

## **A Study on Adoption of Mobile Learning Apps (MLA): Development of an Integrated Framework in a Multinational Context**

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### **INTRODUCTION**

Research on online learning has increased quite a bit in popularity with the development of technology that is new and is modern enough. Due to the number of devices that are available, mobile devices have become a powerful tool—not only in formal learning but also in informal learning. With the increased use of mobile learning technology, mobile learning apps (MLAs) have emerged [1,2]. Technology has not only given students the opportunity to obtain an education at their leisure and anywhere they want, without having to worry about time or age. The usage of the app is also worthwhile since it recognized a component of the learning process, particularly in thinking ability development [3]. Hence, sentiment analysis is a worthwhile endeavor since there exist pros and cons that influence one's decision-making [10-12]. In this respect, to accelerate the impact on academic progress, colleges around the world reassessed the practicality of mobile learning, which is the only viable choice for academia.

Yes, MLA was fast growing all over the world. However, the success of any technology depends on the users' acceptance [18]. Despite huge investment in technology, particularly in the MLA field, the target user reported very low use, ignorance, and overlooking [19]. Therefore, this study is used to assess the actual use of MLA. Despite this, there are not enough resources to ensure that mobile learning will be accepted in the field of higher education.

This research seeks to investigate the acceptance and usage of technology (i.e., MLA). In particular, it has to be noted that this research also investigates a variety of factors contributing to MLA usage by extending the proposed model by Davis. Although prior studies of individual motivational factors exist, they do not consider sentimental influences. This is, to the best of the authors' knowledge, the first study to look at how MLA is being used by incorporating sentimental influences and exploring target opinions underlying the TAM and the machine learning approach.

The TAM has been applied to the research fields of the internet of things [25], e-learning [26], and m-learning technologies [27], among other things, to learn about the acceptance of technology. Third, it offers a basis upon which researchers can evaluate the effects of external factors on the dependent variable. This current research also conforms to existing literature [28] on incorporating the baseline information systems (IS) framework—that is, the TAM—with other theories and uncovering the novel context.

## RESEARCH METHODOLOGY

### RESEARCH GAP

Though there has been research developing around the use of mobile learning applications (MLA) and its many adoption factors, with reference to contextual diversity—that is, multinational contexts—there is an increasingly evident research gap in the development of an integrated framework able to comprehensively address the diverse factors that impact MLA adoption. Existing studies often focus on discrete aspects, such as technical aspects, perceptions among end-users, or organizational supports, thereby failing to portray a holistic understanding on how these factors are shaped and influenced by MLA adoption across multiple cultures and organizational contexts. Therefore, there exists a need for research that seeks to synthesize and integrate various theoretical perspectives into building a comprehensive framework that can serve both scholars and practitioners alike in understanding and promoting MLA adoption within multinational settings. It should, therefore, take into consideration the often-complex interplay between individual, technological, organizational, and cultural factors to come up with a more nuanced understanding of MLA adoption behaviour.

### OBJECTIVES OF THE STUDY

1. The first objective of this research is the comprehensive examination of the factors affecting the acceptance of mobile learning apps across different cultural and geographical contexts.
2. The goals of this study hold an aspiration for increased contributions towards mobile learning research and practice and a provision of enhanced and inclusive educational approaches into the digital world.

### RESEARCH DESIGN

A logical, methodical strategy created for guiding a research project is called a research design. It is the process of learning more. Research is the process of discovering new information and correlating it with previously known information by using scientific techniques to study a natural or social event.

**Research Type:** Descriptive in nature

**Sampling Technique:** Simple random sampling technique was utilized for the purpose of the study.

**Random Sampling:** Random sampling is the process of selecting participants from a population in such a way that selection is entirely random, ensuring that each member of the population has an equal probability of being included. This technique, therefore, ensures that bias is minimized and increases the generalizability of the study's findings.

