Investigating the Influence of User Training on the Adoption of Desktop Open Source Software: A Case of Students in Selected Universities in Kenya

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ABSTRACT

The adoption of Open Source Software (OSS) has been increasing in some regions, while proprietary software remains dominant in many African countries. This study examines the role of user training as a facilitating condition for OSS adoption among university students in Kenya, with job market demands serving as a moderator. Using the Extended Unified Theory of Acceptance and Use of Technology (UTAUT), the research explores how user training influences OSS adoption and whether job market demand for OSS skills affects this relationship. The research adopted a descriptive research design and a quantitative approach. Data were collected from a purposive sample of 384 students identified through snowballing technique. This sample was drawn from 5 randomly selected Kenyan universities. Data were collected using questionnaires with Likert scale questions and analyzed quantitatively using descriptive statistics (medians, modes) and inferential statistics (correlation and regression analysis). This study examined the relationships between User Training, OSS Adoption, and Job Market Demands using descriptive statistics, correlation, and regression analyses. Descriptive results indicated limited OSS training (median = 2.00) but high perceived job market demands for OSS skills (median = 4.00). Correlation analyses revealed weak, non-significant relationships among the three variables. Regression analysis found no significant direct effect of User Training on OSS Adoption ($B = 0.158$, $p = .117$, $R^2 = 0.006$). Additionally, Job Market Demands did not moderate this relationship ($B = -0.020$, $p = .230$, $\Delta R^2 = 0.001$). These findings suggest that training alone may not drive OSS adoption, highlighting the need for broader systemic factors, which future research should explore. To foster greater OSS adoption, interventions should combine user training with strategies that address barriers to adoption and align with users' specific needs. The study underscores the importance of developing a deeper understanding of OSS, especially among individuals who acknowledge its job market value but are not sufficiently motivated to adopt it on their own.

Keywords: Developing Countries, Job Market Demands, Open Source Software, OSS Adoption, OSS Skills, User Training

I. INTRODUCTION

Open-source software (OSS) has become a powerful force in the digital landscape, offering a variety of applications that are freely available. Advocates of OSS often emphasize its many advantages, including cost-effectiveness, flexibility, and the absence of licensing fees, making it an attractive alternative to proprietary software (PS). However, despite these advantages, OSS adoption remains limited in several regions, particularly in sub-Saharan Africa (Domingos, et al., 2023). In particular, university students in Kenya who are typically considered early adopters of new technologies have shown a reluctance to embrace OSS, despite its potential to meet their academic, personal, and professional needs. This slow adoption raises an important question: what factors are inhibiting the widespread use of OSS among university students in Kenya and other similar developing contexts?

The slow pace of OSS adoption in Kenya is not an isolated issue but reflects broader challenges faced by many African countries (Kamau & Namuye, 2012). While OSS adoption in developed nations and even some non-African developing countries has been more robust, the uptake in African nations lags considerably. Several reasons contribute to this discrepancy, including limited access to training, lack of technical expertise, insufficient infrastructure, and a general lack of awareness about the benefits of OSS (Domingos, et al., 2023). As university students represent a significant portion of potential OSS adopters, understanding the barriers they face is crucial for promoting the adoption of OSS in Kenya. These students, often at the forefront of new technological trends, could play a pivotal role in driving the growth of OSS if the challenges preventing their engagement can be addressed.

The existing body of literature suggests that OSS has the potential to be a game-changer, particularly in developing countries, by offering high-quality, cost-free alternatives to expensive proprietary software. However, the research also indicates that many users in Kenya and other African countries struggle to adopt OSS due to factors such as inadequate technical support, insufficient training, and the lack of a conducive ecosystem that supports the use of

these technologies. Without the necessary infrastructure, resources, and support systems, even the most promising technologies can fail to gain traction among potential users (Aqlan et al., 2021).

