.93 percent for second chose of gender question which was female.

- **Analysis**:

Results of this question were similar for both domains of the debate (Online Products and Online news).

Both gender of participants were interesting to involve (male and female) for both studied domains of electronic debates as shown in Figure 2. This question will lead to focusing on both gender, by using ads, news, topics, etc., in a debate user interface (DDP2P applications), in order to attract them into successful debates.

		Similarity	Difference
Gender	M	0.960501348	0.03949865
	F	0.840787484	0.15921252

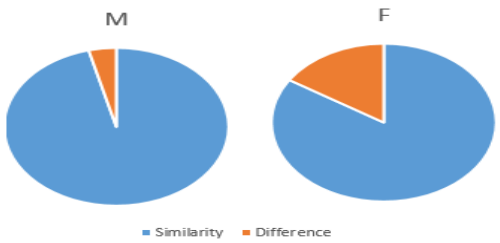

Figure 2 Result of The Gender of Participants.

2) Age Range:

This question targeted the age range of participants who are willing to debate.

We asked: What is your age range?

Key Finding:
• First Survey (Online Products)
- 4.3 percent of participants were less than 20 years.
- 30.3 percent of participants were read between 20 and 30 years.
- 50.3 percent of participants were over than 30 years.

• Second Survey (Online Products)
- 4.8 percent of participants were less than 20 years.
- 46.3 percent of participants were between 20 and 30 years.
- 48.9 percent of participants were over than 30 years.

• **Similarities between these two surveys** (Online Products and Online News) for this question.
- **Less than 20 years:** The similarity between online products and online news was 71 percent for first chose of the age range question which was less than 20 years of the age range of participants.
- **Between 20 and 30 years:** The similarity between Online products and online news was 97 percent for first chose of the age range question which was between 20 and 30 years of the age range of participants.
- **Over than 30 years:** The similarity between online products and online news was 96 percent for third chose of the age range question which was over than 30 years of the age range of participants.

• **Differences between these two surveys** (Online Products and Online News) for this question.
- **Less than 20 years:** The difference between online products and online news was 29 percent for first chose of the age range question which was less than 20 years of the age range of participants.
- **Between 20 and 30 years:** The difference between Online products and online news was 2.3 percent for first chose of the age range question which was between 20 and 30 years of the age range of participants.
- **Over than 30 years:** The difference between online products and online news was 4 percent for third chose of the age range question which was over than 30 years of the age range of participants.

Analysis: Results of this question were similar for both domains of the debate (Online Products and Online news) as shown in Figure 3. The greatest age range of participants, who were willing to debate in this study, was older than 30, then between 20 and 30.

This question gave us the age range of participants whom we should focus on when we improve the user interface of DDP2P applications.

		Similarity	Difference
Age Range	Less than 20	0.717233021	0.28276698
	Between 20 and 30	0.977100043	0.02289996
	Over than 30	0.95690068	0.04309932

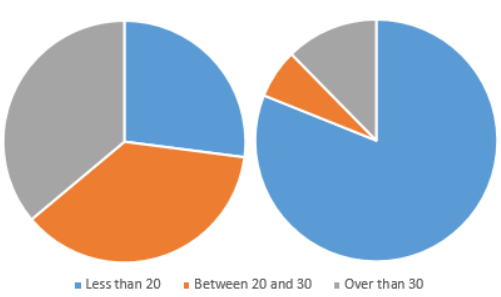

Figure 3 Result of the Age Range of Participants: Similarities and Differences between our Two Studies Domains.

3) Secondary Language:
The secondary language question aimed to discover which languages are the most popular in our studies domain of the electronic debate as shown in Figure 4.
We asked: What is your secondary language, if any?

Key Finding:
• First Survey (Online Products)
- 78.5 percent of participants whose second language was English.
- 0.2 percent of participants whose second language was Chinese.
- 0.8 percent of participants whose second language was French.
- 1.5 percent of participants whose second language was Spanish.
- 11.1 percent of participants whose second language was Other.

• Second Survey (Online News)
- 80.4 percent of participants whose second language was English.
- 0.9 percent of participants whose second language was Chinese.
- 0.4 percent of participants whose second language was French.
- 2.0 percent of participants whose second language was Spanish.
- 16.3 percent of participants whose second language was Other.

• Similarities between these two surveys (Online Products and Online News) in this question.

- **English:** The Similarity between Online products and online news was 92.3 percent for first chose of the secondary language question which was English.
- **Chinese:** The Similarity between Online products and online news was 27 percent for first chose of the secondary language question which was Chinese.
- **French:** The Similarity between Online products and online news was 61 percent for first chose of the secondary language question which was French.
- **Spanish:** The Similarity between Online products and online news was 73 percent for first chose of the secondary language question which was Spanish.
- **Other:** The Similarity between Online products and online news was 62 percent for first chose of the secondary language question which were Other languages.

• **Differences between these two surveys** (Online Products and Online News) in this question.

- **English:** The difference between online products and online news was 7 percent for first chose of the secondary language question which was English.
- **Chinese:** The difference between online products and online news was 73 percent for second chose of the secondary language question which was Chinese.
- **French:** The difference between online products and online news was 39 percent for third chose of the secondary language question which was French.
- **Spanish:** The difference between online products and online news was 27 percent for fourth chose of the secondary language question which was Spanish.
- **Other:** The difference between online products and online news was 38 percent for fifth chose of the secondary language question which were Other languages.

