
PERCEIVED EASE OF USE AND USEFULNESS AS DETERMINANTS OF THE USE OF WEB BASED SURVEY BY STUDENTS FOR RESEARCH

Kehinde Helen Odeleye¹

¹ Department of Library, Archival and Information Studies, University of Ibadan, Ibadan, Nigeria

Corresponding author: helenleye01@gmail.com

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Abstract

The rapid digitalisation of academic environments has fundamentally altered the manner in which students approach data collection. This study investigates perceived ease of use and perceived usefulness as determinants of the use of web based survey tools by students, within the interpretive framework of the Technology Acceptance Model. Employing a descriptive survey research design, data were collected from 157 students at the Faculty of Management Science, University of Benin, through a proportionate stratified random sampling technique. The data were analysed by means of descriptive statistics, and frequency distributions and simple percentages were used to summarise the perceptions of respondents. The study is explicitly descriptive in orientation, for the Technology Acceptance Model is employed as an interpretive and organisational lens rather than as a formally tested causal model. The binary response format of the instrument does not support the regression or structural equation modelling that would be required to test the predictive hypotheses of the model, and no claim to have tested those relationships is advanced. The reliability of the instrument was established through the test and retest method, which yielded an overall Cronbach alpha of 0.78 and thereby indicated satisfactory internal consistency. The findings reveal a high level of awareness, at 77.1 percent, regarding web based survey tools, and they indicate that students adopt these technologies principally for their capacity to reduce physical stress, to minimise cost, and to provide rapid data turnaround. The study identifies significant barriers, among them non response bias, a deficiency in the advanced technical skills required for survey customisation, and growing concern over data privacy. The study concludes that, although perceptions of ease and usefulness are high, institutional intervention is required to improve the methodological rigour of student led online research, and it recommends that future studies employ continuous scale instruments and inferential methods in order to test the predictive pathways of the model formally within this population.

Keywords: Web based survey; Technology Acceptance Model; Perceived ease of use; Perceived usefulness; Student research

1. Introduction

In the contemporary era of the Fourth Industrial Revolution, the landscape of social science and management research has undergone a pronounced transformation. Traditional paper and pencil interviewing is increasingly superseded by computer assisted web interviewing. This transition represents not merely a change of medium but a fundamental shift in the methodology of engagement between researchers and participants. For students in the management sciences, the capacity to deploy web based surveys is frequently regarded as a critical competency that bridges the distance between academic theory and the practice of data analytics. In the present research era, web based surveys are no longer merely an alternative vehicle for data collection but increasingly the established standard.

Recent literature emphasises that the global pandemic acted as a permanent catalyst that normalised digital data collection across all demographics (Akintunde et al., 2021). The integration of artificial intelligence and machine learning has further transformed the web survey from a static form into an adaptive instrument capable of real time validation of data (Goepel, 2024). While the core advantages of cost and speed endure, contemporary scholarship now attends to the complexities of mobile optimised design and to the ethical imperatives of data privacy within a highly regulated digital economy. This study seeks to examine how these evolved web based methods bear upon the integrity of data in the current research climate.

1.1 Statement of the Problem

Despite the ubiquity of smartphones and high speed internet in urban centres such as Benin City, many students continue to struggle to produce high quality research through web based tools. The principal sources of difficulty in conducting a web based survey include sampling, coverage, and non response, even in communities where connectivity is almost universal. A disconnection therefore persists between access to technology and the competence to use it effectively. Earlier observation suggests that student researchers frequently encounter low response rates, samples biased toward those with internet access, and technical difficulty in the cleaning of data. Non response error arises when not all members of a sample are willing to complete the survey or fail to finish it. This study seeks to bridge this gap by determining whether the difficulty resides in the perception of the tools as difficult or in their perceived lack of value within the local academic culture.

