

Do mobile device and mobile app innovations trigger lifestylisations? Insights from consumers in developing countries

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Abstract

Purpose – The exponential growth of smartphones is complemented by an astronomical development of mobile apps that have been changing ways in which humans interact with each other, as well as how brands and customers interact. This study aims to examine the effect of mobile device and mobile app innovations on user lifestylisation among consumers from developing countries.

Design/methodology/approach – Through a qualitative approach, data was collected via focus group interviews from 32 participants from across 15 developing countries who were largely emerging cosmopolitans.

Findings – Using the thematic analysis technique, the study finds that consumer lifestylisations, based on consumption and utilisation of mobile devices and mobile apps, hinge on either pre-purchase considerations or post-purchase discoveries that stem from a bouquet of hedonic and/or utilitarian motivations. Two consumer categories are identified, with each category exhibiting unique patterns.

Originality/value – The empirical findings provide valuable theoretical contributions to new knowledge as well as practical implications for mobile gadget manufacturers and mobile app developers domiciled, or those aiming to establish their presence, in developing economies.

Keywords Mobile device, Mobile apps, Mobile innovations, User lifestylisation, Developing countries

Paper type Research paper

Introduction

The study examines the influence of mobile device and mobile app innovations on consumer lifestylisations. Mobile devices and mobile technologies impact human interactions and endeavours in several ways. During the past few decades, there have been numerous and unending innovations from mobile device manufacturers, all aimed at gaining consumers' attention and stimulating patronage for their brands. Along with these mobile innovations come several applications (apps) that are expected to impact consumers in diverse ways – socialisation, entertainment, productivity, creativity, finance management, education, travel and health and fitness, among others. These mobile devices and apps are becoming the epicentre of people's lives, bringing the virtual and real worlds closer together than ever before (Rauschnabel *et al.*, 2019; Sung, 2021). Accordingly, many strands of scholarly works have attempted to understand the nuances relating to interactions, activities and/or experiences of humans versus mobile devices and mobile apps (Hadi and Valenzuela, 2020;



Stocchi *et al.*, 2021). Our engagement with existing literature reveals that idiosyncrasies from research on consumers *vis-à-vis* mobile devices and mobile apps demonstrate a fuzzy posture.

Generally, some scholars proffer positive corollaries such as facilitation of mobile payments (Odom and Kosiba, 2020), mobile health care (Wu *et al.*, 2011), mobile commerce (Ngai and Gunasekaran, 2007), mobile learning (Crompton and Burke, 2018), mobile shopping (Agrebi and Jallais, 2015) and mobile enterprises (Mrad *et al.*, 2022), among others. On the contrary, other studies have presented negative outlooks, such as those relating to mobile gambling addictions (James *et al.*, 2017), mobile devices and sleep disorders (Bartel *et al.*, 2019), mobile and radiofrequency radiation exposures, as well as disorders such as anxiety, depression and stress that are linked to mobile device usages (Konok *et al.*, 2017). It appears, therefore, that the human–mobile interactions are generally not one-sided as regards the effects and impacts. This renders our knowledge on the human–mobile subject inconclusive. To this end, research on human–mobile interactions could be interminable, creating avenues for more scholarly inquiries and curiosities to coagulate existing knowledge.

Regarding research on mobile apps and mobile device innovations that are aimed at altering consumer lifestyles, available literature exhibits scant evidence. Notably, only the focus on health-related themes seems budding in the literature. Presently, one of the fuzzy gaps in the literature awaiting to blossom relates to consumer *lifestylisations* that are triggered by mobile applications and mobile device innovations. Evidently, major mobile device manufacturers integrate some apps (preinstalled or via third-party) and innovations for prospective consumers of their brand, with the hope that these (often preferable) apps and innovations will not only stimulate patronage or purchases but also impact *lifestylisations*. It is further accentuated by human psychology and computer interaction research that, understanding end user lifestyle needs is critical in designing these types of technology-based interventions (Stocchi *et al.*, 2021; McLean *et al.*, 2022). However, it is not resolutely established if, indeed, these devices and apps impress upon consumers' lifestyles, and to what extent, and in what direction.