Analysis: We found English was the most popular language in our study in both domains of the debate, but there were a degree of differences between these two studied domains of the electronic debate. From this question, in DDP2P applications, we will suggest using English as a formal language to communicate between users. Also, we will put English as the default user interface for DDP2P applications.

		Similarity	Difference
Secondary Language	English	0.925092822	0.07490718
	Chinese	0.273231718	0.72676828
	French	0.609983087	0.39001691
	Spanish	0.728617664	0.27138234
	Other	0.618130556	0.38186944

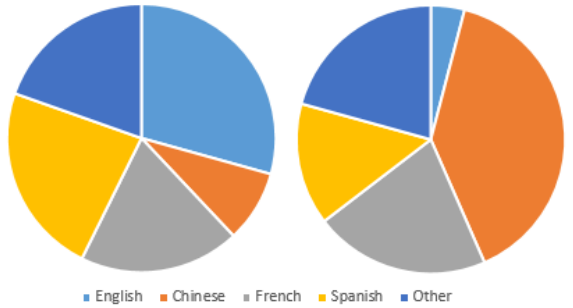

Figure 4 Result of the Secondary Language of Participants: Similarities and Differences between our Two Studies Domains.

4) Level of the Education:

The level of education question referred to the impact of level of education on the debate.

We asked: What is your education level?

Key Finding:

• First Survey (Online Products):

- 15 percent of participants have a High School degree
- 51.1 percent of participants have a Bachelor's degree
- 27.1 percent of participants have a Master's degree
- 6.8 percent of participants have a Ph.D degree

• Second Survey (Online News)

- 15.2 percent of participants have a High School degree
- 48.3 percent of participants have a Bachelor's degree
- 26.7 percent of participants have a Master's degree
- 9.8 percent of participants have a Ph.D degree

• **Similarities between these two surveys** (Online Products and Online News) in this question.

- **High School:** The Similarity between Online products and online news was 92 percent for first chose of the educational level question which was High School degree.
- **Bachelor:** The Similarity between Online products and online news was 99 percent for second chose of the educational level question which was Bachelor's degree.
- **Master**: The Similarity between Online products and online news was 91 percent for third chose of the educational level question which was Master's degree.

- **Ph.D:** The Similarity between Online products and online news was 79 percent for fourth chose of the educational level question which was Ph.D degree.

• **Differences between these two surveys** (Online Products and Online News) in this question.

- **High School:** The difference between online products and online news was 8 percent for first chose of the secondary language question which was High School degree.
- **Bachelor**: The difference between Online products and online news was one percent for second chose of the educational level question was Bachelor's degree.
- **Master**: The difference between online products and online news was 9 percent for third chose of the educational level question which was master's degree.
- **Ph.D:** The difference between online products and online news was 21 percent for fourth chose the educational level question which was Ph.D degree.

Analysis: The results of this question were similar both domains of electronic debate. In both surveys, we found that most participants have a Bachelor's degree for different domains of the debate as shown in Figure 5.

This question showed us that most participants could be familiar with any updates or developments for improving the user interface of DDP2P applications because the majority of participants had a Bachelor's degree.

		Similarity	Difference
Level of the Education	High School	0.91727759	0.0827224
	Bachelor	0.98653688	0.0134631
	Master	0.91497462	0.0850254
	Ph.D.	0.79093364	0.2090664

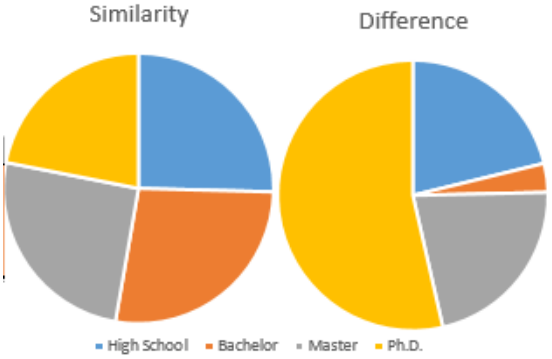

Figure 5 Result of the educational level of Participants: Similarities and Differences between our Two Studies Domains.

C. Reading the Comments/threads Question:

The scope of this research focused on comments/threads for tow domains of electronic debate. Also, we put this question as test the validity of our online surveys. The validity question depended on asking questions which measured what we were supposed to be measuring. According to our results of our online surveys participants, most of participants would like to read the reviews (comments/threads) for product before they bought it. Also, majority of participants would like to read comments/threads for a news article after they read article online.

We asked: How likely would you read a product reviews (comments/threads) before making a decision to purchase it? How likely would you read a news comments/threads) the comments/threads of a news article after read article online?

Key Finding:

• First Survey (Online Products)

- 43.9 percent of participants usually read a product review (comments/threads) before making a decision to purchase it.
- 46.2 percent of participants sometimes read a product review (comments/threads) before making a decision to purchase it.
- 9.8 percent of participants never read a product review (comments/threads) before making a decision to purchase it.