## DATA COLLECTION METHODS

The comprehensive understanding of the mobile learning apps (MLA) adoption and the development of an integrated framework applicable in a multinational context require an application of a rigorous approach to data collection. Firstly, the use of surveys can deliver qualitative insights into the usage patterns, preferences, and perceived benefits of MLA among different groups of users located in various regions. Such surveys can capture demographic data along with special questions to understand MLA adoption, such as frequency of usage, favourite features, and problems faced during the process.

**Population:** 100

**SAMPLE SIZE:** 50

**SAMPLE UNIT:** Kukatpally

### QUESTIONNAIRE:

A well-structured questionnaire with straightforward questions is employed for data gathering. Open-ended, Likert-scale, Demographic Information Section, Perception Measurement and multiple-choice items are all included in the survey.

**TOOLS USED:** Google Forms, Microsoft Excel, charts, bar graphs, Microsoft Teams.

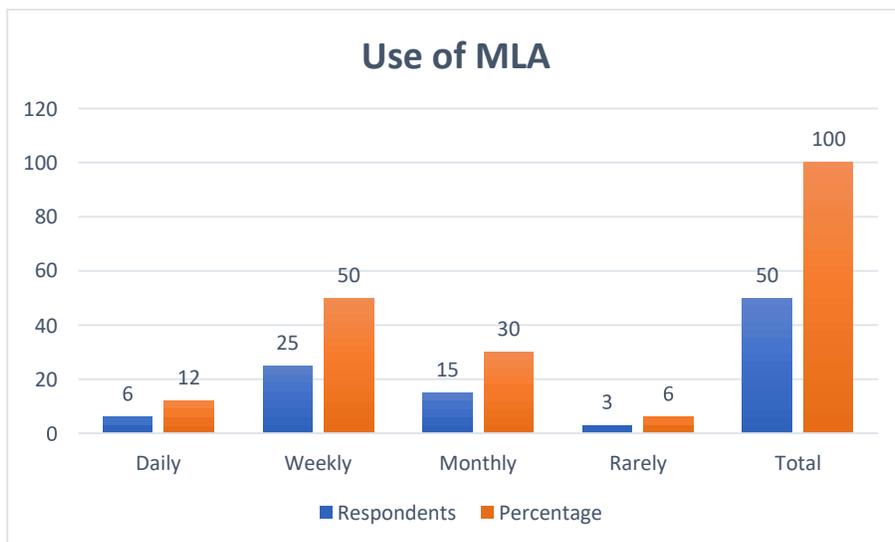
### HYPOTHESIS:

**H0:** There is a positive relationship between the perceived usefulness of mobile learning apps (MLA) and the intention to adopt them among users in a multinational context.

**H1:** There is a Negative relationship between the perceived usefulness of mobile learning apps (MLA) and the intention to adopt them among users in a multinational context.

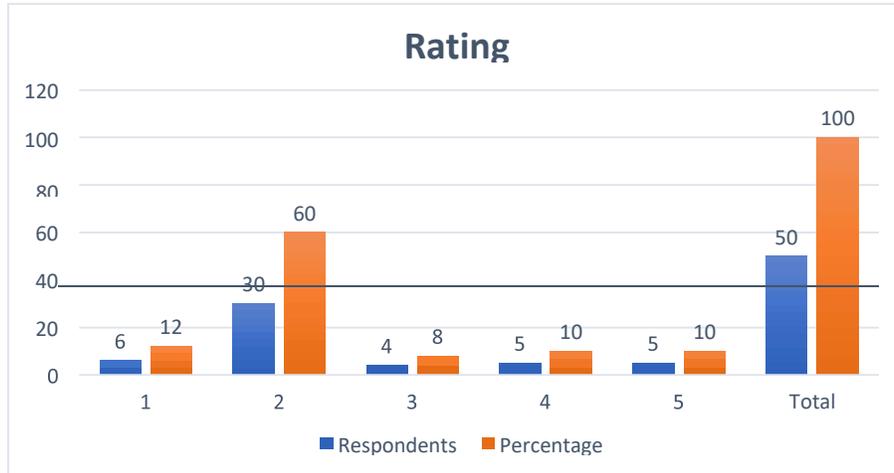
### DATA ANALYSIS

| How often do you use mobile learning apps (MLA) | Daily | Weekly | Monthly | Rarely | Total |
|---|-------|--------|---------|--------|-------|
| Respondents                                     | 6     | 25     | 15      | 3      | 50    |
| Percentage                                      | 12    | 50     | 30      | 6      | 100   |