1.2 Objectives and Research Questions

The study set out to evaluate the level of awareness and technical familiarity that students possess in respect of various web based survey platforms, to identify the specific types of web based survey most frequently used for academic research, to determine the processes involved in the transition from paper based to web based research, to analyse the relationship between the perceived benefits of cost, time, and reduced stress and the actual rate of adoption, and to identify and categorise the technical and systemic challenges faced by students at the University of Benin. The study is accordingly guided by four research questions. First, to what extent are students in the Faculty of Management Science aware of web based survey methodologies? Second, what are the dominant

processes and types of digital survey used for academic research? Third, how do perceived ease of use and perceived usefulness influence the choice of survey medium? Fourth, what are the primary technical and environmental barriers that prevent successful web based data collection?

2. Literature Review

The adoption of digital research tools has grown rapidly, particularly in the wake of the global pandemic. Singh and Sagar (2021) observe that the pandemic functioned as a digital accelerator and compelled students who had previously hesitated to adopt online tools to master them out of necessity. The apparent ease of these tools can nonetheless prove deceptive. Regmi et al. (2017) argue that, while it is a simple matter to construct and circulate a survey, the methodological rigour of the exercise frequently suffers. Problems such as survey fatigue, in which potential respondents are overwhelmed by the volume of online requests, have contributed to a decline in response rates (Rybak, 2023). Zimba and Gasparyan (2023) further emphasise that students often overlook the ethical dimensions of web based research, among them digital informed consent and the encryption of data, which have become critical components of contemporary research ethics.

Within the African context the digital divide remains a significant variable. Ben Youssef et al. (2022) found that, even where students perceive a tool as useful, infrastructural deficits such as inconsistent connectivity and the high cost of data act as negative moderators that override the benefits conferred by ease of use and usefulness. Web based surveys, also termed online surveys, are instruments of data collection administered through the internet, and they enable researchers to reach respondents by electronic mail, through social media platforms, or by means of embedded links (Zimba and Gasparyan, 2023). Unlike paper and pencil interviewing, web based surveys offer dynamic functionality such as skip logic, real time validation, and the integration of multimedia, all of which enhance both the experience of the respondent and the efficiency of collection (Regmi et al., 2017).

For students in higher education, web based surveys have moved from an optional tool to a standard methodology, a shift accelerated by the Fourth Industrial Revolution and by the pandemic, which normalised digital data collection across academic disciplines (Akintunde et al., 2021). The widespread adoption of web based surveys among students may be attributed to three principal factors, namely the reduction of physical stress, the minimisation of cost, and rapid data turnaround, all of which align closely with the constructs of perceived ease of use and perceived usefulness within the Technology Acceptance Model (Davis, 1989; Venkatesh and Davis, 2000).

2.1 Reduction of Stress, Cost, and Time

Traditional paper based surveys demand extensive physical effort, including the printing of questionnaires, their manual distribution, and the subsequent collation and entry of data, a process that is laborious and frequently exhausting for the student researcher. Web based surveys remove these burdens, since a single digital instrument may be disseminated to hundreds of respondents with a few actions, and automated export removes the need for manual entry (Zimba and Gasparyan, 2023). Schroeder et al. (2023)

observe that perceived ease of use correlates directly with reduced anxiety in the adoption of technology, a finding that resonates with students who labour under tight academic timelines. Cost is a further consideration of particular weight for students, many of whom operate with limited resources. Free platforms permit the creation of sophisticated questionnaires without financial outlay, and even premium platforms, when provided under institutional licence, are often accessible at no direct cost (Sarab et al., 2016). Ben Youssef et al. (2022) note that, in developing economies such as Nigeria, the savings associated with digital tools constitute a significant driver of adoption. The compression of the data collection timeline is equally consequential, for once a survey link is shared responses may begin to arrive within minutes, and modern platforms incorporate features such as automated reminders that further expedite collection (Goepel, 2024; Rybak, 2023).