One of the most critical barriers to OSS adoption in developing contexts is the absence of sufficient training and technical support. As identified in the Extended Unified Theory of Acceptance and Use of Technology (EUTAUT), facilitating conditions such as user training and technical support are crucial factors influencing the acceptance and successful use of technology (Venkatesh et al., 2012). For OSS, the lack of formal customer service structures often associated with proprietary software makes it difficult for users to resolve issues independently, leading to frustration and a reluctance to adopt OSS. Furthermore, the technical complexities involved in OSS applications can discourage users from trying or continuing to use them (Aqlan, et al., 2021). Training is therefore crucial to equipping users with the knowledge and confidence they need to overcome these barriers and fully utilize OSS.

This paper aims to explore the factors influencing OSS adoption among university students in Kenya, with a particular focus on the role of user training and technical support. By investigating the facilitating conditions for OSS adoption through the lens of the EUTAUT framework, this study seeks to provide insights into the necessary conditions for successful OSS adoption. Furthermore, it will explore how external factors, such as job market demands for technical skills, may moderate the relationship between user training and OSS adoption, potentially offering new avenues for increasing engagement with OSS in Kenya. The findings of this study could contribute significantly to improving the uptake of OSS in developing contexts, ultimately driving technological empowerment in regions with limited access to proprietary software.

1.1 Statement of the Problem

There is a wealth of open-source software (OSS) available on the internet for download and adoption, yet recent studies have indicated that users of desktop applications in Africa have not widely adopted these applications (Domingos et al., 2023; Bwalya et al., 2019; Chijikwa, 2021). In particular, university students, who are often at the forefront of adopting new technologies, have shown limited engagement with OSS (Njeru et al., 2023). Advocates of OSS have extensively promoted the software, emphasizing its accessibility since it can be downloaded and adopted at no cost and its ability to offer the same functionality as proprietary software (PS) counterparts (Kandar et al., 2011). OSS proponents argue that it provides numerous advantages such as reliability, stability, flexibility, freedom, and the absence of licensing fees.

Despite these advantages, the adoption of OSS in regions like Africa, and specifically in Kenya, remains relatively low. The uptake of OSS products in African countries has been much slower compared to both non-African developing countries and developed nations (Asunbiaro, 2024; Mutula & Kalaote, 2010). Several factors could contribute to this slow adoption, including limited technical skills, lack of awareness, and insufficient user support (Kamau & Namuye, 2012; Domingos, et al., 2023). Despite the growing adoption of Open Source Software (OSS) globally, there is limited research that specifically investigates the adoption of OSS in the context of African countries, particularly within higher education institutions. While several studies have explored OSS adoption in developed countries or among specific user groups, there is a noticeable lack of studies addressing the role of user training in facilitating OSS adoption among university students in Sub-Saharan Africa, where proprietary software often remains dominant. As university students represent a significant portion of potential OSS adopters, understanding the barriers to adoption within this demographic is critical for the successful implementation and growth of OSS in Kenya and similar contexts.

1.2 Research Hypothesis

Thus, the hypothesis;

Ho_1: User training of Open Source software has a positive correlation with its adoption

Ho_2: job market demands has a moderating effect on the relationship between User Training and OSS Adoption.

II. LITERATURE REVIEW

2.1 Theoretical Review

Popular technology adoption models, such as the Extended Unified Theory of Acceptance and Use of Technology (EUTAUT), have identified user training and support as major facilitating factors influencing technology adoption. The EUTAUT model suggests that external factors, referred to as facilitating conditions, play a crucial role in shaping technology acceptance (Venkatesh et al., 2012). These conditions include the availability of resources, infrastructure, and support systems, which make it easier for users to adopt and successfully use technology. In the case of OSS, facilitating conditions such as user training**,** technical support, and infrastructure are critical to overcoming the barriers that users face when adopting open-source applications.