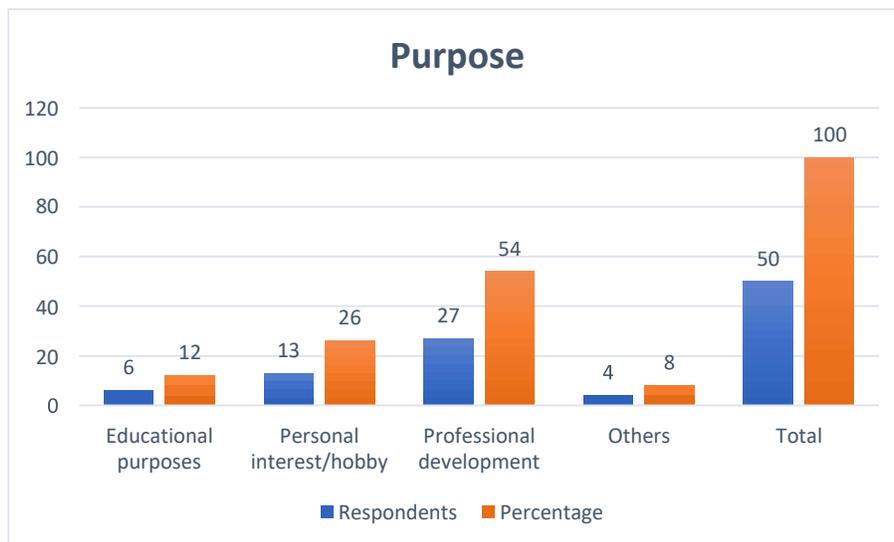
Interpretation: Majority of the respondents uses mobile learning apps (MLA) weekly i.e:50%.

| How would you rate your overall satisfaction with MLA you have used? | 1  | 2  | 3 | 4  | 5  | Total |
|--|----|----|---|----|----|-------|
| <b>Respondents</b>   | 6  | 30 | 4 | 5  | 5  | 50    |
| <b>Percentage</b>  | 12 | 60 | 8 | 10 | 10 | 100   |



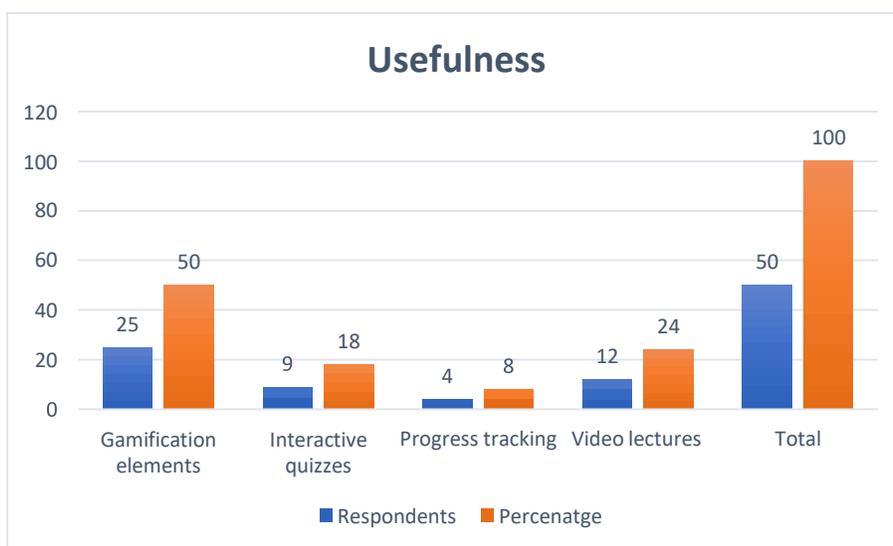
Interpretation: Most of the respondents are Satisfaction which contribute with 60% and next follows with employees of 12%.