2.2 Barriers to Effective Use

Despite these advantages, student researchers confront significant barriers that can undermine the quality and validity of their web based research, of which the two most persistent are non response bias and a deficiency in the advanced technical skills required for customisation. Non response bias arises when those who elect to participate differ systematically from those who do not, with the consequence that results may be skewed and their generalisability compromised (Rybak, 2023). Response rates in web based surveys are frequently lower than in traditional modes, particularly where distribution proceeds through impersonal channels such as mass electronic mail or public social media. Rybak (2023), in a meta analysis spanning more than two decades, found that non response bias in online surveys has grown more pronounced as survey fatigue has increased, and Singh and Sagar (2021) note that the sheer volume of online surveys during and after the pandemic depressed participation still further. In the Nigerian context the difficulty is compounded by infrastructural disparity, for students may inadvertently exclude respondents with limited internet access and thereby produce samples skewed toward younger, urban, and more digitally literate populations (Ben Youssef et al., 2022).

A deficiency in advanced technical skill presents a second and related barrier. Methodologically rigorous research often requires competencies such as branching logic, randomisation, and embedded validation, yet free platforms offer limited functionality of this kind, while more capable tools require training to use effectively (Zimba and Gasparyan, 2023). Regmi et al. (2017) emphasise that many student researchers are unaware of these advanced features or lack the skill to implement them, with the result that poorly designed surveys suffer high rates of dropout and yield ambiguous data. Students frequently struggle, in addition, with the cleaning and analysis of data, since raw responses often contain incomplete entries and inconsistent formatting that demand proficiency in analytical software (Sarab et al., 2016). Oladimeji and Abdulkareem (2023) observe that programmes of digital literacy in Nigerian universities are frequently inadequate and leave students to acquire complex tools through trial and error, a circumstance that affects the quality of data and heightens the anxiety of the researcher.

2.3 Theoretical Framework

The Technology Acceptance Model, developed originally by Davis (1989) and later extended by Venkatesh and Davis (2000), provides a robust theoretical lens through which to understand why students adopt or reject web based survey technologies. The model holds that two primary beliefs drive the adoption of technology, namely perceived usefulness and perceived ease of use. Subsequent extensions, notably the second formulation of the model and the Unified Theory of Acceptance and Use of Technology, incorporate additional constructs such as social influence and facilitating conditions (Venkatesh and Davis, 2000; Venkatesh et al., 2003). While these extensions offer broader explanatory power, the original formulation is adopted here because the focus of the research falls specifically upon the individual perceptions of students concerning ease and usefulness, and because the parsimony of the original model suits exploratory research in a context where the adoption of digital research tools has not been extensively studied. The social and organisational factors emphasised by the later models are acknowledged as relevant moderating variables that future studies may fruitfully examine. Figure 1 presents the constructs and their interpretive pathways.

The conceptual architecture of the study is set out in Figure 1, which renders the constructs of the model and the pathways that connect them. The pathways are presented as an interpretive scaffold rather than as relationships that the present descriptive design has tested.

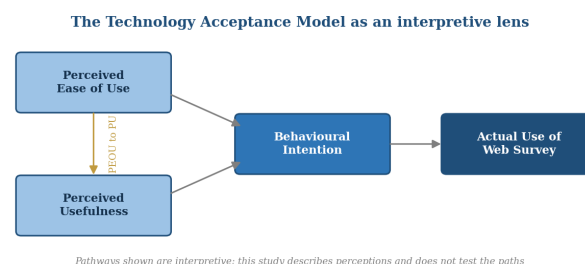


Figure 1. The Technology Acceptance Model as the interpretive framework of the study.

Source: Adapted from Davis (1989) and Venkatesh and Davis (2000).

3. Methodology

The study adopted a descriptive survey research design. The population comprised students of the Faculty of Management Science at the University of Benin, and a sample of 157 respondents, representing approximately five percent of the total population, was determined. A proportionate stratified random sampling technique was employed in order to secure representation across the several levels and departments, so that each department contributed a representative number of respondents to the final data set. The instrument, designated the Determinants of Web Based Survey Use Questionnaire, was organised around the constructs of the Technology Acceptance Model.