Within the EUTAUT framework, facilitating conditions refer to external factors that support or hinder the successful use of technology. For OSS adoption, user training stands out as one of the most important facilitating

conditions. Training provides users with the necessary skills and knowledge to effectively use OSS, thus influencing their perception of the software's ease of use (effort expectancy) and usefulness (performance expectancy). Research consistently shows that user training enhances technology acceptance by reducing the barriers associated with learning new systems and tools (Nelson & Cheney, 1987). Without adequate training, users may struggle with technical complexities, resulting in frustration and eventual rejection of the technology.

Recent studies also support the idea that training is crucial for successful technology adoption, especially in developing countries. In a study investigating the acceptance of mobile banking in developing countries, it was found that training empowered users by providing them with the necessary expertise, information, knowledge, and confidence to accept and use the technology (Mostafa & Eneizan, 2018; Pal, et al., 2020). Pal et al., (2020) emphasized that training plays a critical role in empowering users to adopt mobile banking, by reducing barriers to understanding the technology and enhancing users' confidence in using it. These findings are directly relevant to OSS adoption, as they highlight the importance of training in facilitating the acceptance of new technologies in developing contexts.

In addition to training, technical support is another essential facilitating condition for OSS adoption. While OSS is typically free to use, it often lacks the formal customer service structures found in proprietary software. This can pose a significant challenge for users unfamiliar with the software. To address this, community-based support systems or institutionalized helpdesks can provide users with troubleshooting resources and guidance, thus increasing confidence in adopting and using OSS.

The EUTAUT framework offers a comprehensive approach to understanding technology adoption, highlighting the role of facilitating conditions such as user training, infrastructure, technical support, and social influence. In the case of OSS adoption among university students in Kenya, these external factors play a crucial role in determining whether students perceive OSS as usable, valuable, and worth adopting. By critically examining these facilitating conditions, this study aims to explore the relationship between user training and OSS adoption, providing insights into how targeted interventions can enhance OSS uptake. Furthermore, by considering the moderating effect of job market needs, the research will provide a nuanced understanding of how external factors contribute to the adoption of open-source technologies in developing contexts like Kenya.

2.2 Empirical Review

Many researchers have confirmed that training plays a crucial role in the adoption of computer applications and technology (Aqlan, et al., 2021). Benzine and Tiar (2022) conducted a study that explored the factors influencing adoption of Accounting Information Systems technology in Algerian firms, using an enhanced version of the Technology Acceptance Model (TAM). Their findings underscore the critical importance of training in the adoption process. The study established that training has a direct impact on both perceived usefulness and ease of use, which are essential factors for successful technology acceptance. Additionally, the study emphasizes that experience influences the perceived inevitability of change, underlining how training can mitigate resistance to technological shifts. Importantly, the research also revealed that training has a profound effect on users' continuance intention, suggesting that well-executed training is key to sustained technology usage (Benzine & Tiar, 2022). These findings highlight the centrality of training in shaping users' perceptions and fostering the continued use of technology within organizations.

Diansari et al., (2020) further emphasized the importance of training in the context of university-based information systems. Their study at Udayana University in Indonesia found that user training, alongside management support and user involvement, significantly impacted the performance of accounting information systems. Organizational commitment was shown to moderate this relationship, indicating that a strong organizational culture enhances the benefits of training.

In a related context, Kusuma et al., (2017) explored factors influencing the continuance intention of information system usage in a travel agency. Their findings revealed that user satisfaction, influenced by both initial training and system quality, was a strong predictor of ongoing system usage. This reinforces the argument that training is not just a one-time activity but a continuous process that sustains user engagement.

Similarly, Laila et al., (2021) investigated the impact of four key quality dimensions; training, service, information systems, and information on system usage in information-intensive sectors. The study concluded that among these, training quality had the most significant influence on users' ability and willingness to effectively utilize information systems.

