Investigating antecedents of adoption intention for audiobook applications

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ABSTRACT

Despite the uniqueness of audiobook applications, their adoption remains a big challenge. The present study integrates the decomposed theory of planned behaviour (DTPB) with switching cost theory (SCT) to examine the antecedents of consumer’s intention towards adopting audiobook applications. Structural equation modelling (SEM) was used to analyze the data collected from 720 respondents over two stages, and the results confirm that perceived ease of use, perceived usefulness, procedural switching cost, self-efficacy, are important in shaping attitude and adoption intentions for audiobook applications. The effects are non-significant for financial switching costs and facilitating conditions. Book genre is found to have significant moderating effects. The findings add to the existing adoption works by integrating two unique theories in a novel context of audiobooks, as well as offers practical guidance to audiobook application developers to enhance its adoption.

Keywords: adoption; mobile application; audiobook; switching cost; self-efficacy
Introduction

Communication technology has made consumers more engaged with their smart devices and applications,\(^1,^2\) thereby enhancing controllability, responsiveness, timeliness, and alternatives for various activities.\(^1\) Mobile application (app/apps hereafter), with cutting-edge technologies, have brought significant changes to the users’ consumption experiences.\(^3\) One of such apps is audiobooks. Audiobooks are interactive platforms of 'talking books' where a sound recording reflects the text, with supporting background music.\(^1^1\) Audiobooks are gaining popularity as they integrate traditional bookstores with a smartphone, removing the bookstore location and access constraints.\(^1^2,^1^3,^1^4\) Globally, the audiobook market size was valued at USD 2.67 billion in 2019 and is expected to grow by 24.4% till 2027\(^1\). Currently, many audiobook apps, like Audible, Google Playbook, LibriVox, and Oodles have collections of audiobook titles and offer high-quality sound, customizable narration speeds, wireless speaker access, and downloads.

The existing IS literature discusses the adoption and usage patterns of novel mobile apps, like wallets,\(^4,^5\) e-health,\(^6\) e-fashion,\(^3\) online travel,\(^7\) e-books\(^8^9\), and online food.\(^1,^8\) Researchers have applied multiple theories such as technology acceptance model (TAM),\(^1^5\) theory of reasoned action (TRA),\(^1^6\) diffusion of innovation theory (DOI),\(^1^7\) theory of planned behaviour (TPB),\(^1^6\) unified theory of acceptance and use of technology (UTAUT),\(^1^8,^8^9\) and its extensions\(^1^9\) to understand consumer's adoption behaviour.\(^1,^3,^4,^8\) For example, Ghazali et al.\(^2^0\) apply TAM/TPB to understand the adoption of m-healthcare apps. Wang et al.\(^2^1\) analyze consumer intention to use a GPS navigation app by integrating DOI with a value-based adoption model (VAM). Fong et al.\(^2^2\) apply UTAUT to understand consumer’s intention to use travel booking apps. Besides, Alalwan et al.\(^2^3\)
combine hedonic motivation, price value, habit, and UTAUT to analyze the adoption of m-banking.

However, the differentiating characteristics of audiobooks can cause the adoption process to be different. The consumer goes through a different consumption experience while selecting and subscribing to audiobooks, since, unlike other apps or compared to reading books/e-books, the focus is more on consumer’s listening experiences, and less on visual ones. Thus, it is imperative to develop a unique framework to understand how consumers develop adoption intentions towards specific audiobooks.9,10

The current work proposes a composite research model by integrating the decomposed theory of planned behaviour (DTPB)24 with the switching cost theory (SCT).27 The DTPB, with its foundation in TPB, incorporates perceived ease of use (PEOU), perceived usefulness (PU), and perceived behavioural control (PCB), uses a variety of elements to explain user IS adoption behaviour and has been applied for non-work settings.25,26 The theory is more relevant for audiobooks, than any other adoption theory, because, for audiobooks to be continually streamed, the facilitating ecosystem, such as high-speed internet, headphones, smartphone, and speakers, are mandatory.12 Additionally, the user’s ability to comprehend the narrator's accent, pronunciation, and articulation, and the ability to use the app competently is key to the adoption process3,36. Thus, the role of such facilitating ecosystems as well as the user’s self-perceived capability to leverage the ecosystem is critical for enhancing the device-app-user compatibility.17

While adopting a behaviour-disrupting technology, like audiobooks, consumers also consider the cost of switching from traditional reading from a financial and procedural perspective. Not only is the procedure of listening to audiobooks different from reading, but consumers also need to pay the subscription fee for streaming/listening audiobooks. Consumers have to consider
both the usefulness of the app and the sacrifices involved in discontinuing the existing reading habit, hence, the switching cost theory (SCT)\textsuperscript{27} is relevant for predicting the adoption of disruptive technology. Further, there might exist the possibility that attitude towards audiobook apps gets affected based on the availability of book genre on the platform\textsuperscript{83}. Thus, the study framework attempts to answer: 1) What are the drivers of and barriers to adoption intention for audiobooks; and 2) What is the intervening effect of audiobook genre on the process?

