

# Application for Ethics Approval

## Eduvos National Research Ethics Committee

Instructions						
1. You may add rows where required e.g. for co-applicants or additional co-supervisors. 2. Please answer all sections. 3. Please attach the relevant documents where required. 4. All undergraduate and postgraduate students and researchers are required to complete this form and receive ethics clearance <b>before</b> commencing research. 5. Where applicable mark relevant boxes with an x. 6. Replace the red text with further description if needed or delete if not. 7. Complete Appendix A. 8. Complete Appendix B, selecting either Option A (Research Project, Thesis and/or Article) or Option B (Community Engagement and/or Engaged Research Project).						
For National Research Committee Use Only	Approved		Change		Refer	Reject
Reference Number						
Section A	Applicant/Researcher/Investigator Details					
Title, Name, Surname	Mr. Benjamin Dahn					
	Mr. Durotimi Samuel					
	Mr. Kieran Horsford					
	Mr. Luca Karsten					
	Mr. Hayden Muller					
	Mr. Nicolaas Huisman					
Email				Cell Number		

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<b>Institution</b>	<b>Student Number</b>
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Eduvos	DV.2023.B2F6Z7
Eduvos	CON-1093187-H3D9
Qualification Enrolled for	Bachelors of Science in Information Technology: Software Engineering

Section B		Supervisor(s)					
		Supervisor			Co-Supervisor		
Title, Name and Surname		Ntombesisa Mateyisi			Title, Name and Surname		
Qualification e.g. PhD					Qualification e.g. PhD		
Institution		Eduvos			Institution		
Email		Ntombesisa.Mateyisi@EDUVOS.COM			Email		
Cell Number					Cell Number		
Section C		Project Details					
Project/Thesis/Article Title	Prototyping a mobile engagement app: evaluating push notification strategies for improved customer engagement						
Purpose of Research (Mark with X)	Bachelors	X	Honours/ Postgraduate Diploma		Masters		
	Doctorate		Post-Doctorate		Non-Diploma Purposes		
	Community Engagement		Engaged Research		Other		
Section D		Research Project/Proposal Details					
D.1. Research/Project Aim	To design and develop a mobile app prototype with customizable push notification strategies and assess their effect on user engagement and interaction through collected user feedback.						
D.2. Research Problem Statement	Subscription based businesses experience lower than desired customer interaction through traditional communication channels, like email. This lower interaction levels decreases customer engagement, reduces responsiveness to offers, and weakens relationships with customers. Outdated communication						

	<p>methods do not capture customers' attention in real time, which leads to reduced customer interaction and retention rates. Deploying a mobile application with push notifications could prove to be a more effective way of improving customer interaction, enhancing engagement, and building customer loyalty.</p>
<p>D.3. Research Objectives</p>	<p><b>This study will examine the following:</b></p> <p>User preferences regarding different types of push notifications (e.g. promotional, transactional, reminder-based).</p> <p>User behaviours in response to notifications (e.g. click-through rates, app opens, session duration).</p> <p>The impact of notification timing on user engagement.</p> <p>The impact of notification frequency on user satisfaction and app usage.</p> <p>Potential drawbacks of push notifications (e.g. annoyance, notification fatigue, app uninstalls).</p> <p>Recommendations for optimizing push notification strategies to improve user experience and retention.</p> <p>These aspects are essential to the study because understanding user preferences and behaviours helps in designing notifications that are both effective and user-friendly. Examining the timing and frequency of notifications provides insight into how to maximize engagement without overwhelming users. Identifying potential drawbacks, such as notification fatigue or app abandonment, ensures that strategies are not only engaging but also sustainable. Together, these factors support the development of optimized push notification systems that enhance user experience while maintaining long-term app retention.</p>
<p>D.4. Research Questions</p>	<ul style="list-style-type: none"> <li>- What is the effect of push notifications on the cognitive load and informational needs compared to the effect of emails on the cognitive load and informational needs?</li> <li>- What is the effect of push notifications frequency on user engagement?</li> <li>- How does the experience of using digital touchpoints, influence customer loyalty, with digital engagement and customer satisfaction?</li> </ul>