This study also explores whether external factors, such as the current job market needs in Kenya, have a moderating effect on the relationship between user training and OSS adoption. As the demand for technical skills in Kenya continues to rise, particularly in fields like software development and IT support, university students are becoming more motivated to learn OSS tools that are commonly used in the industry. This growing demand for technical skills can enhance the perceived value of OSS, making students more likely to engage in training programs to acquire the necessary competencies. In this way, job market needs as a variable has the potential of acting as a moderating factor in the adoption process, aligning training opportunities with the skills required in the professional world.

III. METHODOLOGY

3.1 Research Design and Approaches

The research adopted a descriptive research design to investigate the two hypotheses in this study. This approach was particularly suitable as it enabled an accurate portrayal of the current situation without influencing or manipulating the variables under investigation. Additionally, the study employed a quantitative methodology. The descriptive research design played a critical role in assessing the levels of training in the use of Open Source Software (OSS). As Kothari and Garg (2023) emphasizes, the primary function of descriptive research is to provide a clear description of the existing state of affairs, capturing the nuances of the present situation.

This design is particularly appropriate for this study as it allows for the observation and reporting of the state of OSS training offerings at the time of the research, without controlling or altering any of the influencing variables (Kothari & Garg, 2023). The research also utilized this design and a quantitative approach to infer potential relationships between OSS training, adoption and job market demands. This ability to identify patterns and correlations, without manipulating the study environment, is a key strength of descriptive research.

3.2 Population of the Study

The target population for this study consists of students from both private and public universities across Kenya. However, the relevant population for this research was limited to students who are familiar with Open Source Software (OSS) products, regardless of whether they use them. These subjects were identified through snowballing technique. This is because these students would be able to respond to the survey questions based on their knowledge and recognition of OSS, providing informed insights.

3.3 Sample Size

The population of students in Kenyan universities is finite as recorded by the Kenya Bureau of Statistics and the formula below was used to determine the sample size (Kothari & Garg, 2023).

$$n = \frac{z^2 \cdot p \cdot q \cdot N}{e^2(N-1) + z^2 \cdot p \cdot q}$$

Where:

p = sample proportion, (0.5, used for maximum sample size when proportion is unknown);
z = the value of the standard variate at a given confidence level 95% confidence level (1.96);
N = size of population (2,181,158 university students)
e = acceptable error (the precision) is (0.05 or 5%)
n = sample size
Substituting these values:

$$n = \frac{[(1.96)^2 \cdot (0.5) \cdot (0.5) \cdot (2{,}181{,}158)]}{[(0.05)^2(2{,}181{,}158-1) + (1.96)^2 \cdot (0.5) \cdot (0.5)]}$$

$$n = \frac{[3.8416 \cdot 0.25 \cdot 2{,}181{,}158]}{[0.0025 \cdot 2{,}181{,}157 + 3.8416 \cdot 0.25]}$$

$$n = \frac{2{,}095{,}143.74}{5{,}453.85}$$

$$n = 384.16$$

Based on this calculation, the sample size used for the study was rounded to 384 students.

3.3.1 Sampling Procedures

Purposive sampling was employed to select the sample for this study. This non-probability sampling technique allows the researcher to make deliberate decisions about which individuals to include in the sample, based on specific criteria, such as their specialized knowledge or relevance to the research topic (Campbell, et al., 2020). In this case, purposive sampling was chosen to ensure the inclusion of students who are familiar with Open Source Software (OSS) products, as their knowledge would provide valuable insights for the research. These subjects were identified through snowballing technique. Identification of universities to be used in the study was done through simple Random sampling.

3.4 Data Collection Methods

Closed-ended questionnaires, primarily featuring Likert scale questions with predefined dichotomous answers, were prepared. The respondents were a sample population of students from Kenyan universities. This method was chosen because questionnaires are easy to analyze, simple to administer, and allow for standardized data collection.

Random sampling was employed to select the respondents, with the sample size determined by the number of universities in Kenya and the total student population.