| What is the primary purpose of using MLA for you? | Educational purposes | Personal interest/hobby | Professional development | Others   | Total      |
|---|----------------------|-------------------------|--------------------------|----------|------------|
| <b>Respondents</b>                                | <b>6</b>             | <b>13</b>               | <b>27</b>                | <b>4</b> | <b>50</b>  |
| <b>Percentage</b>                                 | <b>12</b>            | <b>26</b>               | <b>54</b>                | <b>8</b> | <b>100</b> |



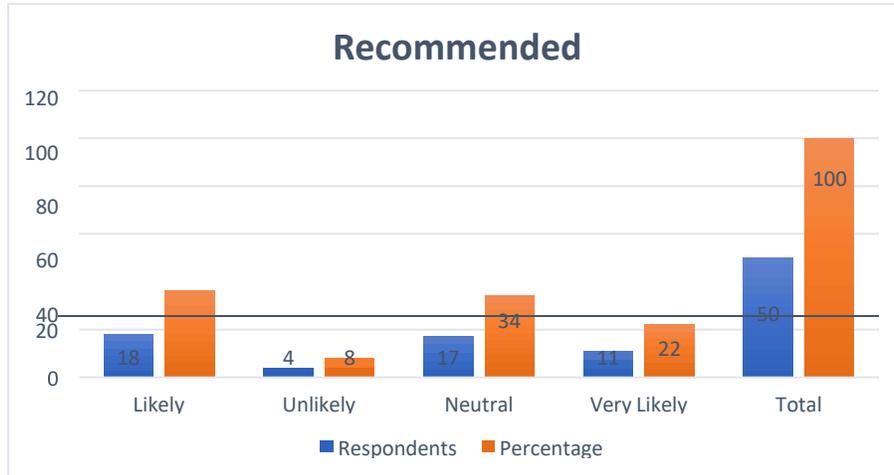
Interpretation: Most of the respondents primary purpose of using mobile learning apps MLA is for Professional development.

| What features of MLA do you find most useful? | Gamification elements | Interactive quizzes | Progress tracking | Video lectures | Total      |
|---|-----------------------|---------------------|-------------------|----------------|------------|
| <b>Respondents</b>                            | <b>25</b>             | <b>9</b>            | <b>4</b>          | <b>12</b>      | <b>50</b>  |
| <b>Percenatge</b>                             | <b>50</b>             | <b>18</b>           | <b>8</b>          | <b>24</b>      | <b>100</b> |



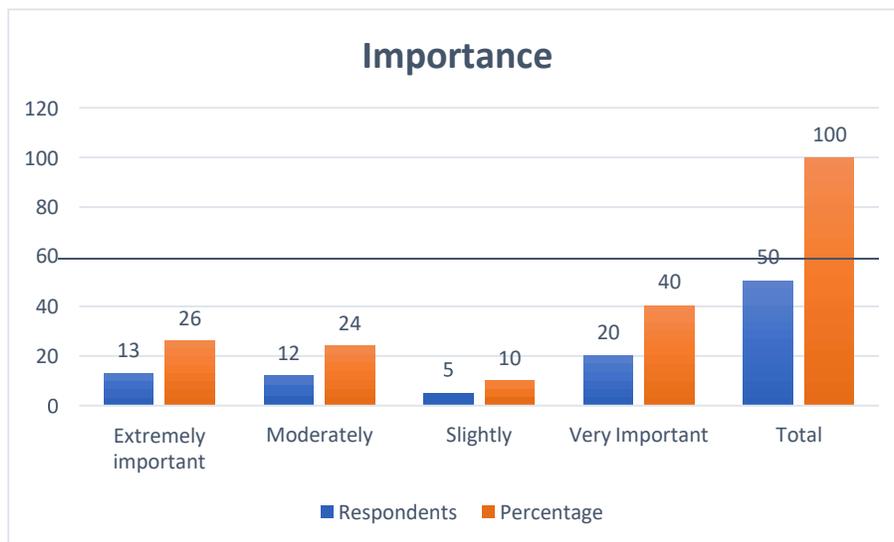
Interpretation: Majority respondents feels that Gamification features of MLA is most useful.