This research differs from existing studies and offers a new stock of contributions, whereas past research has mainly dealt with the problem of estimating app demand (Ghose and Han, 2014), drivers of app downloads (Gokgoz *et al.*, 2021), as well as app innovation diffusion, adoption and usage intentions (Hung *et al.*, 2021; Liu and Sese, 2021; Shaw *et al.*, 2022), even across different life stages (Frey *et al.*, 2017), the aim of this study is to examine the influence of mobile apps and mobile device innovations or technologies on user *lifestylisation*. Secondly, it draws perspectives from users/consumers in developing countries; a domain that is meagrely represented in the literature on the subject under investigation due to the relatively slower pace of technology adoption as well as lower internet penetration rates in such settings. The key question underlying this study, therefore, is to ascertain whether mobile technologies (device and app innovations) really alter *lifestylisations* among consumers. The study seeks to examine this from two perspectives by attempting to find answers to the following sub-questions:

- RQ1. Do consumers deliberately buy and use mobile devices and app (preloaded or downloadable) innovations that fit their existing lifestyles? More specifically, is the consumption of these devices and app innovations influenced by their current lifestyles, and to what extent?
- RQ2. Do they rather adopt/commence certain (new) lifestyles based on the novelty in mobile technology innovations and the apps they consume?

The remainder of the paper is structured as follows. The second section looks at related literature on consumer lifestylisation, mobile innovations, as well as mobile apps and consumer lifestyles. This is followed by the methods involved in data collection for the research and its subsequent analyses. The final sections draw upon discussions of the research, tying up the various theoretical and empirical strands on the subject under investigation and the implication of the findings to practice and future research into this area.

Related literature

Consumer lifestylisation

From extant literature, *lifestylisation* as a concept appears sparsely used. [Lucivero and Prainsack \(2015\)](#), for instance, used the term lifestylisation in their study to signify the emergence of health technologies that progress beyond-the-clinic towards a biomedicalisation of everyday life. In a similar fashion, [Knudsen and Triantafillou \(2021\)](#) used lifestylisation to examine how rationalities of lifestyle interventions concerned with prevention of certain choices and social risks appear as the obvious method to address diabetes and to optimise self-management. From a sociological standpoint, [Conway \(2021\)](#) delineates how the lifestylisation of LGBTQ+ identities obscures inequality and contributes to the neoliberal co-option of Pride. From these studies, it presupposes that the concept of lifestylisation denotes the integration of any phenomenon, activity, technology or an ideology in normalising and/or altering human lifestyles. [Featherstone \(1987\)](#) describes lifestyle as an individual's everyday habits, practices, tastes, consumption choices, leisure activities, dress and speech.

Likewise, this study operationalises the term lifestylisation to reflect how features and functionalities of mobile device and mobile app innovations activate different (new, augmented or reduced) levels of habits, practices, tastes and consumption choices in individuals. Evidence from a study by [Hadi and Valenzuela \(2020\)](#) reveals that haptic alerts accompanying messages, for instance, can improve consumer performance on related tasks. Their study further demonstrates that this effect is driven by an increased sense of social presence in what can otherwise feel like an impersonal technological exchange. Additionally, [Tan et al. \(2022\)](#) hint of a global shift in consumer shopping lifestyles as a result of augmented reality-enabled mobile apps in retailing. Similarly, a consumer whose lifestyle is accustomed to the convenience of ride-sharing mobile apps may expect an equal level of convenience in other service settings such as banking and healthcare ([Schweidel et al., 2022](#)). Consequently, various characteristics embedded in mobile devices and apps engender assortments in consumer lifestylisations, and marketers are adopting increasingly sophisticated ways to engage with customers throughout their journeys.

