Methodology: Field Experiment

	Exemplary 4	Proficient 3	Marginal 2	Unacceptable 1
Research Question and Goal Definition	● The research questions are clearly identified and stated. The questions are interesting, novel and worth researching into with appropriate scope. ● The goals are precisely identified and discussed. The goals are practical and testable and compensation schemes are reported clearly for future analysis. ● The goals are highly relevant to the research question, and the paper clearly identifies the variables and their relationships at a high level.	● The research questions are clearly identified and stated, but the questions may not be realistic, or not novel or even unresearchable. ● The goals are precisely identified and discussed. The goals may not be practical or testable. Compensation schemes are partially missing. ● The goals are relevant to the research question, but lacking some details in identifying the variables and their relationships.	● The research questions are identified but stated in an unclear manner. The question may not be realistic, or not novel or even unresearchable. ● The goals are identified but stated imprecisely. The goals may not be practical or testable. Compensation schemes are missing. ● The goals are relevant to the research question, and the variables and their relationships are stated but are based on some flawed logic.	● The research question is not identified or wrongly stated. ● The goals are not identified. ● The goals are irrelevant to the research question, and the variables and their relationships are not stated.
Field/Environment Setting	● The field setting is practical and natural, rendering an accurate sense of the products' performance in the real world. ● The field setting is well-observable and provides a great degree of access to qualitative accounts and descriptions of people's behavior for researchers to study. ● The deployment environment is fully examined and prepared in advance. Methods like usability	● The field setting is practical and renders a very close sense of the products' performance in the real world. ● The field setting is observable and provides most of the qualitative accounts and descriptions of people's behavior for researchers to study. ● The deployment environment is roungly examined and prepared. Methods like	● The field setting is practical and renders a similar but not accurate sense of the products' performance in the real world ● The field setting is observable but provides inadequate qualitative accounts or descriptions of people's behavior for researchers to study. ● The deployment environment is roungly examined and prepared in	● The field setting is impractical and fails to render the real performance of the deployed products. ● The field setting is not easily observable and does not provide access to qualitative accounts and descriptions of people's behavior for researchers to study. ● The deployment environment is not

	tests are carried out as carefully as possible to ensure the proper functioning and robustness of prototypes.	usability tests are carried out but does not ensure the proper functioning and robustness of the prototypes.	advance but methods like usability tests are missing.	examined in advance.
Participant Recruitment and Ethical Considerations	● Participant types (from familiar people to unknown people) are fully considered based on the purposes of the study and participants of an appropriate size are recruited. ● Participants are informed timely and their consent is collected at an appropriate time without disrupting their behaviour in the experiment. ● Ethical considerations are fully applied to ensure that participants are treated with respect. The privacy of participants is assured and all the data is stored securely.	● Most of the participant types match with the purposes of the study and participants of an appropriate size are recruited. ● Participants are informed and their consent is collected without disrupting their behaviour in the experiment, but the communication is not timely. ● Ethical considerations are partially applied to ensure that participants are treated with respect. The privacy of participants is assured but some of the data is stored insecurely.	● Some participant types match with the purposes of the study, but participants' numbers are not powerful enough to detect the effect or draw any conclusion. ● Participants are informed and their consent is collected, but the communication timing may affect their behaviour in the experiment. ● Ethical considerations are partially applied, but some participants may not be treated with respect. The privacy of participants is not assured and most of the data is stored insecurely.	● Participant types are not representative to the purposes of the study and introduce extra messy environment factors to the experiment results. Participants' numbers are not powerful enough to detect the effect or draw any conclusion. ● Participants are not informed and their consent is not collected. ● Ethical considerations are not applied during the experiment and all the data is not stored securely.
Data Collection	● Variables are clearly identified, with their relationships and limitations explicitly discussed. They are meaningful in answering the research question. ● Multiple methods, both quantitatively and qualitatively, are deployed to collect rich data to enable triangulation on the research question. ● The process of data collection	● Variables are clearly identified and address the research question well. ● Rich data is collected to provide insight into the research question. ● The process of data collection and methods of measurement are clearly explained. ● Frequency and timing of data	● Variables are mostly identified and are relevant in answering the research question. ● Some data is collected to answer the research question. ● The process of data collection and methods of measurement are reasonably explained, but some components are	● Variables are not clearly defined. ● No clear method or approach for data collection. ● The process of data collection and methods of measurement are not clear. ● The frequency and timing of data collection are random or unreasonable. ● Research process is not