The reliability of the instrument was assessed through the test and retest method, with a two week interval, on a non sampled group of 20 students drawn from outside the main sample. Cronbach alpha coefficients were computed for each subscale and for the instrument as a whole. As reported in Table 1 and illustrated in Figure 4, every subscale coefficient exceeded the commonly accepted threshold of 0.70 (Nunnally, 1978), and the

overall reliability of the instrument stood at 0.78, which indicates satisfactory internal consistency for a research instrument of this scope. The collected data were cleaned, coded, and analysed through descriptive statistics, and frequency distributions and simple percentages were used to present the findings, since these provide a clear and concise summary of perceptions at a single point in time.

Consistent with this descriptive framing, no inferential hypothesis testing, whether by regression or by structural equation modelling, was conducted. The study does not purport to test the predictive relationships posited by the model, namely that perceived ease of use predicts perceived usefulness, or that both independently predict the behaviour of adoption, but rather describes the pattern of perceptions in a manner consistent with the constructs of the model. The framework is therefore employed strictly as an interpretive lens through which to organise and to contextualise the descriptive findings. Future research that employs continuous scale instruments on larger samples is recommended for the formal testing of these predictive relationships.

Table 1. Reliability statistics for the questionnaire subscales

Construct or subscale	Items	Cronbach alpha
Perceived ease of use	6	0.76
Perceived usefulness	6	0.79
Adoption behaviour and challenges	4	0.74
Overall instrument	16	0.78

Source: Field survey (2025). Note: an alpha of 0.70 or above is considered acceptable (Nunnally, 1978).

Figure 4 displays the reliability coefficient of each subscale against the conventional threshold and confirms that the instrument attains satisfactory internal consistency across all of its components.

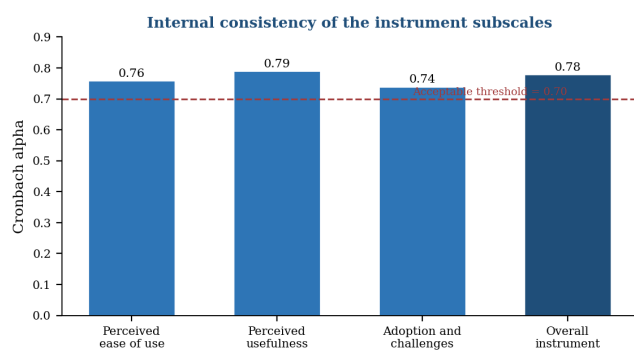


Figure 4. Internal consistency of the instrument subscales.

Source: Field survey (2025).

4. Results

The principal results are summarised in Table 2 and depicted in Figure 2. Of the 157 respondents, 121, or 77.1 percent, reported that they were highly aware of web based survey tools, while 36, or 22.9 percent, were not. A clear majority, comprising 140 respondents or 89.2 percent, agreed that web based surveys significantly reduce the physical stress of distributing paper questionnaires, and this item provides the measure of perceived ease of use. With respect to perceived usefulness, 103 respondents, or 65.6 percent, believed that online tools enabled them to complete their research projects appreciably faster than traditional

methods. The most frequently cited challenge was non response error, reported by 122 respondents, or 77.7 percent.

Table 2. Awareness, perception, and the dominant challenge (n = 157)

Indicator	Yes	%	No	%	Total
Awareness of web based survey	121	77.1	36	22.9	157
Perceived ease of use	140	89.2	17	10.8	157
Perceived usefulness	103	65.6	44	34.4	157
Challenge of non response error	122	77.7	35	22.3	157

Source: Field survey (2025).

Figure 2 expresses the four principal indicators as stacked proportions and renders at a glance the strong awareness and ease of use, the more measured perception of usefulness, and the prominence of the non response challenge.