3.5 Data Analysis

Quantitative research was utilized to analyze data that could be measured numerically, providing a clear representation of the extent of OSS training offered in institutions (Walliman & Walliman, 2021). The quantitative data analysis included the use of descriptive statistics, such as medians and modes, and inferential statistics, including correlation and regression analysis.

IV. FINDINGS & DISCUSSION

4.1 Findings

This section presents the results of the statistical analysis conducted to examine the direct effect of user training on open-source software (OSS) adoption (Hypothesis 1) and the moderating effect of job market demands on this relationship (Hypothesis 2). The analysis included descriptive statistics, correlation analysis, linear regression, and moderation analysis.

4.1.1 Descriptive Statistics

Descriptive statistics were computed for the User Training, OSS Adoption, and Job Market Demands scales. Given that the variables were measured using Likert scales (ordinal data), the median and mode are more meaningful indicators of central tendency than the mean and standard deviation. Table 1 presents the median and mode for each variable.

Table 1

Descriptive Statistics for User Training, OSS Adoption, and Job Market Demands Variables

Variable	Median	Mode	Min	Max
I have been trained to use OSS	1	1	1	4
Training on OSS increases productivity	5	5	2	5
General computer training covers OSS	1	1	1	4
Knowledge of using OSS	2	2	1	4
Can easily find training on OSS	2	2	1	3
OSS makes work more interesting	2	2	1	5
I like using OSS	2	2	1	5
Jobs require OSS knowledge	4	4	1	5
Career guidance mentions OSS	4	4	1	5

The median value for the OSS Adoption scale was 2.00, suggesting that participants were generally neutral about adopting OSS. The User Training scale had a median score of 2.00, indicating limited training in OSS. The Job Market Demands scale had a median score of 4.00, suggesting that respondents perceived relatively high job market demands for OSS skills.

4.1.2 Correlation Analysis

Pearson and Spearman correlation coefficients were computed to assess the strength and direction of the relationships among User Training, OSS Adoption, and Job Market Demands. Table 3 summarizes the correlation results.

Table 3

Correlations between User Training, OSS Adoption, and Job Market Demands

Variable	User Training	OSS Adoption (Adjusted)	Job Market Demands
1. User Training	—	0.080 (p = .117)	0.012 (p = .813)
2. OSS Adoption (Adjusted)	0.080 (p = .117)	—	-0.062 (p = .222)
3. Job Market Demands	0.012 (p = .813)	-0.062 (p = .222)	—

The correlation between User Training and OSS Adoption was positive but weak and not statistically significant ($r = 0.080$, $p = .117$). The relationship between Job Market Demands and OSS Adoption was weak and negative but also non-significant ($r = -0.062$, $p = .222$). Spearman correlations showed similar patterns, with none of the relationships reaching statistical significance.

4.1.3 Linear Regression Analysis

Ho_1: Direct Effect of User Training on OSS Adoption

To test the direct effect of User Training on OSS Adoption (Hypothesis 1), a linear regression analysis was conducted. The regression model was not significant, **F(1, 382) = 2.475, p = .117**, and explained only **0.6%** of the variance in OSS Adoption (**R^2 = 0.006**). The regression coefficient for User Training was positive but not statistically significant (**B = 0.158, p = .117**). Table 4 summarizes the regression results.

Table 4

Linear Regression Results for the Effect of User Training on OSS Adoption

Predictor	B	SE	β	t	p
Constant	1.675	0.213	—	7.859	0
User Training	0.158	0.1	0.08	1.573	0.117

A Mann-Whitney U test was conducted as a non-parametric alternative. The test showed no significant difference in OSS Adoption between low and high User Training groups (U = 67,832, p = .118). Therefore, Hypothesis 1 was not supported.