This is the first work, to the authors’ knowledge, that proposes a research model integrating the DTPB\textsuperscript{24} with the SCT\textsuperscript{27} for audiobooks. In line with the theory, it reports positive effects of attitudinal beliefs, PEOU and PU, on attitude which, in turn, affects adoption intention. Similarly, self-efficacy, part of PBC in DTPB, is found to positively influence adoption intention. Interestingly, facilitating conditions, within the PBC, is not found to affect intention, a departure from extant works\textsuperscript{24,25} From the SCT perspective, while procedural switching cost (PSC) was found to weakly affect adoption intention, financial switching cost (FSC) was not, a novel finding in this context\textsuperscript{27}. Finally, the audiobook genre was found to positively affect the relationship between PEOU/PU, in agreement with the views by Lee\textsuperscript{81} and Li\textsuperscript{82} for the adoption of e-books. This paper offers practical implications for developers to design audiobook apps that are not only easy to use and have practical utility, contingent on the book genre, but also enhance the user's self-efficacy and have lower PSC to enable switching from traditional reading behaviour.

**Theoretical Background**

**Audiobook apps**

Audiobooks represent the second phase of digitization of traditional reading, where the first phase was customer migration from physical books to e-books\textsuperscript{89}. E-books accrued benefits of aggressive prices, easy access, and availability, and thus, early-on, some users quickly shifted from
traditional books to digital formats\textsuperscript{90,91}. However, many users prefer traditional books, over e-books, for a more engaging reading experience, while e-books are preferred for non-serious hedonic readings \cite{2,30}. Despite multiple benefits of e-books, many readers prefer the traditional cognitive schema of reading and prefer physical books. Such preference has slowed the migration of the mass-market to the e-book format. The same challenge remains for audiobooks since they demand the user to infer meanings from the recorded text and convert active readers to passive listeners\textsuperscript{12}.

Traditional audiobooks were available in the audiocassette format, lacked mobility benefits, and produced for challenged users\textsuperscript{28}. Later, audiobooks got upgraded to the disk format and gained popularity\textsuperscript{28}. Due to the proliferation of smartphones, audiobooks in the app format can be easily downloaded from device/OS specific marketplaces\textsuperscript{12,21,29}. Consumers can access catalogues of audiobooks and can hear them on-the-go\textsuperscript{12,30}. Audiobooks incorporate high-quality sound and narration, variations in the timber of the narrator’s voice, and provide unique listening experiences\textsuperscript{12}. While the audiobook app market is rapidly growing, academic research in this context requires more attention.

**Decomposed Theory of Planned Behavior**

The DTPB is a prominent theory for explaining technology adoption, has been applied to various contexts, and is relevant in non-organizational settings\textsuperscript{24,25,26}. DTPB, with its roots in the TPB\textsuperscript{16}, is considered superior with greater explanatory capability as it decomposes attitudinal, normative and PBC beliefs into relevant components to explain adoption intention\textsuperscript{25,31,32}. Attitudinal belief explains the belief structure of the technology by considering two prominent characteristics: PU and PEOU\textsuperscript{25,33}. In the traditional adoption models, PU and PEOU are well-known to impact the attitude towards technology and are important factors in the domain of
audiobooks. PU is the utilitarian benefit provided by new technology, compared to the previous one, and indicates its relative advantage; while PEOU is a measure of the technology’s perceived intuitiveness and convenience with which it can be consumed.

For audiobooks, PU is reflected through the utility of listening to relevant books while remaining engaged in a secondary activity, more efficiently than conventional reading. The app’s PU is enhanced through the one-stop user access to a large audiobook collection, as well as its cross-device compatibility. Similarly, PEOU is determined by the app design features that enable intuitive consumption, like user-friendly visual, information, interface, and navigation design elements, as well as the ease of audio management, including voice quality and narration pace. Both PU and PEOU are imperative for the success of behaviour-disruptive technologies like audiobooks.

DTPB splits PBC into self-efficacy and facilitating conditions. Self-efficacy is the user’s perceived capability to consume the technology, while the facilitating conditions indicate the resource compatibility available to the users. Audiobooks are data-intensive apps that for effective consumption need compatible services, like a streaming device, high-speed internet, and good-quality headphones/speakers, to exploit the app’s full capabilities. Additionally, a new user, migrating from traditional reading, may face efficacy concerns about comprehending the book’s narration, owing to the narrator's pace, accent, pronunciation, and articulation, as well as using the app competently. The importance of facilitating condition and the user’s self-efficacy is well entrenched in DTPB and needs re-validation for audiobooks.

Venkatesh et al. suggest that subjective norms, the third component of DTPB, have a debatable influence on technology adoption, especially for those that involve private discretionary consumption. The act of reading, and its replacement in audiobooks, is discretionary to most
consumers, with the limited effect of subjective norms on reading behaviors.\(^{87}\) Thus, the present work does not include subjective norms as an antecedent.