	and methods of measurement are clearly explained with considerations to minimize explicit user intervention. ● The frequency and timing of data collection are considerate and well-thought-out. ● Document the research process well, including implicit measures for later analysis. ● Rich data is collected to deepen the understanding of the system and target population.	collection are explained and justified. ● The research process is appropriately documented with some implicit measures. ● Enough data is collected to yield a deeper understanding of the system and target population.	confusing. ● The frequency and timing of data collection are explained. ● No clear documentation of the research process and no implicit measure is identified. ● Data collected can draw some basic conclusions and insights but not very convincing.	documented properly. ● Not enough data is collected to draw any conclusion or insights.
Conducting the Field Study	● The purpose of study is communicated to the participants along with clear instructions and continuous process guidance. ● Well-constructed experiment procedures are listed in exact steps and detailed enough to be duplicated. ● All materials and equipment used in the experiment are clearly described with complete justification, and materials are realistic and adequate to support the research conclusion ● Proper measures have been taken to ensure the safety of researchers, participants, and field study materials and equipment. ● Researchers are dedicated to incremental and continuous analyses to understand the study status to inform future	● The purpose of study is communicated to the participants along with clear instruction. ● Experiment procedures are well-designed and explained clearly. ● Almost all materials and equipment used in the experiment are clearly described with insufficient justification. Some materials are not realistic or inadequate to support the conclusion. ● Some considerations have been included to ensure the safety of researchers, participants, and field study materials and equipment. ● Researchers conduct periodic analyses to monitor the experiment's progress. ● If research questions or	● Communication of study purpose and process is explained but somewhat confusing to the participants. ● Experiment procedures are reasonably designed and explained. ● Many materials and equipment used in the experiment are described with incomplete justification. Many materials are not realistic or inadequate to support the conclusion ● The safety of researchers, participants, and field study materials and equipment are not fully addressed. ● Some incremental analysis is conducted. ● No clear justification of why the research questions	● The purpose of study is not communicated to the participants; no clear instruction is given. ● Experiment procedures are not clearly explained, confusing, unreasonable or not addressing the research question. ● Many materials and equipment are described inaccurately or not described at all. ● No consideration for the safety of researcher, participants, and field study materials and equipment. ● No incremental analysis is conducted. ● No explanation of research direction change given that happens ● How the experiment ends has an unnecessary and

	questions. ● If research questions or approach change in the process, document the change well with clear reasoning. ● When ending the experiment, the impact for participants and the community is addressed, and the process is considerate.	approaches change in the process, document the evolution of the research with some level of justification. ● A proper and considerate process to end the experiment with no negative impact on participants or the community.	approach change given it happens ● The process of ending the experiment is poorly planned and executed with no real negative impact on participants or the community.	negative impact on participants and the community.
Data Reporting and Analysis	● The paper provides rich details on what data was used. ● Precise reports on data and analysis method as well as the data cleaning method and process are provided. ● With clear definitions and explanations, data is complete with professionally-looking presentations. ● Clear statistical results are presented and analyzed along with the confidence of the findings. ● Alternative interpretations of the data are provided with detailed examinations of its limitations.	● The paper provides some rich details on what data was used. ● Reports on data and analysis methods, as well as the data cleaning are provided, but are stated in an somehow unclear manner. ● With clear definitions and explanations, data is mostly complete with easy-to-follow presentations. ● Able to draw logical and meaningful conclusions based on the analysis. ● Analysis considers potential alternative interpretation or biases.	● The paper provides some rich details on what data was used. ● Reports on data and analysis methods are provided, but missing the data cleaning method and process. ● Data is defined and explained. Key information and relevant data are provided. ● Unable to explain the result from the data analysis or the interpretation is not correct. ● No considerations of potential alternative interpretation or biases.	● The paper does not provide rich details on what data was used. ● Reports on data and analysis methods are not provided, and also missing the data cleaning method and process. ● Data is not clearly explained, not accurate, or not relevant. Presentation was hard to follow. ● No analysis is conducted for the data. ● No result is established based on the data.
Quality of Conclusion	● A convincing conclusion is presented to address the research question, with a high degree of articulation. ● The results and findings can be generalized well to other settings. ● The contributions and limitations	● A meaningful conclusion is presented in addressing the research question. ● The results and findings can be mostly generalized to other settings. ● The contributions and	● A conclusion is presented to address the research question. ● The results are very narrow in scope and cannot be generalized. ● The contributions and significance of the findings	● The conclusion presented is either not relevant to the research question or not convincing.

	of the findings are analyzed along with some future research direction proposed. ● Findings demonstrate significant implications with a high degree of external validity, theoretically, practically, or creatively.	limitations of the research are discussed. ● Findings are meaningful but not very significant.	are unclear. No discussion of its limitations or future research direction is included. ● Findings demonstrate limited significance.	
Level of Articulation	● The paper is organized in a highly clear and detailed manner. ● The experimental design is clearly justified to readers so that they understand why key decisions were taken. ● Narration style is clear about the contribution, and evidence is precisely provided	● The paper is organized in a clear manner but missing some details. ● The experimental design is clearly justified to readers so that they could overall understand why key decisions were taken. ● Narration style is overall clear about the contribution, and evidence is provided but missing some details.	● The paper is organized in a clear manner but missing some details. ● The experimental design is justified but stated in an unclear manner, readers might find it hard to understand some of the details. ● Narration style is overall clear about the contribution, but some of the evidence is missing.	● The paper is organized in an unclear and undetailed manner. ● The experimental design is not justified, and readers find it hard to understand the details. ● Narration style is not clear about the contribution, and the evidence is missing.