4.1.4 Moderation Effect of Job Market Demands

To test whether Job Market Demands moderated the relationship between User Training and OSS Adoption (Hypothesis 2), a hierarchical regression analysis was conducted. In Step 1, User Training and Job Market Demands were entered as predictors. In Step 2, the interaction term (User Training × Job Market Demands) was added. The interaction term was not significant (B = -0.020, p = .230), and the change in R^2 was negligible ($\Delta R^2 = 0.001$), indicating that Job Market Demands did not moderate the relationship between User Training and OSS Adoption. Table 5 presents the results of the moderation analysis.

Table 5

Moderation Analysis of Job Market Demands on the Relationship between User Training and OSS Adoption

Model	R^2	ΔR^2	F	p	Interaction Coefficient (B)	SE	p
Step 1	0.006	—	2.475	0.117	—	—	—
Step 2	0.007	0.001	0.976	0.23	-0.02	0.021	0.23

Since the interaction term was not significant, a simple slopes analysis was not conducted. Therefore, Hypothesis 2 was not supported.

4.1.5 Hypothesis Testing and Overall Implications

The failure to support Hypotheses 1 and 2 provides important insights into the dynamics of OSS adoption. Hypothesis 1 predicted a direct effect of user training on OSS adoption, but the regression analysis and Mann-Whitney U test both failed to find a significant relationship. This suggests that training alone may not be a sufficient condition for the adoption of OSS. In other words, while training may help users acquire the necessary skills to use OSS, it does not necessarily translate into a higher likelihood of adopting it. The factors influencing OSS adoption may be more complex, involving considerations such as organizational support, cost, perceived benefits, and the availability of alternative software solutions.

Similarly, Hypothesis 2, which posited that job market demands would moderate the relationship between user training and OSS adoption, was not supported. The moderation analysis showed that job market demands did not significantly influence the relationship between user training and OSS adoption. This indicates that, while individuals may recognize the importance of OSS skills in the job market, this awareness does not necessarily lead to a greater adoption of OSS, even when training is available. It is possible that individuals may perceive the market demands for OSS skills as distant or abstract, or they may prioritize other factors, such as learning skills that are immediately applicable to their current job tasks, over acquiring OSS-related competencies.

4.1.6 Summary of Findings

Hypothesis 1 predicted that user training would have a positive and direct effect on OSS Adoption. However, the regression analysis and Mann-Whitney U test both failed to find a significant relationship between User Training and OSS Adoption. Therefore, Hypothesis 1 was not supported. Hypothesis 2 predicted that job market demands would moderate the relationship between User Training and OSS Adoption. However, the moderation analysis showed that the interaction effect was not significant, and Hypothesis 2 was not supported.

4.2 Discussion

The findings from the data provide valuable insights into the factors influencing the adoption of Open Source Software (OSS) and its relationship with user training and job market demands. These results reveal some important nuances that can guide future research and practical interventions aimed at fostering greater OSS adoption. The key findings indicate a generally neutral stance towards OSS adoption, limited user training, and a recognition of high job market demands for OSS skills. Despite these trends, the analysis shows that neither user training nor job market demands had a significant effect on OSS adoption, challenging the initial hypotheses. These findings agree with those of other studies conducted in developing counties such as the one conducted by Patiño-Toro et al, (2022) which revealed that several factors are at play in determining OSS adoption among students in emerging economies.

4.2.1 OSS Adoption: A Neutral Stance

The median value of 2.00 for the OSS Adoption scale suggests that participants were largely neutral about adopting OSS. This could indicate a hesitancy or indifference toward OSS, which may be due to various factors such as a lack of awareness, perceived complexity, or concerns about support and reliability a finding that is consistent which those of Asunbiaro, (2024) and Domingos et al., (2023). In the context of software adoption models, the neutral position aligns with the idea that individuals and organizations may not have a strong preference for either proprietary or open-source solutions, particularly if the perceived benefits and ease of use of OSS are not clearly communicated or demonstrated.