• Second Survey (Online News)

- 19.8 percent of participants usually read the comments/threads of a news article after read article online.
- 73.5 percent of participants sometimes read the comments/threads of a news article after read article online.
- 6.7 percent of participants never read the comments/threads of a news article after read article online.

• **Similarities between these two surveys** (Online Products and Online News) in this question.

- **Usually:** The Similarity between Online products and online news was 40.6 percent for first chose of reading the comments/threads question which was usually.
- **Sometimes:** The Similarity between Online products and online news was 62.7 percent for second chose of reading the comments/threads question which was sometimes.

• Differences between these two surveys (Online Products and Online News) in this question.

- **Usually:** The difference between online products and online news was 59.4 percent for first chose of reading the comments/threads question which was usually.
- **Sometimes:** The difference between online products and online news was 37.3 percent for

second chose of reading the comments/threads question was sometimes.

Analysis: The result of this question referred to whether the majority of participants would read a product review "Usually" or "Sometimes" as shown in Figure 6. Whoever answered "Never" for this question could not continue to the next series of questions because the remaining questions focused on actual readers of product reviews.

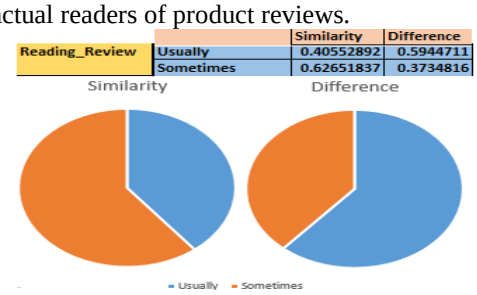

Figure 6 Result of Reading the comments/threads: Similarities and Differences between our Two Studies Domains.

D. Threads Questions:

We have several questions which focused on comments/threads between our two studies domains which were online products and online news. Our samples were the participants who read comments. They were supposed to answer a chain of multiple choice questions to determine the factors that attract users while reading or taping comments/threads for any comment/review. The results of those questions will help us to improve GUI of the DirectDemocracyP2P applications.

1) Trusting the Justifications:

We found that most of participants were trusted to read a brief comments in both domains of platforms debate as shown in Figure 7.

We asked: When you read comments on any online product/news, what types of comments/threads do you trust the most?

Key Finding:

• Fist Survey (Online Products)

- 53.9 percent of participants were trusted to read a brief review.
- 37.1 percent of participants were trusted to read a long review.
- 9.0 percent of participants were not likely to trust any online review

• Second Survey (Online News)

- 43.5 percent of participants were trusted to read a brief comments.
- 22.3 percent of participants were trusted to read a long comments.
- 34.2 percent of participants were not likely to trust any online comments.

• **Similarities between these two surveys** (Online Products and Online News) in this question.

- **Brief comments/threads:** The Similarity between Online products and online news was 81 percent for first chose of trusting the comments/threads question which was Brief reviews/comments.
- **Long comments/thread:** The Similarity between Online products and online news was 60.3 percent for second chose of trusting the comments/threads question which was long reviews/comments.
- **Both:** The Similarity between Online products and online news was 26.5 percent for third chose of trusting the comments/threads question which was Both (brief or long reviews/comments).

•**Differences between these two surveys** (Online Products and Online News) in this question.

- **Brief comments/threads:** The difference between online products and online news was 19 percent for first chose of trusting the comments/threads question which was brief comments/threads.
- **Long comments/thread:** The difference between Online products and online news was 39.7 percent for second chose of trusting the comments/threads question was Long comments/thread.
- **Both:** The difference between Online products and online news was 73.5 percent for first chose of trusting the comments/threads question which was both (brief or long reviews/comments).

Analysis: Designing the brief comments by limiting the length of the motion will help to attract users to debate according to the results of this question. Limitation of the length of the debate arguments will directly affect users' acquisition and, in turn, trusting the justifications about any given motion in the DDP2P applications.

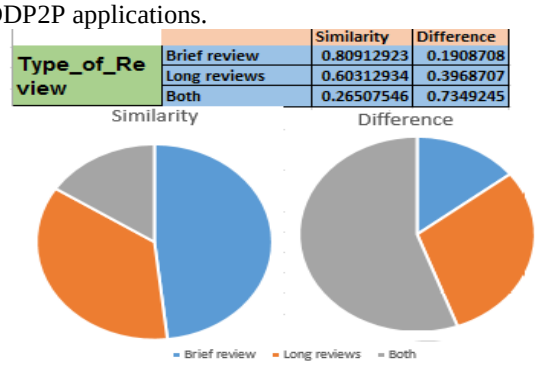

Figure 7 Result of trusting the comments/threads: Similarities and Differences between our Two Studies Domains.

2) Sorting the Important Justification: Most users would read up to 10 reviews according to the results of our online surveys for both studies domains as shown in Figure 8.

We asked: How many comments do you normally read in association with an online article/product, in case you start reading its comments? Key Finding:

• Fist Survey (Online Products)
- 37.4 percent of participants read 5 or less reviews before buying a specific product from an online store.
- 36.4 percent of participants read 10 or less reviews before buying a specific product from an online store.
- 20.8 percent of participants read more than 10 reviews before buying a specific product from an online store.
- 5.4 percent of participants do not read reviews before buying a specific product from an online store.