Mobile device innovations

Mobile technologies have become increasingly pervasive and integral in human daily lives ([Schueller et al., 2021](#)). Technology giants such as Google, Apple and Samsung are known for mobile innovations in most of the products they launch – from mobile phones and tablets, to other wearable devices ([Holland, 2016](#)). These mobile technologies and devices provide highly scalable new approaches to affecting human lifestyles. Indeed, [Jarvenpaa and Lang \(2005\)](#) claim that the positive and negative impacts of mobile technology are conceptually inseparable and grow in strength with new releases, new designs of handsets and service functions that are continuously introducing new capabilities and improving performance on some dimensions. Smartphones, in particular, combine communication and computing capabilities with mobility and personality, enabling users to carry out some

tasks while on the move, and from whichever location they find themselves. On the part of firms, [Foroudi et al. \(2017\)](#) aver that digital technology is progressively implemented to respond to customer needs and improve customer-side operations.

Alongside smartphones, other mobile devices and accessories have been produced to augment user lifestyles and endeavours. These devices are often paired or linked with personal smartphones via different wireless protocols, such as Bluetooth, Zigbee, NFC, Wi-Fi, LiFi, 5G to offer various complementary services for users, either within proximity or even from a distance. Mobile accessories such as wearable smartwatches are now available on consumer markets across the globe and are produced by several manufacturers. It is estimated that the wearable market will see over 190 million devices shipped by the end of 2022, and 440 million units by 2024, with smartwatches accounting for more than 121 million of those devices ([Statista, 2018](#); [Deloitte, 2021](#)). These smartwatches, for instance, are packed with applications that help monitor and control information required for their routines – directions and navigations, weather reports and alerts, environmental sound decibels, health and wellness and emergencies, among others. In fact, [Deloitte \(2021\)](#) reports that advances in sensors and artificial intelligence are even making these wearables get better all the time.

Furthermore, iPads and tablets provide users with portable and/or mobile computing capabilities that enable tasks to be carried out while on the move. Mobile devices for sound and music (such as ear pods, earbuds, iPod) come into play alongside mobile innovations, aiding in sound privacy and clarity of listening for users. Others, such as Amazon's Kindle, Sony's PSP, virtual reality glasses and augmented reality devices and technologies continue to shape human lifestyles and behaviours in diverse ways. Accordingly, various manufacturing brands are continually capitalising on the blossoming wave to introduce new features and functions in these mobile devices for users. In effect, beyond their basic communication, productivity and entertainment functions, these mobile innovations operate as multiple things packed into portable, compatible devices, which allow users to develop feature favourites that are peculiar to their lifestyle. The next section discusses the nuances of mobile apps and consumer lifestylisation.

Mobile apps and consumer lifestylisations

The exponential growth of smartphones is complemented by an astronomical development of mobile apps that have been changing the ways in which humans interact with each other, as well as how brands and customers interact. [Kapoor and Vij \(2018\)](#) describe a mobile app in simple terms as a software application that is developed specifically for use on small, wireless computing devices, such as smartphones and tablets, rather than desktop or laptop computers. Evidently, there are millions of paid and free mobile apps ([Arora et al., 2017](#); [Gokgoz et al., 2021](#)) available for various mobile devices and across varied operating systems. These apps are typically developed by software industries, individuals and organisations or institutions for either private or public access and use. They serve as a hub for a variety of content and services that mobile users can access anytime, anywhere. For mobile phone apps, in particular, they enable consumers to take care of all manner of daily tasks; buy products, pay bills, locate ATMs, find local businesses, get driving directions, scan a barcode and compare product prices and browse/review menus of restaurants ([Kim et al., 2013](#)).

Given that mobile apps have become a fixture of modern life, millions of people rely on them daily to accomplish a range of essential activities ([Jung et al., 2019](#)). Default (common) apps on mobile phones such as phone book, calendar, clock, camera, reminder, calculator and navigation utilities such as maps and compasses are naturally incorporated in

smartphones to make user lifestyles a tad easier. Undeniably, mobile users derive hedonic (pleasure oriented and used purely for their entertainment value) as well as utilitarian (task-oriented and used for their efficiency value) benefits from mobile apps (Tafesse, 2021). Thus, these apps could be used not only in task-oriented settings such as schools and workplaces but also casually at homes and other leisurely settings purely for their gratification worth. Consequently, we examine a few categories of lifestyleisations which these mobile apps are largely expected to influence.