**Switching Cost Theory**

SCT involves both monetary and non-monetary costs/sacrifices involved while migrating from one technology to another.\(^{36,37}\) Switching cost includes both objective/economic costs and subjective/non-economic costs.\(^{38}\) Specifically, these can include contextual transaction costs, learning costs, artificial switching costs, search costs, and learning-related costs, which represent the constraining factors, both user-related and environment-related.\(^{37,39}\) While the switching cost considerations are varied in the extant literature, with most considering it as a unidimensional variable (e.g., Yen et al.\(^{88}\)), the cost classification by Burnham et al.\(^{27}\) into procedural, financial, and relational is robust. For the process of user switching from traditional reading to audiobook listening, relational switching cost (RSC) is not considered. This is because, for audiobooks, RSC would imply post-adoption consumption-driven attachment with an audiobook app, which would prevent a user to switch to another app. Unlike audiobooks, where the app is a one-stop repository, there are various sources of physical/e-books, and hence, for the switch from books/e-books to audiobooks, this cost loses its relevance.

Both PSC and FSC are applicable here, as the former is the time/effort invested in learning and using the app, while the latter is the monetary acquisition/subscription cost.\(^{27,40}\) PSC may include the risk in setting up the app and evaluating and learning its capabilities. The time lost in the setup, purchase, buffering, or failure/crash of the app can impact the consumption experience.\(^{40,41}\) FSC is the loss of financially quantifiable resources while changing the technology.\(^{42}\) For audiobooks, this cost would involve the purchase/subscription cost of the app,
the cost of renting/buying book titles, and the opportunity cost of transition from books to audiobooks (e.g., lost loyalty points with a bookseller).

Research model

**Attitude and Adoption Intention**

Adoption intention is the measure of one's willingness to adopt a product/service while evaluating it.\(^3\)\(^4\) It is the outcome of favourable or unfavourable attitudes.\(^4\)\(^3\).\(^4\)\(^4\)\(^5\) Eagly and Chaiken\(^4\)\(^5\) assert that adoption intention is one of the psychological constructs, which is different from attitudinal behaviour and represents an individual's motivation to perform targeted behaviour.\(^3\)\(^2\).\(^4\)\(^6\) Attitude towards audiobook app refers to the user’s cognitive and emotional disposition for the technology and is expected to be instrumental in shaping the intention to adopt it.\(^4\)\(^7\) This relation has been verified by Celik\(^4\)\(^8\) for online shopping and by Zhao et al.\(^4\)\(^9\) for m-health services. Hence, it is hypothesized:

\[ H1: \text{Attitude will positively influence the audiobook apps' adoption intention.} \]

**Attitudinal beliefs and Attitude**

**Perceived usefulness**

Consumers accept technologies based on the functions they perform.\(^1\)\(^5\) PU is analogous to the relative advantage of diffusion of innovation theory\(^1\)\(^7\).\(^1\)\(^8\) and refers to the comparative benefits of the new technology, in comparison to its precursor.\(^2\)\(^4\),\(^2\)\(^5\),\(^3\)\(^3\) PU is ‘the degree to which a user believes that using the particular system would enhance his/her task performance’\(^4\)\(^3\)\(^4\)(p. 320). It is one of the essential components for technology adoption and is widely referred to by scholars for determining consumer's attitudes towards new technology.\(^1\)\(^6\),\(^4\)\(^1\),\(^5\)\(^0\),\(^5\)\(^1\) In the context of audiobooks, PU refers to benefits such as abundant book availability, effective recommendation systems, book consumption effectiveness, as well as knowledge comprehension. Since audiobook apps are in an
initial adoption stage, compared to e-books/books, PU can act as the important determinant for creating a positive attitude among conventional book readers. Hence, we hypothesize:

**H2**: PU will positively influence the consumer's attitude towards audiobook apps.

**Perceived ease of use**

Extant literature conceptualizes PEOU in terms of perceived consumption convenience and the degree to which a particular technology is effort-free. PEOU for audiobooks implies that the app should be easier to understand and comprises hassle-free design and features. If the app is perceived as easy to use, then it should enhance its PU, since convenient audiobooks also make the app consumption and audiobook comprehension easy, making the service useful for consumers. Besides, Davis et al. and Chen and Lin assert that when novel technologies, like fitness apps, are easy to use and provide enhanced benefits, then a positive attitude is formed. Attitudes, which are positive or negative behavioural beliefs towards a technology, get contrived by the instrumentality of the ease of its use. For audiobooks, consumers are likely to be intrinsically motivated if the enhanced listening experience is due to the ease of learning and using the app, leading to positive attitudes and PU. Thus, we hypothesize:

**H3/H4**: PEOU will positively influence consumer’s attitude/PU for audiobook apps.

**Perceived Behavior Control and Adoption Intention**

**Self-Efficacy**

Lu et al. define PBC as the user’s perspective of whether they have the necessary capability, resources, and feeling of control to easily and effectively perform a task. It is one of the important constructs in the DTPB and is majorly responsible for affecting the adoption intention. Under PBC, self-efficacy is the individual’s intrinsic confidence and ability towards performing an activity. When users perceive that they have adequate skills, a positive feeling of
confidence yields to technology acceptance.\textsuperscript{20,41} It is expected that for audiobooks, the users’ confidence, enriched by the perceived ability to control the technology and autonomous learning beliefs, reduces their anxiety, affects his/her interaction with the app, and enhances adoption.\textsuperscript{56}