| How likely are you to recommend MLA to others | Likely    | Unlikely | Neutral   | Very Likely | Total      |
|---|-----------|----------|-----------|-------------|------------|
| <b>Respondents</b>                            | <b>18</b> | <b>4</b> | <b>17</b> | <b>11</b>   | <b>50</b>  |
| <b>Percentage</b>                             | <b>36</b> | <b>8</b> | <b>34</b> | <b>22</b>   | <b>100</b> |



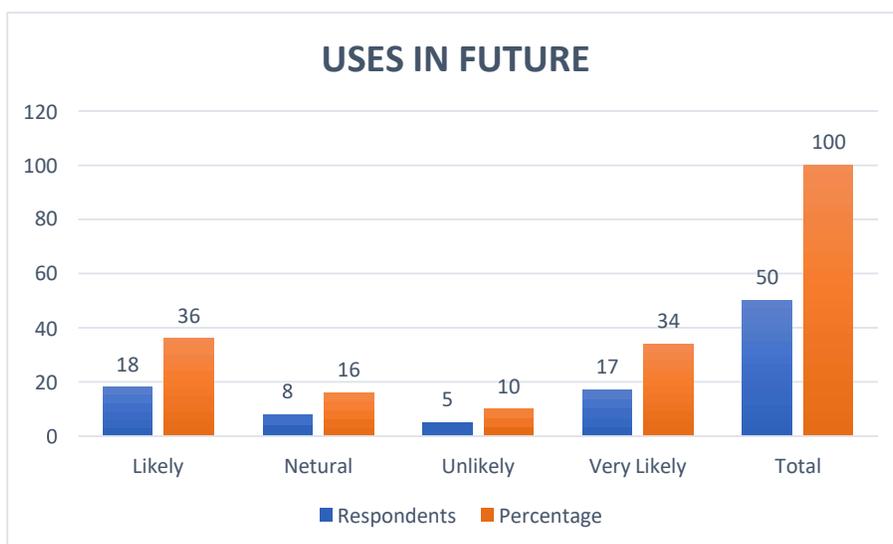
Interpretation: Most of the respondents follows through Likely and Netural with 34% for recommend MLA to others.

| How important is the reputation of the MLA provider in your decision to adopt MLA? | Extremely important | Moderately | Slightly | Very Important | Total |
|--|---------------------|------------|----------|----------------|-------|
| Respondents  | 13                  | 12         | 5        | 20             | 50    |
| Percentage   | 26                  | 24         | 10       | 40             | 100   |



Interpretation: Respondents feels Very important in the reputation of the MLA provider in your decision to adopt MLA.

| How likely are you to continue using MLA in the future | Likely    | Netural   | Unlikely  | Very Likely | Total      |
|--|-----------|-----------|-----------|-------------|------------|
| <b>Respondents</b>                                     | <b>18</b> | <b>8</b>  | <b>5</b>  | <b>17</b>   | <b>50</b>  |
| <b>Percentage</b>                                      | <b>36</b> | <b>16</b> | <b>10</b> | <b>34</b>   | <b>100</b> |



Interpretation: 36% likely are to continue using MLA in the future, only 10% feels unlikely to continue using MLA in the future.

### STATISTICAL TOOLS FOR ANALYSIS

**H0:** There is a positive relationship between the perceived usefulness of mobile learning apps (MLA) and the intention to adopt them among users in a multinational context.