	- How does push notifications timing affect user engagement?
D.5. Research Approach	Quantitative
D.6. Research Methodology	Case study. The researchers will contextualize this study by making use of a business with a subscriber base in order to help define the scope of the research.
D.7. Data Collection	The researchers will be collecting data through surveys which will be randomly distributed to individuals. The surveys will consist of questions designed to gather relevant information related to our research objectives. Individuals will be asked to voluntarily complete the survey digitally. All responses will be collected anonymously to ensure confidentiality.
D.8. Data Analysis	The collected data will be analysed using descriptive and correlational analysis methods. Descriptive statistics will reveal patterns in user interaction by calculating averages, percentages, etc. While correlational analysis will provide relational themes between the mobile push notifications and customer engagement levels.
D.9. Sampling	Samples will be collected through contacting individuals online asking individuals to voluntarily complete a survey.
D.10. Location	Institution, city, online.
D.11. Duration of Research	The duration of the study will be 6 months with the commencement date being the 15 <sup>th</sup> of May to the 15 <sup>th</sup> of November of 2025.
D.12. Key References	<p>Nanta, T. M., Noermijati, N., Rohman, F., &amp; Hussein, A. S. (2025). The Effect of Digital Touchpoint Usage Experience on Customer Loyalty Mediated by Digital Engagement and Customer Satisfaction. <i>Businesses</i>, 5(1), 3.  <a href="https://doi.org/10.3390/businesses5010003">https://doi.org/10.3390/businesses5010003</a></p> <p>Kunkel, T., Hayduk, T., &amp; Lock, D. (2023). Push it real good: the effects of push notifications promoting motivational affordances on consumer behavior in a gamified mobile app. <i>European Journal of Marketing</i>, 57(9), 2592–2618.  <a href="https://doi.org/10.1108/EJM-06-2021-0388">https://doi.org/10.1108/EJM-06-2021-0388</a></p> <p>Wohllebe, A., Hübner, D. S., Radtke, U., &amp; Podrutzik, S. (2021). Mobile apps in retail:</p>

	<p>Effect of push notification frequency on app user behavior. Innovative Marketing, 17(2), 102–111. <a href="https://doi.org/10.21511/im.17(2).2021.10">https://doi.org/10.21511/im.17(2).2021.10</a></p> <p>Kim, J., &amp; Park, S. (2025). Empowering Individual Preferences in Mobile Notifications: A Balanced Approach to Cognitive Load and Information Needs. IEEE Access. <a href="https://doi.org/10.1109/ACCESS.2025.3549033">https://doi.org/10.1109/ACCESS.2025.3549033</a></p> <p>Gavilan, D., &amp; Martinez-Navarro, G. (2022). Exploring user’s experience of push notifications: a grounded theory approach. Qualitative Market Research, 25(2), 233–255. <a href="https://doi.org/10.1108/QMR-05-2021-0061">https://doi.org/10.1108/QMR-05-2021-0061</a></p> <p>The references selected are useful as they provide a strong foundation for the research questions listed particularly how push notifications affect user engagement. The references will help guide the researchers by pointing out any gaps in current literature which the researchers can address.</p>			
D.13. Storage of Data (including samples)	Data will be stored on a password protected excel sheet until the research has been concluded.			
<b>Section E</b>	<b>Potential for Harm to Participants and/or Others</b>			
Details	This section addresses any potential for harm or risk of harm to participants. Harm is understood as an injury to the safety or well-being of a research participant. This can be inclusive of economic, financial, physical, psychological, and social harm. Risk is understood as the potential for harm to participants.			
E.1.	Is there any potential for harm: physical, psychological; social; or other to participants (human or animal) and/or others not directly involved in the research?	Yes	No	X
E.2.	Are there any potential risks to participants and/or researchers/investigators?	Yes	No	X
There is no risk of physical, psychological, or social harm to participants, as the study only analyses user interaction with push notifications. No personal or sensitive data will be collected, ensuring privacy and anonymity. The research poses minimal risk and will follow ethical practices, including informed				