Hence, we hypothesize:

\textit{H5: Self-efficacy will positively influence the adoption intention for audiobook apps.}

\textit{Facilitating Condition}

Facilitating conditions, a component of PBC, refer to the user's belief about the existence of resources and infrastructural support for efficient system usage.\textsuperscript{18,57} Facilitating conditions are supportive services that create positive user belief towards the PEOU of the technology, enhance their confidence in it, and are essential for its acceptance.\textsuperscript{18,19,58} For audiobooks, consumers with access to supporting infrastructures, like internet-enabled smartphones, high-speed internet connectivity, high-quality speakers/headphones and other infrastructural resources, will develop favourable perceptions and adopt the app\textsuperscript{57}. The supporting ecosystem provides ample user control over the technology, implying adequate management of resources for appropriate technology performance\textsuperscript{57}. Thus, we hypothesize:

\textit{H6: Facilitating conditions will positively influence the adoption intention for audiobook apps.}

\textit{Switching Cost and Adoption Intention}

\textit{Procedural Switching Cost}

PSC includes both learning and set-up costs in adopting new products/services, relative to the current technology, and subsumes time and effort risks.\textsuperscript{27,40} For audiobooks, PSC negatively influences adoption intention, as factors such as slow downloads, long buffering time, interrupted network-application connections, erroneous installations, and varying cross-device configuration
can deter consumers from adopting the app.\textsuperscript{37,40,59} Since using audiobook apps requires a skillset change and different learning patterns, compared to reading, it would emerge as a significant adoption barrier.\textsuperscript{37} Thus, if PSC for audiobooks is high, consumers will be less inclined to appreciate its utility and avoid adoption. Hence, we hypothesize:

\textit{H7:} High PSC will negatively influence the adoption intention for audiobook apps.

\textit{Financial Switching Cost}

FSC is the monetary sacrifice incurred by users when they migrate from one technology to another.\textsuperscript{36} FSC may arise from the contractual mechanism of the current provider or due to the prospective deficit of expected monetary benefits.\textsuperscript{42} For example, consumers may lose benefits in the form of discounts and points accumulated from the incumbent firm.\textsuperscript{27} FSC is intentionally created by existing technology providers to prevent customer switching.\textsuperscript{59} Given that switching from traditional bookstores to an audiobook app might result in the expiration of credits, discounts, and other benefits if the FSC is high, then the migration will be unattractive\textsuperscript{36,60}. Thus, it is hypothesized:

\textit{H8:} High FSC will negatively influence the adoption intention for audiobook apps.

\textit{Moderating role: Book genre options}

Consumers prefer new technology when it satisfies their specific needs.\textsuperscript{61} In the case of reading materials, the type of knowledge and entertainment needed shapes the choice of traditional/digital content.\textsuperscript{62} Similarly, for online education, attributes like course content and purpose positively affect the choice of e-learning platforms.\textsuperscript{63} Social cognition theory states that individuals passively keep themselves away from tasks that exceed their coping skills.\textsuperscript{64} If consumers enjoy the overall listening experience of the book’s content, it would enhance the PU

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and PEOU of the audiobook app and its adoption intention.\textsuperscript{65,89} The choice is expected to be focused on listening-friendly, relaxing, and information-assimilating content, like classic literature, novels, and mythology.\textsuperscript{46} Science and mathematics text may involve graphical/equation-based learning and maybe less comfortable to listen to.\textsuperscript{46,63} Thus, it is hypothesized:

\textit{H9/H10:} Audiobook genre moderates the relationship between PU/PEOU and attitude for the audiobook app, such that the relationship would vary with different genres.

Figure 1 depicts the proposed model.

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\textbf{Methodology}

\textit{Sample and data collection}

The population of this study are individuals familiar with audiobooks, but not users. Kozlowski\textsuperscript{69} indicates that audiobook users are largely men in the age group 18-34, hence, the potential adopters are also expected to be of this demographic. Data was collected through a structured questionnaire with non-probabilistic judgement sampling. Respondents selected were postgraduate students at a business school in India. Only respondents who had familiarity with the audiobook app, but not actual users and were willing to participate, were approached. A student sample is used because this group possesses the relevant characteristics of the phenomenon being studied. Prior research indicates the relevance of using a student sample when the objective is to test a theory.\textsuperscript{66} The data was collected in the three months of September-November of 2020.