• Second Survey (Online News)
- 32.4 percent of participants read 5 or less normally read in association with an online article, in case you start reading its comments.
- 43.0 percent of participants read 10 or less normally read in association with an online article, in case you start reading its comments.
- 24.8 percent of participants read more than 10 normally read in association with an online article, in case you start reading its comments.

• Similarities between these two surveys (Online Products and Online News) in this question.
- **Read 5 or less:** The Similarity between Online products and online news was 86.4 percent for first chose of trusting the comments/threads question which was read 5 or less reviews/comments.
- **Read 10 or less:** The Similarity between Online products and online news was 84.2 percent for second chose of trusting the comments/threads question which was read 10 or less reviews/comments.
- **Read more than 10:** The Similarity between Online products and online news was 84.5 percent for third chose of trusting the comments/threads question which was read more than 10 reviews/comments.

• Differences between these two surveys (Online Products and Online News) in this question.
- **Read 5 or less:** The difference between online products and online news was 13.6 percent for first chose of trusting the comments/threads question which was read 5 or less comments/threads.
- **Read 10 or less:** The difference between online products and online news was 15.8 percent for second chose of trusting the comments/threads question was read 5 or less comments/thread.
- **Read more than 10:** The difference between online products and online news was 15.5 percent for first chose of trusting the comments/threads question which was read more than 10 reviews/comments.

Analysis: In both domains of studies, we found that most of people would like to read less than 10 comments or reviews on any product or news. The important justifications should appear in first ten comments. In DDP2P applications, sorting the important justifications among the top ten justifications (around a given motion) will give the user opportunity to read them.

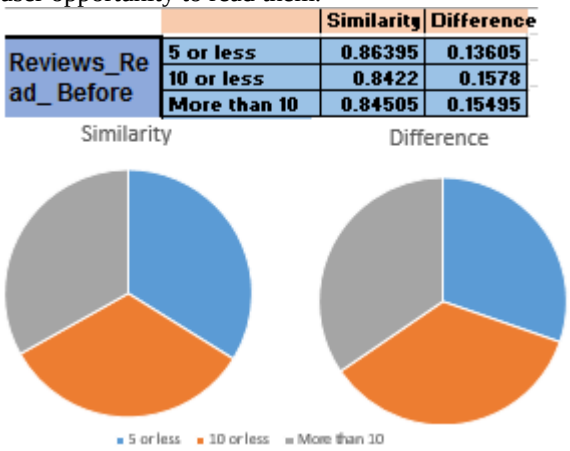

Figure 8 Sorting the Important Justification

3) Separating the Justification:

The majority of participants were likely to read any type of the arguments (Positive or Negative comments) for both studies domains of electronic debate as shown in Figure 9.

We asked: When you read comments for some online news article, or reviews for online product, do you focus on comments that are Positive, Negative or both?

Key Finding:
• Fist Survey (Online Products)
- 11.8 percent of participants were likely to read positive sides of arguments for any debate.
- 16.4 percent of participants were likely to read negative sides of arguments for any debate.
- 71.8 percent of participants were likely to read both sides of arguments (Positive or Negative Reviews) for any debate.

- Second Survey (Online News)
- 9.6 percent of participants were likely to read the comments that are agreed with the article.
- 10.4 percent of participants were likely to read the comments that are disagreed with the article.
- 6.3 percent of participants were likely to read the comments that are agreed with the user's opinion.
- 69.4 percent of participants were likely to read the comments that are disagreed with the user's opinion.

• Similarities between these two surveys (Online Products and Online News) in this question.

- **Positive:** The Similarity between Online products and online news was 74.9 percent for first chose of trusting the comments/threads question which was reading positive reviews/comments.
- **Negative:** The Similarity between Online products and online news was 89.1 percent for second chose of trusting the comments/threads question which was reading negative reviews/comments.
- **Both:** The Similarity between Online products and online news was 97 percent for third chose of trusting the comments/threads question which was reading both sides of arguments in reviews/comments.

• Differences between these two surveys (Online Products and Online News) in this question.

- **Positive:** The difference between online products and online news was 25.1 percent for first chose of trusting the comments/threads question which was reading positive comments/threads.
- **Negative:** The difference between online products and online news was 10.8 percent for second chose of trusting the comments/threads question was reading negative comments/threads.
- **Both**: The difference between online products and online news was 3 percent for first chose of trusting the comments/threads question which was reading both sides of arguments in reviews/comments.

Analysis: In our results of this question, some people would like to read positive side and other preferred to read negative side, since most of people would like to read both sides of arguments. Dividing the threads into endorsements and oppositions comments may help people to understanding others point of view in the argument. In DDP2P applications, it has already separated the justification on a motion whether Support, Oppose, or Abstain.