consent and secure data handling.					
<b>Section F</b>		<b>Selection and Recruitment of Participants</b>			
Details		This section addresses the selection and recruitment of participants. This is inclusive of vulnerable persons such as children, young people, those dependent on medical care, disabled persons, survivors of violence, among others. Selection is understood as the process by which participants are selected to participate in the study. While recruitment entails contacting potential research participants and providing them with the necessary information to establish whether they would be interested in participating in the study.			
F.1.	Will participants be recruited (selected, contacted, and requested) to participate in this research?	Yes		No	x
F.2.	Is there any possibility that any of the participants will feel coerced to participate in this research?	Yes		No	x
F.3.	Are any of the participants known to the researcher/investigator (e.g. friends, family)?	Yes		No	x
F.4.	Will participants be offered an incentive to participate?	Yes		No	x
The researchers would recruit participants by approaching companies that make use of subscribers systems. The researchers will request for permission to communicate with the business' subscribers. There will be no incentive involved other than the fact that the answers of the participant will be taken into consideration in the solutions to the research.					
<b>Section G</b>		<b>Potential Harm to the Environment</b>			
Details		This section addresses any potential for harm or risk of harm to the environment. Harm is understood as injury to non-human animals, ecosystem disruption, and destruction of the environment in any form, among others. Risk is understood as the potential for harm to non-human animals and the environment.			
G.1.	Does your research involve any methods, procedure, or substances which may directly or indirectly harm the environment?	Yes		No	x
The research does not involve any methods, procedures, or substances that could directly or indirectly harm the environment. Additionally, the questions posed to participants will not request any personal or financial information, ensuring their privacy and comfort are fully respected.					
<b>Section H</b>		<b>Informed Consent</b>			

Details	This section is concerned with the matter of informed consent. Informed consent is understood here as the process by which a participant has available to them all the full and necessary information, such as risks, benefits, and alternatives, in order to make a voluntary decision about whether to participate in the study or not, and to consent fully and under no duress or fear of consequences should they withdraw from the study.				
H.1.	Will the researcher(s)/investigator(s) request written informed consent from their participants?	Yes	x	No	
H.2.	Will the researcher(s)/investigator(s) provide a detailed letter outlining risks, benefits and alternatives to their participants?	Yes	x	No	
<b>Section I</b>					
<b>Confidentiality, Privacy and Anonymity</b>					
Details	<p>This section addresses the confidentiality, privacy, and anonymity of research participants and their data.</p> <p>Confidentiality is understood as ensuring the participant and their data cannot be linked and are not identifiable and is the responsibility of the researcher to protect and prevent disclosure of personal information.</p> <p>Privacy is understood as the participant's right to determine who has access to their personal information. Privacy is concerned with the individual – the participant, whereas confidentiality is concerned with the participant's data.</p> <p>Anonymity is understood as ensuring that identifying information is not collected from participants and that the collected data and the project cannot be linked to the participant.</p> <p>Removing any identifiers from the data and making use of participant codes instead is one means of ensuring confidentiality, privacy, and anonymity.</p>				
I.1.	Is there any possibility of participants being inadvertently identified?	Yes		No	x
I.2.	Is there any possibility of confidential data being divulged during or after the research has taken place?	Yes		No	x
<b>Removing Identifiers</b>					



All details such as names and contact details will be replaced with random participant codes. Other details that could reveal participants' identity will be grouped or generalized.

## Storing Data Safely

The raw data that was collected throughout the research project will be kept in a password protected Excel spreadsheet on Eduvos' server that will only be accessible to the research team. The code-key file that links codes to the participants identities will be kept separately on an encrypted drive with 2 factor authentication.

## Who Can Access

Members of the research team will be the only individuals with login credentials.

## Retention & Disposal

After the research has been concluded, the code-key file will be destroyed. Data that is anonymized will remain on the Eduvos' secure server.

## Participant Rights

The participants will be told prior to them giving their responses that their responses will be anonymized, and no personal details will be collected. Participants can withdraw at any time, and their coded data will be deleted upon request.


Section J	Observations and Records				
Details	This section describes how data will be captured, observed and stored. This is inclusive of all forms of data, including biomedical samples.				
J.1.	Will there be audio, photographic, video, written, or other recorded observations of participants during the research?	Yes	x	No	
J.2.	Will there be biomedical samples collected?	Yes		No	x
J.3.	Will recorded data be stored in a secure location?	Yes	x	No	
Collected and recorded observations will be kept securely on the computers of the researchers as well as in a cloud storage folder to ensure the data does not get lost or corrupted. Only the researchers of					

the study, and if necessary, their supervisor, will have any access to the information. The information gathered will only be kept for the duration of the study.