In total, 855 respondents were approached after random selection from 1700 students, of which 720 usable responses were received, a response rate of 84.21\%. The data were randomly split into two parts of 360 responses each. The first data set was used for checking the psychometric
properties of the measures, while the second was used to evaluate the model. Prior research recommends a sample size of 200+ as appropriate for structural equation modelling\textsuperscript{67,68}. The sample profile is given in Table 1. It is evident that the sample contains respondents from the 17-30 age group and is composed of 78\% men, reflecting the population\textsuperscript{69}.

\begin{table}[h]
\centering
\caption{Sample Profile}
\begin{tabular}{ll}
\hline
Age Group & 17-30 \\
Gender & 78\% Men \\
\hline
\end{tabular}
\end{table}

**Measures**

The questionnaire items were adopted from established scales and adapted to the context, as shown in Table 2. Likert scale with anchors strongly agree (5) to strongly disagree (1) was deployed.

\begin{table}[h]
\centering
\caption{Questionnaire Items}
\begin{tabular}{ll}
\hline
Item & Description \\
\hline
Q1 & Item 1 \\
Q2 & Item 2 \\
\hline
\end{tabular}
\end{table}

To check for common method bias (CMB), the scale items were randomized, and respondents were assured of anonymity\textsuperscript{70}. Further, in the Harman one factor test, only 19.75 per cent of variance was explained by the largest\textsuperscript{71}. The absence of CMB was confirmed by the marker variable test.

**Results**

**Measurement Model**

Confirmatory factor analysis (CFA) was carried out in AMOS26 to evaluate the measurement model with the first dataset of 360 respondents. CFA results exhibited adequate fit, with a $\chi^2$/df=1.889 ($p$<0.01); goodness-of-fit (GFI)=0.902; incremental fit index (IFI)=0.913; comparative fit index (CFI)=0.911 and root-mean-square error of approximation (RMSEA)=0.059. Factor loadings, composite reliability, and average variance extracted (AVE)
are calculated for each variable to assess convergent validity (Table 3), which are above 0.70, 0.70, and 0.50, respectively.\textsuperscript{72,73}

\textbf{Hypothesis Testing}

The structural model was evaluated with the second dataset of 360 respondents. Figure 2 reflects the model with adequate model fit (CFI=0.944, IFI=0.945, GFI=0.950, RMSEA=0.059 and $\chi^2$/df=7.975). Examination of results indicates that hypotheses H1-H5 are significantly supported, while for H7, weak support is obtained. However, no support was found for H6 and H8.

\textbf{Moderation Test}

The moderation effect was analyzed using multi-group analysis on SEM, using the second dataset of 360 respondents.\textsuperscript{75,76} In the sample, there were 214 and 146 listeners for novel/literature and science/mathematics genres, respectively. The results in Table 5 indicate the moderating effect of audiobook genre preference on both the paths, from PU and PEOU to attitude. Thus, both H9
and H10 are supported, however, the path from PU to attitude is found higher for the novel/literature genre, while it is reverse for the path from PEOU to attitude.

Discussion and Implications

In the study findings, a favourable attitude towards the audio app leads to adoption intention.48,49 Attitude emerges as the most important predictor for adoption, suggesting that for disruptive innovations, consumer acceptance is more notable only when a positive cognitive/affective attitude is shaped. The significant relationship between PU and attitude is consistent with prior studies,24,25,33 and indicates that if consumers find the audiobook app relevant for their consumption experiences, they will develop positive attitudinal dispositions.

PEOU is found to influence both attitude and PU, which indicates that the convenience of using audiobook apps not only increases the app's utility but also help consumers develop a positive attitude towards it, which ensures adoption. Further, PU, compared to PEOU, is stronger in explaining attitude, suggesting that in non-work settings, such as audiobooks, PU, reflecting the flexibility of listening content on-the-go, is more important for shaping consumer likes/dislikes.24,43 Consumers have an array of alternatives, e.g., reading magazines, books/e-books, watch television, listen to music; hence, for creating a positive attitude to audiobook apps, they need to be perceived as more useful compared to the options.25

Next, self-efficacy, the consumer’s self-confidence and skillset for using the audiobook app, is found to influence adoption intention.26,52 Thus, a consumer with a perceived skillset through the app’s familiarity is more inclined to adopt audiobooks. Contrary to
expectations, facilitating conditions do not affect adoption intention, the plausible reason that the ecosystem infrastructure might gain importance post-adopter and shape continuance intentions, but not at the stage of initial adoption. This is a unique finding for the adoption of audiobook apps. Further, PSC, but not FSC, affect adoption intention. This finding is consistent with Pick and Eisend, where non-monetary costs emerged more important than financial ones. A possible reason could be that some audiobook apps may be freely available, including some complimentary book titles. Further, switching to audiobooks does not restrain consumers from visiting physical bookstores, hence, they can utilize both services. PSC becomes more important as consumers are more concerned about the risk involved with ineffective app performance or the effort required to cope with it. Finally, moderation results indicate that adoption of audiobook app, through favourable attitudes, is influenced by the preference of genre by consumers. If found equally useful, novel/literature audiobooks lead to a higher positive attitude, while mathematics/science audiobooks, if easy to comprehend, lead to stronger attitudes.