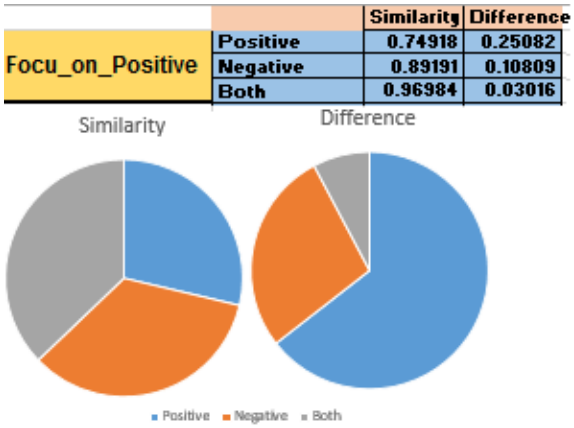

Figure 9 Separating the Justification

4) Showing the number of Justifications and Witnesses:

Most of participants agreed with the statement, "Would a number of positive comments, the number of readers, or other rating criteria, be enough for you to trust a specific news from an online news?" since the majority of participants disagreed with same statement for online product domain as shown in Figure 10.

We asked: Are a number of positive comments, the number of readers, or other rating criteria, enough for you to trust a specific product/news from an online? Key Finding:

- Fist Survey (Online Products)
- 55.4 percent of participants answered (Yes).
- 44.6 percent of participants answered (No).

- Second Survey (Online News)
- 41.1 percent of participants answered (Yes).
- 59.0 percent of participants answered (No).

• Similarities between these two surveys (Online Products and Online News) in this question.

- **Yes:** The Similarity between Online products and online news was 74.3 percent for first chose of showing the number of the comments/threads question which was yes.
- **No:** The Similarity between Online products and online news was 76 percent for second chose of showing the comments/threads question which was no.

• Differences between these two surveys (Online Products and Online News) in this question.

- **Yes**: The difference between online products and online news was 25.7 percent for first chose of showing the comments/threads question which was yes.
- **No:** The difference between Online products and online news was 24 percent for second chose of showing the comments/threads question was no.

Analysis: Showing a number of positive comments, the number of reader, or other rating criteria will attract users to read and write comments and make good arguments. In DDP2P, a number of justifications, the number of witnesses, or other rating criteria should be shown in the first page of the user interface for the motion.

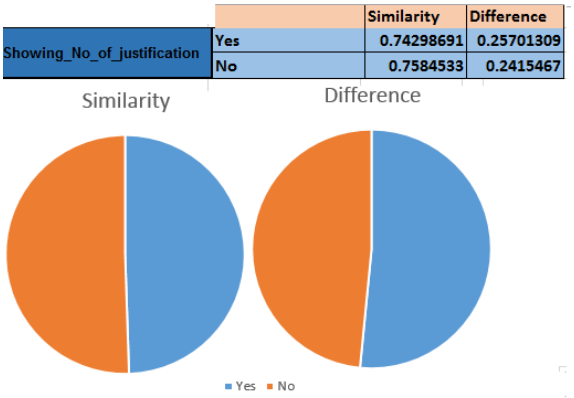

Figure 10: Showing a number of positive reviews (comments/threads) and the number of stars, or other rating criteria

5) Form for Attention-Grabbing-Words:

According to the result most of participants would be attracted by any type of online comments (Positive or Negative Words) as shown in Figure 11.

We asked: What types of words attract you the most while reading comments for any online product/news?

Key Finding:

- Fist Survey (Online Products)
- 22.1 percent of participants were attracted by positive words of arguments.
- 15.8 percent of participants were attracted by negative words of arguments.
- 62.1 percent of participants were attracted by both sides of arguments (Positive or Negative words).

- Second Survey (Online News)
- 29.4 percent of participants were attracted by positive words of arguments.
- 7.8 percent of participants were attracted by negative words of arguments.
- 62.8 percent of participants were attracted by both sides of arguments (Positive or Negative words).

• **Similarities between these two surveys** (Online Products and Online News) in this question.

- **Positive words:** The Similarity between Online products and online news was 75 percent for first chose of Attention-Grabbing-Words question which was reading positive words of arguments.
- **Negative words:** The Similarity between Online products and online news was 49.8 percent for second chose of Attention-Grabbing-Words question which was reading negative words of arguments.
- **Both**: The Similarity between Online products and online news was 99 percent for third chose of Attention-Grabbing-Words question which was reading both words (Positive or Negative words) of arguments.

• **Differences between these two surveys** (Online Products and Online News) in this question.

- **Positive:** The difference between online products and online news was 25 percent for first chose of Attention-Grabbing-Words question which was reading positive words of arguments.
- **Negative:** The difference between online products and online news was 50.1 percent for second chose of Attention-Grabbing-Words question which was reading negative words of arguments.
- **Both:** The difference between Online products and online news was one percent for first chose of Attention-Grabbing-Words question which was reading both words (Positive or Negative words) of arguments.

Analysis: Some people may get attacked by negative words since other could get their attention just positive words, but most of participants would be attracted by any type of words depending on the argument. In DDP2P applications, we could design a form for attention-grabbing-words which would attract users to become more involved in the debate.