This neutral stance is interesting because it contrasts with the high job market demand for OSS skills, suggesting that while employers value OSS proficiency, individuals may not perceive a strong incentive or motivation to adopt it themselves. This disconnect between market demand and individual adoption may also reflect a gap in education or awareness about the advantages of OSS, which could be addressed through more targeted training programs or outreach efforts.

4.2.2 Limited User Training in OSS

The median score of 2.00 for the User Training scale indicates that participants reported having limited training in OSS. This finding is critical because it suggests that lack of training may be a barrier to OSS adoption. Without sufficient training, individuals may be less likely to adopt OSS due to perceived difficulty or a lack of confidence in using the software effectively. This is consistent with prior research which has highlighted the importance of adequate training and support in the adoption of new technologies (Domingos, et al., 2023). Training can help users understand the practical benefits of OSS, build familiarity with its interface, and overcome potential challenges associated with implementation.

However, the lack of a significant relationship between user training and OSS adoption, as demonstrated by the regression analysis and Mann-Whitney U test, suggests that training alone may not be enough to drive OSS adoption. While training is an important factor, other considerations, such as organizational culture, software compatibility, or perceived risk, may play a more substantial role in determining whether individuals or organizations choose to adopt OSS a finding that is consistent with that of Domingos, et al., 2023. Therefore, a more holistic approach that combines training with other strategies such as showcasing success stories or offering incentives for OSS adoption may be necessary to encourage widespread use.

4.2.3 Job Market Demands and Its Influence

The high median score of 4.00 on the Job Market Demands scale reflects a strong perception that OSS skills are highly valued in the job market. This finding aligns with existing research that highlights the growing recognition of open-source skills in various industries (Quinn, 2021). The recognition of high job market demands for OSS skills is encouraging, as it suggests that individuals who acquire OSS expertise may have a competitive advantage in the workforce.

However, the results from the correlation and regression analyses show that job market demands did not have a significant effect on OSS adoption. Despite participants perceiving high demand for OSS skills, this perception did not translate into a stronger motivation to adopt OSS. This finding is intriguing and may suggest that, while individuals recognize the value of OSS in the job market, other factors such as familiarity with proprietary alternatives or a lack of time and resources for learning OSS may prevent them from engaging with open-source software. Moreover, it is possible that the perceived demand for OSS skills may be more relevant to employers seeking to hire individuals with specific technical competencies, rather than motivating individuals to adopt OSS in their personal or professional work.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

In conclusion, the findings from this study reveal that while Open Source Software (OSS) adoption is generally perceived neutrally, there is strong recognition of its value in the job market. Despite this recognition, neither user training nor job market demands had a significant direct impact on OSS adoption. These results suggest that the adoption of OSS is influenced by a more complex set of factors than initially anticipated. Although user training is a key enabling factor, its impact on driving OSS adoption appears to be limited, and the job market demands for OSS skills, while perceived as high, were not strong enough to create significant motivation for adoption among students. Specifically, the absence of demand for Desktop OSS skills in the Kenyan job market may signal that employers do not prioritize OSS proficiency when seeking prospective employees. This lack of market-driven demand could be a crucial factor in the neutral stance toward OSS adoption among students.

5.2 Recommendations

Given these findings, it is clear that other determinants, such as organizational culture, access to OSS resources, and user experiences with proprietary software, likely play a more prominent role in influencing OSS adoption. Therefore, future research should investigate these factors more deeply to identify the broader contextual elements that shape OSS adoption decisions. Additionally, interventions aimed at increasing OSS adoption must go beyond training and address other barriers such as access to OSS tools, perceived risks, and the availability of support systems. Aligning interventions with the specific needs and realities of potential users will be essential for overcoming resistance to OSS adoption.

Furthermore, these findings emphasize the need to foster a deeper and more practical understanding of OSS, particularly among those who already recognize its value in the job market but may lack the motivation, resources, or confidence to engage with OSS technologies. By addressing these gaps in both awareness and resources, stakeholders can help bridge the divide between the perceived value of OSS and actual adoption.

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