**Theoretical Implications**

The present study makes important academic contributions. First, it responds to the need for studies on emerging technologies that are behaviour-discontinuous. Audiobooks are apps that mandate a major behaviour change, from reading books/e-books to listening to them. The consumption experience for selecting/subscribing to audiobooks is different from other mobile apps, hence, more research on the adoption of such technologies is needed. The adoption of new technologies is also an outcome of the facilitating ecosystem and the user’s self-perceived capability to handle the technology. Additionally, there are switching barriers for users to shift to a different experience. Looking beyond the traditional theories, like the TAM, UTAUT, TPB, and expectation-confirmation theory, the present work integrates DTPB and SCT and
aggregates self-efficacy, facilitating conditions, and switching barriers with PEOU and PU. SCT has been studied in a limited sphere to understand loyalty behaviour,\textsuperscript{60} switching intent,\textsuperscript{80} and service performance\textsuperscript{36}, and this work represents a new application.

Second, the positive associations between PEOU/PU and attitude/adopter intention for audiobooks are following the traditional adoption theories.\textsuperscript{4,23,41} Even for behaviour-disruptive technologies, the importance of these two variables, despite the presence of other antecedents, for forming favourable attitudes and adoption intentions, remains intact.\textsuperscript{81,82} Further, the study also reveals the importance of self-efficacy, in conjunction with PEOU and PU, a novel combination, in enabling the migration of users to new technologies, like audiobooks.\textsuperscript{86} Next, the weak effect of PSC on adoption implies that the time and effort risks involved in purchasing, setting-up, evaluating, and learning its capabilities, can deter adoption, a finding aligned with existing works.\textsuperscript{40,41} Finally, the role of the book genre as a moderator supports the relevant literature, which argues that reading (in this case listening) behaviour is contingent on the book genre, with genres suitable for reading/listening facing faster adoption.\textsuperscript{76,83} The integrated model examining significance of self-efficacy, PSC and book genre to PEOU and PU for audiobooks adds to the extant literature that studies psychological drivers of new technology adoption.\textsuperscript{20,26,27,40,56}

Third, the effects of facilitating conditions and FSC are not found to impact adoption intentions, which go against theoretical evidence.\textsuperscript{25,42} This means that for some new technologies like audiobooks, the PEOU, PU, self-efficacy, and lower PSC can mitigate the requirement of such ecosystem at the initial adoption level; and such the ecosystem or FSC, as mentioned earlier, maybe more relevant post-adoption.\textsuperscript{17} The insignificant effects of these two factors in determining adoption, contrary to extant works,\textsuperscript{18,36,42,57} is novel insight and may warrant more investigation.

Practical Implications
The study also offers a few practical guidance. First, audiobook developers need to understand that such apps involve behaviour disruption since the consumers have to migrate from reading books/e-books to listening to them. Thus, audiobook developers, to enhance their PU, should aim to replicate, migrate, and improve the consumer experiences, from reading to listening. Needless to say, the overall listening experience, with effective background scores, high-quality immersive narrator's voice, narrator's articulation, and pace of talking should create listening experiences, better than reading ones. Beyond listening experience, the audiobook should help the user search for relevant books through an effective recommendation system. The study reports that book genres impact the attitude formation from perceived usefulness. Hence, marketers should effectively analyze consumer’s preferences and identify which genres and authors are popular for listening through the app. Novel/literature-based books are more useful for listening and should be available adequately on the platform. Such relevant recommendations can be integrated seamlessly into the listening experience, along with the regular recommendations, advertisements and promotions by publishers.

Second, the app developers should design an audiobook app that features a user-friendly interface and experience. Based on the works of Cyr\textsuperscript{84} and Mishra\textsuperscript{85}, it is recommended that developers should aim to develop a visually simple and familiar interface, and apply navigation and information designs for the app that make the surfing experience intuitive. Such features can include flexibility of translating language before/during the book narration, readable icon sizes in the app, an effective search engine to search for specific book genres, uncluttered summary information about the selected audiobook, homogenous app design across devices, and gesture-based inputs. If users find the audiobook easy to use, their self-perceived capability to use the app will also enhance, leading to favourable adoption. The self-efficacy of potential subscribers can
also be enhanced by advertising using the testimonials of existing users, who were earlier avid readers, and have since migrated to the user-friendly and useful audiobook app.

Third, to reduce the PSC to enhance adoption intention, audiobook marketers should provide full access to the app and book titles for a limited period, before consumers decide to subscribe to the service. If the prior recommendations of making the app useful and easy-to-use are implemented, consumers would be able to explore the app features and listening services to find them superior to reading books/e-books, as well as searching/buying them. Such trial periods will give consumers an understanding of the smooth functioning of the audiobook app and reduce their transition anxiety. Further, audiobook app developers can partner with exiting physical bookstores to introduce a hybrid mode, such that consumers can choose to buy a regular book from their preferred bookstore, or can listen to it through the audiobook app, rendering FSC redundant.