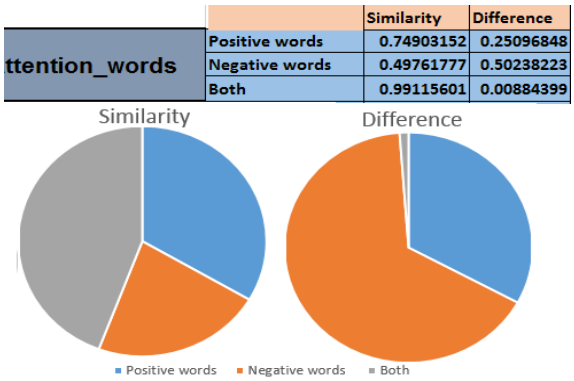

Figure 11 Types of words that attract users

6) Form for emphasizing words:

Most of participants would expand words, when they typed a comment in reviews in both studied domains as shown in Figure 12.

We asked: When you type a comment in reviews (comments/threads) for any online product/news, do you expand some words for emphasis? For example verrrrrrrrrrry

Key Finding:

• Fist Survey (Online Products)

- 5.6 percent of participants were always likely to expand some words for emphasis when they typed a comment in online reviews.
- 47.2 percent of participants were sometimes likely to expand some words for emphasis when they typed a comment in online reviews.
- 47.2 percent of participants were never likely to expand some words for emphasis when they typed a comment in online reviews.

• Second Survey (Online News)

- 6.3 percent of participants were always likely to expand some words for emphasis when they typed a comment in online reviews.
- 39.7 percent of participants were sometimes likely to expand some words for emphasis when they typed a comment in online reviews.
- 53.9 percent of participants were never likely to expand some words for emphasis when they typed a comment in online reviews.

• **Similarities between these two surveys** (Online Products and Online News) in this question.

- **Always:** The similarity between online products and online news was 87.4 percent for first chose of emphasizing words question which was always likely to expand some words for emphasis when they typed a comment in online reviews.
- **Sometimes:** The Similarity between Online products and online news was 84.5 percent for second chose of emphasizing words question which was sometimes likely to expand some words for emphasis when they typed a comment in online reviews.
- **Never**: The Similarity between Online products and online news was 87.9 percent for third chose of emphasizing words question which was never likely to expand some words for emphasis when they typed a comment in online reviews.

• **Differences between these two surveys** (Online Products and Online News) in this question.

- **Always:** The difference between online products and online news was 12.6 percent for first chose of emphasizing words question which was always likely to expand some words for emphasis when they typed a comment in online reviews.
- **Sometimes**: The difference between online products and online news was 14.5 percent for second chose of emphasizing words question which was sometimes likely to expand some words for emphasis when they typed a comment in online reviews.
- **Never:** The difference between Online products and online news was 12.1 percent for first chose of emphasizing words question which was never likely to expand some words for emphasis when they typed a comment in online reviews.

Analysis: The majority of participants would like to extend the words when they typed a comment in online reviews or comments. In DDP2P applications, we can design a form for emphasizing words which will attract users to become more involved in the debate.

		Similarity	Difference
Expending_words	All the time	0.87434119	0.12565881
	Sometimes	0.84500597	0.15499403
	Never	0.87898097	0.12101903

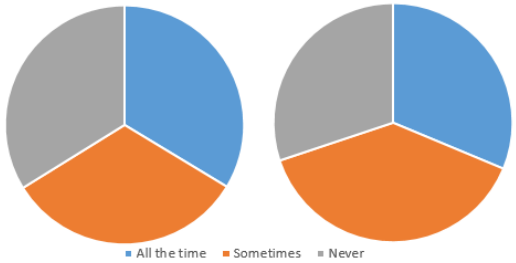

Figure 12 Expanding words for emphasis

7) Form for Translating Words of the User Region:

Most of participants would use argot language from their region as shown in Figure 13.

We asked: When you type a comment in a review (comments/threads) for any online news, do you use argot language from your region?

Key Finding:

• Fist Survey (Online Products)

- 41.2 percent of participants were always likely to use argot language from their region.
- 53.5 percent of participants were sometimes likely to use argot language from their region.
- 32.4 percent of participants were never likely to use argot language from their region.

• Second Survey (Online News)

- 11.9 percent of participants were always likely to use argot language from their region.
- 51.6 percent of participants were sometimes likely to use argot language from their region.
- 36.5 percent of participants were never likely to use argot language from their region.

• **Similarities between these two surveys** (Online Products and Online News) in this question.

- **Always:** The similarity between online products and online news was 84.3 percent for first chose

of translating words of the user region question which was always likely to use argot language from their region.

- **Sometimes:** The Similarity between Online products and online news was 96.5 percent for second chose of emphasizing words question which was sometimes likely to use argot language from their region.
- **Never:** The Similarity between Online products and online news was 88.8 percent for third chose of emphasizing words question which was never likely to use argot language from their region.

• **Differences between these two surveys** (Online Products and Online News) in this question.

- **Always:** The difference between online products and online news was 15.7 percent for first chose of emphasizing words question which was always likely to use argot language from their region.
- **Sometimes:** The difference between online products and online news was 3.5 percent for second chose of emphasizing words question which was sometimes likely to use argot language from their region.
- **Never:** The difference between online products and online news was 11.2 percent for first chose of emphasizing words question which was never likely to use argot language from their region.

Analysis: The majority of the participants would like to use their region language in our studied domains platforms. That meant they should enhance their comments to be easy for understanding. In DDP2P applications, we should design a form for translating words of the user's region to English, and give some space to clarify these words (enhancement).