Education and productivity. From a utilitarian angle, mobile apps that fall within this category generally contain functions that provide users with new knowledge, skill development and enhanced efficiency in work-related outputs. They often impress upon users' lifestyles by teaching users new ways of doing things or as platforms to acquire some form of life-improving information and a springboard to business value (Accenture, 2021). Schools and other institutions of learning have undoubtedly embraced such apps to boost their industry, normally via mobile learning. Research stream on mobile apps for learning has likewise seen significant representation in the literature (Zydney and Warner, 2016), reinforcing their utilitarian essence across several disciplines. Indeed, there is evidence to support the use of mobile apps for (foreign) language learning (Gangaiamaran and Pasupathi, 2017; Nami, 2020). For productivity, mobile versions of common apps such as Microsoft suite packages, Dropbox and other similar apps enable users to access and work/edit documentations as they would have done on a computer. Various professionals are also increasingly turning to smartphones and mobile apps at tactical, operational and strategic levels to resolve their productivity problems (see, Jewell, 2011; Liu *et al.*, 2019).

Health and wellness. In the area of health and wellness, mobile health app developers are rapidly becoming interested in supporting the daily self-care of consumers, including people with chronic conditions (Escoffery *et al.*, 2018). Given the upsurge in the use of smart mobile devices, many health and wellness apps are being developed using cognitive and behavioural intervention technologies (Payne *et al.*, 2015; Schueller *et al.*, 2021). Even though clinically validated evidence for most of them is unclear, there are growing numbers of mobile apps available for monitoring and managing health symptoms or disorders (Wang *et al.*, 2018). Generally, these apps have functions and features that serve as health/fitness trackers and monitors (Wang and Collins, 2021). They are developed to give users extra insights into daily fitness routines, as well as ease the ability to keep tabs on health routines (body measurement, cycle tracking, nutrition, etc.) and medication management. Such apps contain features such as pedometers, sleep monitors, blood pressure and vitals monitors, weight and dietary schemes and physical activity (running, swimming, cycling, etc.) trackers for improving user lifestyles.

Finance and banking. Among the areas that has also seen mammoth revolutions and progress regarding mobile technologies' effects on human endeavours is the field of banking and finance. From one angle, this has been triggered by activities of mobile commerce and mobile payment systems in a steadily rising fintech era (Odoom and Kosiba, 2020; Verkijika and Neneh, 2021). In this regard, mobile devices and mobile apps have provided such an enormous opportunity for financial development and are anticipated to become a common tool for carrying out various financial transactions (Iman, 2018). From another angle, the use of personal finance mobile apps results in an improvement in various measures used to assess financial knowledge and skills, attitudes and motivations and financially capable behaviours (French *et al.*, 2021). The overarching manifestations of these behaviours relate to sound financial management such as tracking bill due dates, tracking subscriptions, calculating credit scores and managing investments and unexpected bills. With numerous financial institutions across the world developing their privately branded banking apps,

consumers now have convenient ways of handling personal transactions effectively and efficiently, particularly in a cashless manner.

Entertainment and socialisation. Given the popularity of smartphones, the number of entertainment mobile apps has increased (Hung *et al.*, 2021) largely because they brighten up users' leisure time without demanding much effort. Entertainment apps feature an assortment of interactive activities; from purely leisure apps (music, video, podcasts, streaming media, games, etc.) to communication apps (social media, instant messaging). Evidently, consumers use apps that are designed with entertaining elements such as games and social networking (Leong *et al.*, 2013), as such apps trigger hedonic motivation, which is a proven significant contributor to higher intention to use mobile apps (Hew *et al.*, 2015; Van Noort and Van Reijmersdal, 2019). The recent glaring rise of multimedia in mobile entertainment which is shaping lifestyles is also accompanied with music and video streaming apps that provide hedonic benefits for users. Unsurprisingly, the top ten globally most downloaded apps in recent times (TikTok, WhatsApp, Facebook, Instagram, Zoom, Facebook Messenger, Snapchat, Telegram, Google Meets and Netflix) include more than 70% of entertainment and socialisation apps (Forbes, 2021).