**Limitations and Future Research Directions**

The study has three limitations. First, this study does not incorporate actual consumption behaviour and takes into account only the user’s intention to adopt. Since audiobook apps are still in an early stage of adoption in many emerging economies and the infrastructure is yet to develop to incorporate systems that facilitate audiobook listening, it would be interesting to learn about its actual usage behaviour. Future studies could replicate this research across various countries, both developing and developed with audiobooks at different stages of audiobook audiobooks, to capture the differences in the proposed framework.

Second, while the 17–30-year age group is the largest consumer group for audiobooks, causing the authors to recruit students for the study, in future, a more comprehensive study can be done to capture the perspective of different user segments across age groups to know similarity/dissimilarity about their adoption processes. Different customer characteristics such as gender, education, age, lifestyle, occupation can be examined as moderator variables.
Lastly, other variables like the type of device used, the platform of the device, the type of constraints faced by the user, environment of the user (home/travel), may shape audiobook adoption and usage. Future studies can add more constructs and expand the present study to explore other variables that not only affect the adoption intention of audiobook apps but also their continued usage.

*Data Availability Statement: The data that support the findings of this study are available from the corresponding author, [YD], upon reasonable request.*
REFERENCES


LIST OF TABLES

Table 1: Sample characteristic (overall)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Category</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>560</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>160</td>
<td>22</td>
</tr>
<tr>
<td>Age(Years)</td>
<td>17 – 20</td>
<td>216</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>20 - 25</td>
<td>482</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>25 - 30</td>
<td>22</td>
<td>3</td>
</tr>
<tr>
<td>Audiobook Genre Preference</td>
<td>Novel/Literature</td>
<td>428</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>Science/Mathematics</td>
<td>292</td>
<td>41</td>
</tr>
</tbody>
</table>

Table 2: Scale Summary

<table>
<thead>
<tr>
<th>Item</th>
<th>Item Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Usefulness24</td>
<td></td>
</tr>
<tr>
<td>PU1</td>
<td>Using audiobook app should improve my reading productivity.</td>
</tr>
<tr>
<td>PU2</td>
<td>Using audiobook app should make it easier to understand books.</td>
</tr>
<tr>
<td>PU3</td>
<td>Overall, I think I will find the audiobook app useful.</td>
</tr>
<tr>
<td>Perceived Ease of Use24</td>
<td></td>
</tr>
<tr>
<td>PEOU1</td>
<td>Using audiobook app should be easy for me.</td>
</tr>
<tr>
<td>PEOU2</td>
<td>My interaction with audiobook app would be clear and understandable.</td>
</tr>
<tr>
<td>PEOU3</td>
<td>It would be easy for me to remember how to use audiobook app.</td>
</tr>
<tr>
<td>Self- Efficacy24,26</td>
<td></td>
</tr>
<tr>
<td>SE1</td>
<td>Using the audiobook app should be within my control.</td>
</tr>
<tr>
<td>SE2</td>
<td>I have the knowledge to use audiobooks mobile app.</td>
</tr>
<tr>
<td>SE3</td>
<td>I would be able to effectively use the audiobook app.</td>
</tr>
<tr>
<td>Attitude18</td>
<td></td>
</tr>
<tr>
<td>ATT1</td>
<td>I assume that it is a good idea to use audiobook app.</td>
</tr>
<tr>
<td>ATT2</td>
<td>The audiobook app should make books more interesting.</td>
</tr>
<tr>
<td>ATT3</td>
<td>I think that it is reasonable to use audiobook app.</td>
</tr>
<tr>
<td>ATT4</td>
<td>Using the audiobook app should be fun.</td>
</tr>
<tr>
<td>Adoption Intention24,57</td>
<td></td>
</tr>
<tr>
<td>AI1</td>
<td>I intend to use audiobook app for a long time.</td>
</tr>
<tr>
<td>AI2</td>
<td>I intend to use audiobook app for all book reading purposes.</td>
</tr>
</tbody>
</table>
AI3: I intend to use audiobook app more frequently than reading.

Procedural Switching Cost
PSC1: Learning to use the features offered by audiobook app application would take time.
PSC2: Compared to reading, I find the pace of speaking in the audiobook app tedious.
PSC3: The process of shifting from reading to audiobook app is slow.

Financial Switching Cost
FSC1: Switching to audiobook app would cause hidden and unpredictable costs
FSC2: If I switch to audiobook app, I will miss some of the services from bookstores
FSC3: Switching to audiobook app would cause a monetary loss

Facilitating Condition
FC1: I have the network necessary to use audiobook app.
FC2: The cost of purchasing a mobile device suitable for audiobook app is high
FC3: I have enough resources to use audiobook app.