		Similarity	Difference
User_Region_Language	All the time	0.8432119	0.156788
	Sometimes	0.9648823	0.035118
	Never	0.8880028	0.111997

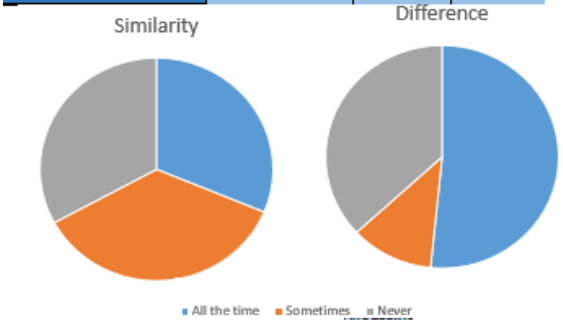

Figure 13 Using argot language

8) Form for Supporting Translation:

Most of participants were never likely to use words from other languages for both studied domains as shown in Figure 14.

We asked: When you type a comment in a review (comments/threads) for any online news, do you use some words from other languages?

Key Finding:

• Fist Survey (Online Products)

- 3.3 percent of participants were always likely to use words from other languages
- 28.3 percent of participants were sometimes likely to use words from other languages
- 68.3 percent of participants were never likely to use words from other languages

• Second Survey (Online News)

- 3.8 percent of participants were always likely to use words from other languages
- 40.8 percent of participants were sometimes likely to use words from other languages
- 55.9 percent of participants were never likely to use words from other languages

• **Similarities between these two surveys** (Online Products and Online News) in this question.

- **Always:** The similarity between online products and online news was 87.3 percent for first chose of supporting translation question which was always likely to use words from other languages.
- **Sometimes:** The Similarity between Online products and online news was 69.2 percent for second chose of supporting translation question which was sometimes likely to use words from other languages.
- **Never:** The Similarity between online products and online news was 80.9 percent for third chose of supporting translation question which was never likely to use words from other languages.

• **Differences between these two surveys** (Online Products and Online News) in this question.

- **Always:** The difference between online products and online news was 12.6 percent for first chose of supporting translation question which was always likely to use words from other languages.
- **Sometimes:** The difference between online products and online news was 30.8 percent for second chose of supporting translation question which was sometimes likely to use words from other languages.
- **Never:** The difference between online products and online news was 19.1 percent for first chose of supporting translation question which was never likely to use words from other languages.

Analysis: Some of participants would like to use some words from other languages. The debate platforms should support multiple languages to make easy for understandable. In DDP2P applications, we should design a form for supporting translation of

words of the users' languages, and give the users space to explain these words (explanation).

		Similarity	Difference
Supporting_Transulation	All the time	0.8743412	0.125659
	Sometimes	0.6924131	0.307587
	Never	0.8091865	0.190814

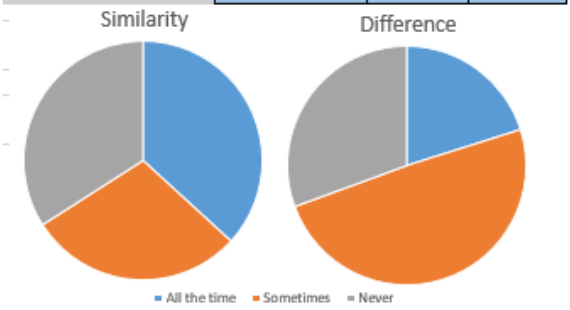

Figure 14 Supporting Translation for different languages

9) Benefit of Study Threads:

Some of participants said that comment about any online product/news are argumentative reviews while others described online reviews as positive reviews. A few of participants considered online reviews as negative reviews as shown in Figure 15.

We asked: From your perspective, how would you generally describe reviews (comments/threads) about any online news?

Key Finding:

- Fist Survey (Online Products)
- 37.2 percent of participants described online reviews as argumentative reviews
- 40.4 percent of participants described online reviews as positive reviews 9.0 percent of participants described online reviews as negative reviews

- Second Survey (Online News)
- 34.4 percent of participants described online reviews as argumentative comments
- 30.4 percent of participants described online reviews as positive comments
- 35.2 percent of participants described online reviews as negative comments

• **Similarities between these two surveys** (Online Products and Online News) in this question.

- **Argumentative reviews/comments:** The similarity between online products and online news was 92.9 percent for first chose of the benefit of study threads question which was argumentative reviews/comments.
- **Positive reviews/comments:** The Similarity between Online products and online news was 74.8 percent for second chose of the benefit of study threads question which was positive reviews/comments.
- **Negative reviews/comments:** The Similarity between online products and online news was 38 percent for third chose of the benefit of study threads question which was negative reviews/comments.

• **Differences between these two surveys** (Online Products and Online News) in this question.

- **Argumentative reviews/comments:** The difference between online products and online news was 7.1 percent for first chose of the benefit of study threads question which was argumentative reviews/comments.
- **Positive reviews/comments**: The difference between online products and online news was 25.2 percent for second chose of the benefit of study threads question which was positive reviews/comments.
- **Negative reviews/comments:** The difference between online products and online news was 62 percent for first chose of the benefit of study threads question which was negative reviews/comments.