Section K		Conflict of Interest (Including Financial)			
Details	This section is concerned with conflicts of interest. In research a conflict of interest exists when an individual or organisation has a vested interest in the outcome of the study that may result in the integrity of the research being compromised.				
K.1.	Is any conflict of interest e.g. financial gain likely to result from this research?	Yes		No	x
K.2.	Is the research funded by a party outside of Eduvos?	Yes		No	x
<p>This research is conducted solely for academic and research purposes. There is a minimal likelihood of any conflicts arising from our research, and any that may arise are purely beyond our knowledge or control.</p> <p>This research is being funded by no other organisation, institution, or individual other than ourselves, students at Eduvos. Any funding provided or obtained by outside parties will be discussed and disclosed with figures of authority, e.g., Ntombesisa Mateyisi, research supervisor.</p>					
Section L		Organisations Other than Eduvos			
Details	This section addresses organisations involved in the study, other than Eduvos. This may extend to other Higher Education Institutions, industry partners, or other entities.				
L.1.	Are organisations other than Eduvos involved in this research?	Yes		No	x
L.2.	If <b>yes</b> , has ethics clearance already been obtained from the organisations?	Yes		No	
Section M		Use of Artificial Intelligence and Other Content Generating Technology			
Details	This section is concerned with the use of Artificial Intelligence (AI) and other content generating technology in the study. This is inclusive of this technology being used to develop the research concept, collect, and analyse data, generate the research report, among other potential uses. Ensure the researcher(s)/investigator(s) have read the relevant Eduvos documents on AI use.				

M.1.	Do you intend to use AI or other content generating technology in your study?	Yes	x	No	
M.2.	Have the relevant Eduvos documents on AI use been read and understood?	Yes	x	No	
<p>Artificial Intelligence tools will be used in different phases of this research study. AI tools such as Chatgpt will be used to summarize articles and suggest relevant themes for sections like literature review. AI tools such as Quillbot may also be used to assist in paraphrasing during revision staged of this research study. Our research team has read and understood the Eduvos guidelines around the ethical use of AI and will acknowledge the use of any AI tools in the final report thus ensuring transparency and responsible use.</p>					
<b>Section N</b>	<b>Community Engagement</b>				
Details	This section addresses activities that involve community engagement initiatives projects, community-based interventions, and engaged research				
N.1.	Does your initiative involve direct engagement with the community of interest?	Yes	x	No	
N.2.	Have the relevant Eduvos Community Engagement documents been read and understood?	Yes	x	No	
N.3.	Will the outcome be shared with the community?	Yes		No	x
N.4.	Are there plans for sustainable community involvement beyond the engagement period?	Yes		No	x
N.5.	Have you submitted the Community Engagement Logging Forms?	Yes		No	x


## Appendix A: Ethics Approval Certificate

 <b>Eduvos</b> Your Education. Your Future.		<b>Ethics Approval Certificate</b> Eduvos National Research Ethics Committee	
Date		17/06/2025	
Applicant Name		Kieran, Hayden, Luca, Benjamin, Durotimi, Nicolaas	
Project/Thesis/Article Title		Prototyping a mobile engagement app: evaluating push notification strategies for improved customer engagement	
<b>Declaration of Researcher/Investigators</b>			
<p>We apply for ethical approval to conduct research. If ethics approval is granted, the research will be undertaken and adhere to the information provided in this application, and any relevant guidelines, regulations and laws. Should the nature of the research change in any form e.g. research objectives, population sample, data collection methods, I/we will notify the Eduvos National Research Ethics Committee of this immediately and await the committee's recommendations.</p>			
Researcher/Investigator	Signature	Date	
1. Kieran Horsford	KRH	17/06/2025	
2. Hayden Muller	HDM	17/06/2025	
3. Luca Karsten	LK	17/06/2025	
4. Benjamin Dähn	BBD	17/06/2025	
5. Durotimi Samuel	DS	17/06/2025	
6. Nicolaas Huisman	NCH	17/06/2025	
<b>Declaration of Supervisor(s) (if applicable)</b>			
<p>I/We have read over this application, inclusive of the information sheet and informed consent letter, and will ensure that my/our student will undertake their research according to what is stated in this application, any relevant guidelines, regulations and laws. Should the nature of my/our student's research change, I/we will notify the Eduvos National Research Ethics Committee of this immediately and await the committee's recommendations.</p>			
Supervisor/s	Signature	Date	
1.			