Table 3: Psychometric properties (first dataset)

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item</th>
<th>Loadings</th>
<th>Composite Reliability</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFA (χ²/df=1.889; RMSEA=0.059; GFI=0.902; IFI=0.913; CFI=0.911)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Usefulness</td>
<td>PU1</td>
<td>0.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PU2</td>
<td>0.78</td>
<td>0.84</td>
<td>0.64</td>
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<tr>
<td></td>
<td>PU3</td>
<td>0.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PEOU1</td>
<td>0.79</td>
<td></td>
<td></td>
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<tr>
<td>Perceived Ease of Use</td>
<td>PEOU2</td>
<td>0.78</td>
<td>0.81</td>
<td>0.58</td>
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<tr>
<td></td>
<td>PEOU3</td>
<td>0.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Switching Cost</td>
<td>FSC 1</td>
<td>0.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FSC 2</td>
<td>0.73</td>
<td>0.81</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>FSC 3</td>
<td>0.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilitating Condition</td>
<td>FC 1</td>
<td>0.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FC 2</td>
<td>0.71</td>
<td>0.75</td>
<td>0.51</td>
</tr>
<tr>
<td></td>
<td>FC 3</td>
<td>0.69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>SE1</td>
<td>0.74</td>
<td>0.80</td>
<td>0.58</td>
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<tr>
<td></td>
<td>SE2</td>
<td>0.77</td>
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<td></td>
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<tr>
<td>Constructs</td>
<td>PU</td>
<td>PEOU</td>
<td>SE</td>
<td>FC</td>
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<tr>
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<td>------</td>
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<td>------</td>
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<tr>
<td><strong>PU</strong></td>
<td><strong>0.79</strong></td>
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<tr>
<td><strong>PEOU</strong></td>
<td>0.39</td>
<td><strong>0.76</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>SE</strong></td>
<td>0.36</td>
<td>0.33</td>
<td><strong>0.76</strong></td>
<td></td>
</tr>
<tr>
<td><strong>FC</strong></td>
<td>0.24</td>
<td>0.12</td>
<td>0.28</td>
<td><strong>0.71</strong></td>
</tr>
<tr>
<td><strong>ATT</strong></td>
<td>0.37</td>
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<tr>
<td><strong>AI</strong></td>
<td>0.26</td>
<td>0.23</td>
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<tr>
<td><strong>FSC</strong></td>
<td>-0.04</td>
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<td>-0.14</td>
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<tr>
<td><strong>PSC</strong></td>
<td>-0.09</td>
<td>-0.04</td>
<td>-0.23</td>
<td>-0.18</td>
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</tbody>
</table>

**Note:** Significance level p<0.01; diagonal values are the first root of AVE
ATT:Attitude; AI:Adoption Intention; PSC:Procedural Switching Cost; FSC:Financial Switching Cost; SE:Self Efficacy; FC:Facilitating Condition; PU:Perceived Usefulness; PEOU:Perceived Ease of Use
Table 5: Moderation analysis (second dataset)

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Moderator variable</th>
<th>Chi-square difference (Δ df=1)</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Novel/Literature</td>
<td>Science/Mathematics</td>
<td></td>
</tr>
<tr>
<td>PU-ATT</td>
<td>( \beta =0.396(p&lt;0.05) )</td>
<td>( \beta =0.382(p&lt;0.05) )</td>
<td>( \Delta \chi^2 =8.641(p&lt;0.01) )</td>
</tr>
<tr>
<td>PEOU-ATT</td>
<td>( \beta =0.476(p&lt;0.05) )</td>
<td>( \beta =0.521(p&lt;0.05) )</td>
<td>( \Delta \chi^2 =8.506(p&lt;0.01) )</td>
</tr>
</tbody>
</table>

Notes: ATT: Attitude; AI: Adoption Intention; PU: Perceived Usefulness; PEOU: Perceived Ease of Use
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Figure 1: Proposed Theoretical Framework

- Attitudinal Belief
  - Perceived Usefulness
  - Perceived Ease Of Use

- Perceived Behavioral Control
  - Self Efficacy
  - Facilitating Condition

- Switching Cost
  - Procedural Switching Cost
  - Financial Switching Cost

- Audiobook Genre

- Attitude

- Adoption Intention

H1
H2
H3
H4
H5
H6
H7
H8
H9
H10
Figure 2: Model results (second dataset)

Perceived Usefulness (CR:.83; AVE:.63)

- PU1: .72
- PU2: .79
- PU3: .86

Perceived Ease of Use (CR:.78; AVE:.55)

- PEQU1: .73
- PEQU2: .77
- PEQU3: .72

Self Efficacy (CR:.81; AVE:.58)

- SE1: .74
- SE2: .77
- SE3: .78

Facilitating Condition (CR:.77; AVE:.53)

- FC1: .75
- FC2: .72
- FC3: .71

Procedural Cost (CR:.78; AVE:.54)

- PSC1: .78
- PSC2: .70
- PSC3: .73

Financial Cost (CR:.81; AVE:.58)

- FSC1: .75
- FSC2: .73
- FSC3: .81

Attitude (CR:.86; AVE:.62)

- ATT1: .78
- ATT2: .82
- ATT3: .75
- ATT4: .79

Adoption Intention (CR:.87; AVE:.69)

- INT1: .79
- INT2: .87
- INT3: .84

β = .631* (CR: Composite Reliability
AVE: Average Variance Extracted
β: Standardized Path Value)