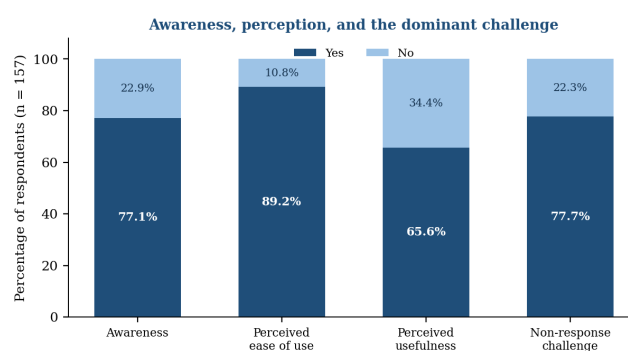


Figure 2. Awareness, perception, and the dominant challenge as proportions of the sample.

Source: Field survey (2025).

5. Discussion of Findings

The findings suggest that students at the University of Benin are becoming, in respect of research practice, digital natives. The high level of awareness accords with Oladimeji and Abdulkareem (2023), who noted that the proliferation of mobile technology in Nigeria has created fertile ground for the adoption of digital services. It is important, however, to distinguish three levels of engagement that the data begin to illuminate, namely awareness, adoption, and sustained use. A student who is aware of a web based survey tool does not necessarily adopt it, and a student who adopts it does not necessarily use it optimally or consistently across successive projects. The high awareness of 77.1 percent and the strong ease of use of 89.2 percent, set against the lower usefulness of 65.6 percent and the dominant challenge of non response at 77.7 percent, suggest that initial adoption does not translate automatically into effective and sustained use. This three stage progression is depicted as a funnel in Figure 5, and future studies should measure the three stages separately in order to furnish a more granular account of the trajectory of adoption.

Figure 5 represents the attrition between awareness and effective use as a funnel and locates the competence gap that the study identifies at the transition from initial adoption to consistent and methodologically sound practice.

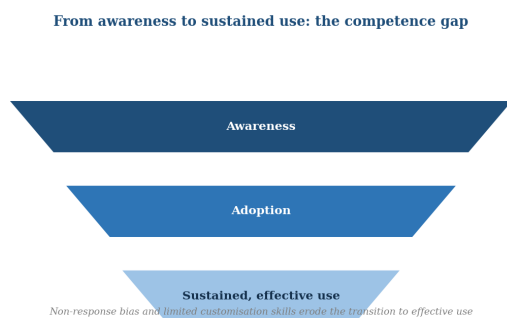


Figure 5. The competence gap from awareness through adoption to sustained use.

Source: Authors' construction from the field survey (2025).

The rate of perceived ease of use of 89.2 percent and the rate of perceived usefulness of 65.6 percent observed in this study are broadly consistent with, though slightly higher than, the figures reported in comparable Nigerian settings, as Figure 3 illustrates. Oladimeji and Abdulkareem (2023) reported a perceived ease of use of approximately 82 percent in their study of the adoption of electronic services among Nigerian users, while Ben Youssef et al. (2022) found that infrastructural deficits typically moderate the relationship between perceived usefulness and actual adoption in sub Saharan African university settings and produce usefulness scores in the range of 60 to 70 percent. The somewhat elevated ease of use observed here may reflect the particular characteristics of management science students, who are more likely to have encountered digital business tools as part of their coursework. The relative gap between ease of use and usefulness, also observed by Oladimeji and Abdulkareem (2023) and attributed to limitations of coverage rather than to the tool itself, reinforces the conclusion that ease of use alone is insufficient to guarantee a high perception of utility. Contextual barriers such as non response bias and limited technical skill suppress the usefulness score even where ease of use is high, a pattern that recurs across Nigerian studies of technology acceptance and that underscores the need for contextually embedded interventions in digital literacy.

Figure 3 sets the two perception scores of this study beside those of comparable work and shows that the gap between ease of use and usefulness is a consistent feature of the literature rather than an artefact of the present sample.