Analysis: The results of this question gave us the benefit of studying online reviews (comments/ threads). There are a lot of users who trust online reviews, especially if they are serious and positive reviews.

		Similarity	Difference
Benefit_of_Threads	Argumentative reviews	0.928631	0.071369
	Positive	0.7483298	0.25167
	Negative	0.3813449	0.618655

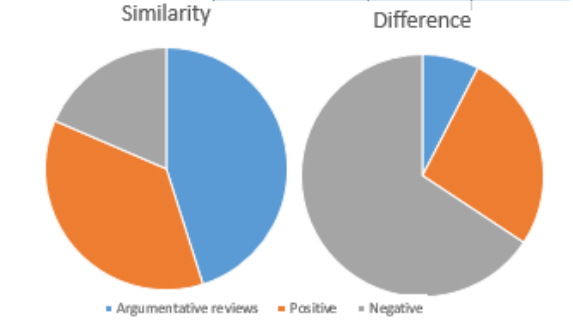

Figure 15 Benefit of Study Reviews/Threads

10) Structured/Unstructured Platform for Threads:

Most of participants were likely to prefer platforms for reviews (comments/threads) of the online product/news to be structured, which could be a specific question that the user should answer or comment on. Structured platforms helped extract a conclusion of arguments around the product/news as shown in Figure 16.

We asked: How do you prefer platforms for reviews (comments/threads) associated with online to be structured platforms or unstructured platforms?

Key Finding:

- Fist Survey (Online Products)
  - 56.9 percent of participants preferred reviews (comments/threads) for online products to be structured platforms
  - 43.1 percent of participants preferred reviews (comments/threads) for online products to be unstructured platforms

- Second Survey (Online News)
  - 58.2 percent of participants preferred reviews (comments/threads) for online news to be structured platforms
  - 41.8 percent of participants preferred reviews (comments/threads) for online news to be unstructured platforms

• **Similarities between these two surveys** (Online Products and Online News) in this question.

- **Structured platforms:** The similarity between online products and online news was 97.8 percent for first chose of the benefit of study threads question which was structured platforms.
- **Unstructured platforms:** The Similarity between Online products and online news was 97.08 percent for second chose of the benefit of study threads question which was unstructured platforms.

• **Differences between these two surveys** (Online Products and Online News) in this question.

- **Structured platforms:** The difference between online products and online news was 2.2 percent for first chose of the benefit of study threads question which was Structured platforms
- **Unstructured platforms:** The difference between online products and online news was 2.92 percent for second chose of the benefit of study threads question which was unstructured platforms.

Analysis: The majority of participants were likely to prefer reviews (comments/threads) for online product/news to be structured platforms. In DDP2P applications, we should have those two types of platforms. Unstructured platforms could be used for peers to join or create any organizations/motions, and structured platforms could be used for voting to post only one justification for any given motion, and whether they support it or are against it.

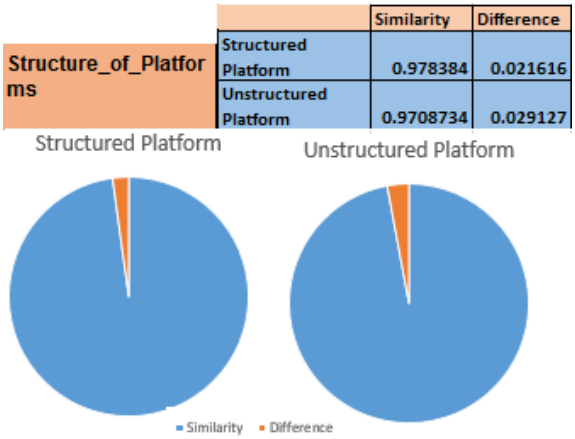

Figure 16 Structured/Unstructured Platform for Reviews/Threads

V. ACKNOWLEDGMENT

We are sincerely grateful to Dr. Muzaffar Shaikh, Dr. John Lavelle, Dr. Khalid Abuhasel for their support and sharing their truthful and illuminating view on a number of issues related to the survey.

VI. CONCLUSION

Platforms for electronic debates can be associated with various application domains, such as product evaluation, commented news, science, education, religion, or politics. These platforms are often developed as modules that can be integrated in any application. When developing electronic platforms for debates, one has to know what properties and expectations have to be met. The question that we address is whether the expectations differ between distinct application domains. In this research we investigate a mechanism based on surveys to detect differences between application domains of electronic debates associated with product evaluation systems as well as with commented news. Similar questions are asked to large numbers of users of debate platforms for the two types of applications. The questions are designed to capture general and specific expectations and beliefs that users have concerning the threading, structure and content of the debates on the corresponding platforms. We find out that the expectations are significantly different as to the type and details expected by users. Users of product evaluation debates expect terse and focused comments that highlight problems of the product. They have more limited time to read these comments, as they want to go on finding a product they need. With commented news, users are more inclined to read detailed sides of the story. It may be explained by the fact that users read news when they have more time available, and they can dedicate to the understanding the involved issues. As such, debate platforms for product evaluation have to encourage

short comments, with limited number of words. Platforms for commented news can provide ample space for related issues and extended discourses.

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