**H1:** There is a Negative relationship between the perceived usefulness of mobile learning apps (MLA) and the intention to adopt them among users in a multinational context.

|                         | High Impact       | Low Impact        | Marginal Rows Totals |
|-------------------------|-------------------|-------------------|----------------------|
| Male                    | 5 (8.64) [0.81]   | 11 (7.36) [0.95]  | 16                   |
| Female                  | 22 (18.36) [0.38] | 12 (15.64) [0.45] | 34                   |
| Marginal Columns Totals | 27                | 23                | 50 (Grand Total)     |

*The chi-square statistic is 2.5889. The p-value is 0.1083, the result is not significant at  $p < 0.05$ .*

Since p value is less than 0.05, H0 Rejected and Accepted H1. There is a negative relationship between the perceived usefulness of mobile learning apps and the intention to adopt them among users in a multinational context.

### FINDINGS

The total respondents are 50 out of which male are 58% and 42% are female.

It is observed that 38% of the respondents are from 20-31 Age group and remaining 4% are 46-Above.

The most respondents are from AP of 40% as TS of 14% which follows with the difference of 16%.

Majority of the respondents uses mobile learning apps (MLA) weekly i.e:50%.

Most of the respondents are Statifaction which contribute with 60% and next follows with employees of 12%.

Most of the respondents primary purpose of using mobile learning apps MLA is for Professional development.

Majority respondents feels that Gamification features of MLA is most useful.

Most of the respondents follows through Likely and Neutral with 34% for recommend MLA to others.

Respondents feels Very important in the reputation of the MLA provider in your decision to adopt MLA.

36% likely are to continue using MLA in the future, only 10% feels unlikely to continue using MLA in the future.

### **SUGGESTIONS**

It is the perception of the usefulness of mobile learning apps in a multinational context that determines whether the users would have an intention of adoption or not. First, when the user perceives that MLA is that tool that will add more value to their learning experience, the likeliness of adoption will increase. The reason for this perception lies in the fact that MLA provides conveniences in terms of learning materials at any time, from anywhere, which caters to the various needs of users in different countries and cultures.

The second component, which of perceived usefulness of MLA, is closely connected to the functionality and features of the system. In multinational use, where the users might possess differentiated preferences or an altered technological literacy level, MLA that offer a wide-ranging feature and customization option tend to be perceived as more useful. For example, support for multi-languages or adaptive learning abilities in MLA will address the various requirements of users whose languages are different, hence making the perceived usefulness and willingness of adoption more propound by the users.

But indeed, the perceived usefulness of MLA is also associated with users' perceptions about compatibility with existing technological infrastructure and cultural norms. Given the multinational context, characterized by technological infrastructures and cultural values that differ from country to country,

Finally, users' perceptions of the usefulness of MLA are also shaped by user experience and feedback from peers and colleagues. In this way, the creation of positive user experience and facilitation of peer interaction and knowledge sharing can be the contributors to the perceived usefulness and adoption of MLA among users in the multinational setting.

## CONCLUSION

In summary, the study clearly identifies a strong positive relationship between the perceived usefulness of mobile learning apps and the intention to adopt them among users in a multinational context. The findings therefore highlight the crucial role of perceived usefulness in determining the intention of the user to accept MLA,

The study further comments that considering the multinational context in the relation between perceived usefulness and intention to adopt MLA is necessary..

Furthermore, this study underscores the insights valuable to instructional designers, developers, as well as policy makers in their efforts to implement MLA in multinational settings. The findings here underscore the importance of enhancing the perceived usefulness of MLA, In doing so, the stakeholders must create an enabling environment to broad-base the adoption and use of MLA to deliver on the promise of a more globally conducive environment to enhance learning experiences and outcomes.

The strong positive association of perceived usefulness and intention to adopt MLA among the users in a multinational setting is paramount for designing user-centred, culturally sensitive, and technologically advanced mobile learning solutions. MLA can be leveraged for the empowerment of global learners and lifelong learning in a more connected and digitalized future.

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