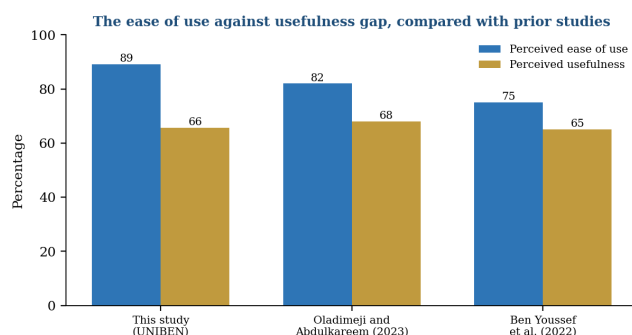


Figure 3. The ease of use against usefulness gap compared with prior studies.

Source: Authors' construction from the field survey (2025), Oladimeji and Abdulkareem (2023), and Ben Youssef et al. (2022).

5.1 Limitations and Future Directions

This study is subject to several limitations that should inform the interpretation of its findings and the design of future research. The

descriptive design and the binary response format of the instrument preclude the formal inferential testing of the predictive hypotheses of the model. The model advances three specific predictive claims, namely that perceived ease of use is a significant positive predictor of perceived usefulness, that perceived ease of use independently predicts the behavioural intention to use a technology, and that perceived usefulness independently predicts both intention and actual use. None of these relationships has been tested statistically in this study, since binary data are not amenable to the regression or structural equation modelling that requires continuous or interval level variables. The framework has accordingly been used strictly as an interpretive and organisational lens.

Future studies that seek to test the hypotheses of the model formally in this context should employ a continuous scale instrument, of five or seven points, to measure ease of use, usefulness, behavioural intention, and the frequency of adoption. With such data, multiple linear regression could test whether ease of use is a significant predictor of usefulness and whether the two constructs together predict adoption when entered simultaneously. Structural equation modelling would permit the simultaneous estimation of all pathways, including indirect effects, and would furnish indices of model fit. A longitudinal design that tracks the same cohort across its academic career would additionally allow examination of whether perceptions evolve with increasing research experience, and a comparative study across institutions with differing infrastructural profiles would test the generalisability of the findings beyond the University of Benin.

6. Conclusion and Recommendations

This study describes, through a descriptive lens informed by the Technology Acceptance Model, the perceptions of web based survey adoption among students at the Faculty of Management Science, University of Benin. The findings confirm that student perceptions are consistent with the constructs of perceived ease of use and perceived usefulness, for awareness is high at 77.1 percent, ease of use is strong at 89.2 percent, and usefulness, while positive at 65.6 percent, is tempered by contextual barriers. It must be emphasised that the study has not tested the predictive hypotheses of the model, since the binary instrument and the descriptive design do not permit such analysis, and these relationships remain an important agenda for future research. A competence gap is nonetheless clearly evident, since students are attracted by the speed and the low cost of digital surveys yet are frequently frustrated by low response rates and technical limitations. Non response bias, reported as a challenge by 77.7 percent of respondents, and insufficient skill in the logic and customisation of surveys represent the most urgent barriers to methodological quality.

On the strength of these findings the following recommendations are advanced. The Faculty of Management Science should integrate web based survey methodology formally into the research methods component of its curriculum, with a dedicated module on survey design, branching logic, data validation, and ethical compliance introduced before the point at which students undertake independent research. The University of Benin should negotiate an institutional licence for a professional grade survey platform and make it accessible to students through the library or the information technology directorate, thereby

addressing the barrier of technical skill and ensuring that data are stored in compliance with applicable regulations. To address the challenge of non response, the curriculum should provide explicit instruction in ethical strategies for the improvement of response rates, including targeted and personalised invitations and multi contact communication (Rybak, 2023). The university should further prioritise the expansion and stabilisation of campus wide connectivity and the development of a mobile optimised institutional survey portal. These interventions should be treated as a coordinated institutional response rather than as the responsibility of individual students.

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Ethical Clearance: This study involved the collection of data from human participants. Ethical approval was obtained from the appropriate institutional authority prior to data collection. All participants were informed of the purpose of the study, of their right to withdraw at any time without consequence, and of the confidentiality of their responses, and written informed consent was obtained from all participants before the questionnaires were administered.

Declarations