For National Research Committee Use Only			
Eduvos National Research Ethics Committee Comments			
Reference Number			
NREC Chairperson Title, Name, Surname			
Signature		Date	

# Appendix B: Informed Consent Form

## (Template)

	<b>Information Sheet and Informed Consent</b> Eduvos National Research Ethics Committee
Date	17/06/2025
Project/Thesis/Article Title	Prototyping a mobile engagement app: evaluating push notification strategies for improved customer engagement
NREC Reference Number	

### Information Sheet: Prototyping a mobile engagement app: evaluating push notification strategies for improved customer engagement

#### Prototyping a mobile engagement app: evaluating push notification strategies for improved customer engagement

Date: Tuesday, 17 June 2025

Good day and thank you for your interest in this research study. This document provides important information to help you decide whether you would like to partake. Please take the time to read it carefully and feel free to ask any questions you may have before making your decision.

Our names are Kieran Horsford, Hayden Muller, Luca Karsten, Benjamin Dähn, Durotimi Samuel, Nicolaas Huisman from Eduvos, where we are supervised by Ntombesisa Mateyisi.

You are being invited to consider participating in a study that involves research on mobile app push notifications. The aim and purpose of this research is to design and develop a mobile app prototype with customizable push notification strategies and assess their effect on user engagement and interaction through collected user feedback. The study will involve random online surveys by asking individuals to answer the survey. The anticipated duration of your participation if you choose to enrol and remain in the study is expected to be brief.

We hope that the study will create the following benefits: improved interactions between subscriber-based businesses and the subscribers, better customer engagement with the business, improved sales for the businesses that use the app. Participants will not directly benefit from the research.

This study has been ethically reviewed and approved by the Eduvos National Research Ethics Committee, reference number: \_\_\_\_\_.

In the event of any problems or concerns you may contact the research supervisor Ms. Ntombesisa Mateyisi at Ntombesisa.Mateyisi@EDUVOS.COM.

Your personal information will remain confidential, private and anonymous. Data from this research will be stored in the following manner Data will be stored on a password protected excel sheet until the research has been concluded. How your data may be used:

	In Project Report/Thesis	In Research Publications	Institutional Database
My exact words may be used:			
My survey responses may be used:			

Participation in this research is voluntary, and you may withdraw participation at any point. In the event of refusal to participate or withdrawal of participation, you will not incur penalty or loss of benefit.

Kind regards,  
Kieran Horsford  
Hayden Muller  
Luca Karsten  
Benjamin Dahn  
Durotimi Samuel  
Nicholaas Huisman

## Informed Consent to Participate in Prototyping a mobile engagement app: evaluating push notification strategies for improved customer engagement

I \_\_\_\_\_ (name) have been informed about the study and/or project entitled Prototyping a mobile engagement app: evaluating push notification strategies for improved customer engagement by Kieran, Hayden, Luca, Benjamin, Durotimi and Nicolaas.

I understand the purpose and procedures of the study and/or project to design and develop a mobile app prototype with customizable push notification strategies and assess their effect on user engagement and interaction through collected user feedback.

I have been given an opportunity to answer questions about the study and/or project and have received answers to my satisfaction.

I declare that my participation in this study and/or project is entirely voluntary and that I understand that I may withdraw at any time without any negative consequences.

If I have any further questions/concerns or queries related to the study, I understand that I may contact the supervisor Ms. Ntombesisa Mateyisi at [Ntombesisa.Mateyisi@EDUVOS.COM](mailto:Ntombesisa.Mateyisi@EDUVOS.COM) or the Chairperson of the Eduvos National Research Ethics Committee Dr. Nyx McLean at [Nyx.McLean@EDUVOS.COM](mailto:Nyx.McLean@EDUVOS.COM).

<b>Participant Name and Surname</b>	
<b>Signature</b>	
<b>Date</b>	

<b>Witness Name and Surname (Where applicable)</b>	
<b>Signature</b>	
<b>Date</b>	

<b>Translator Name and Surname (Where applicable)</b>	
<b>Signature</b>	
<b>Date</b>	