Shopping and travel. Over the past decade, mobile shopping has been a blossoming trend where users search, browse, compare and purchase goods and services via wireless handheld or mobile devices, especially smartphones and tablets (Marriott *et al.*, 2017). With the aid of mobile shopping and travel apps, in particular, users benefit in terms of reduced time and physical/cognitive effort as compared to desktop websites. It is reported that nearly 90% of mobile internet time is spent in apps, and more than 90% of all smartphone users have at least one shopping app on their mobile phone (Mindsea, 2019; Patel *et al.*, 2020). Accordingly, more mobile shopping apps are being introduced for consumers' usage during the purchase journey, with some firms gleaming cross-selling benefits via these apps (Liu and Sese, 2021). Travel-related apps also provide users with ease of flight and hotel bookings. In fact, some of these apps have become sustainable shopping and travel guides in the field of e-commerce retailing, assisting consumers in sustainable food choices (Weber, 2021) and promoting sustainable travel behaviour (Sunio and Schmöcker, 2017).

Methods

Research design, recruitment and sampling

Given the relatively scant research regarding mobile innovations and mobile apps on consumer lifestyle, as well as limited research from developing countries, the study uses a qualitative approach. Using a qualitative research method (Bryman and Bell, 2015) allows the gathering of in-depth insights, empirical details and narratives on the subject matter (Cass and Faulconbridge, 2016). From multiple participants, such qualitative insights can be collected through conversations without the use of rigid structures in gaining understanding of experiences with participants. Again, despite having a list of questions grounded on a theoretical framework, researchers can modify the questions when needed, with participants also having adequate flexibility in their responses. Mogaji *et al.* (2021) suggest that this can result in the collection of more relevant information.

In this study, focus group interviews were used to gain insights into the consumer lifestyle changes emanating from mobile innovations and mobile apps. Smartphones and mobile devices are social tools; therefore, using an interactive focus group method allowed the researcher to draw out perceptions of social norms in addition to the individual-lived experiences of smartphone owners (Fullwood *et al.*, 2017). According to Wilkinson (2004), focus group interviews provide researchers with elaborative perspectives on the topic under discussion with its major strength stemming from the group dynamics and interactions.

Unlike individual interviews, group members are likely to challenge each other's views, argue for a change in opinions and converge on matters that are important to them (Bryman and Bell, 2015). To provide informative responses for theory development in a relatively under-research area, the efficacy and validity of the data are affected by the extent to which participants feel comfortable about openness in communicating their ideas, views or opinions (Stewart and Shamdasani, 1990).

For focus groups, the sessions are typically in a more relaxed manner and the participants feel at ease in conversations given the relatability of the subject under discussion (Bryman and Bell, 2015). Moreover, members feel that they are peers, as there is something familiar connecting them. To create such an atmosphere, it was essential to ensure that each focus group had naturally forming group membership, particularly in terms of age structure. As a result, we ensured that for each group's session, the age difference was not more than three years between the youngest member and the oldest member. Given the impact of the COVID-19 pandemic on data collection, data were gathered from participants who were recruited purposively and voluntarily, and in few instances, snowball sampling methods. Information about the study was shared on various social media platforms, such as WhatsApp, Twitter and Facebook. To fulfil the remit of the study, a condition for inclusion was that a respondent's nationality should be from either a developing or a less-developed country.

Interested participants were to send their emails to be contacted privately with more information on the objectives and other modalities relating to the research. Participants were assured of their anonymity; that no personal identifiable details would be shared, and that the research was for academic purpose only. This yielded 48 volunteers who were willing to partake in an online focus group discussion for the research. After initial interactions during which further details (including scheduled dates and times for the focus groups) about the study were explained, a few prospects dropped, mostly due to inconvenient time zones. From an initial 48 volunteering individuals, 32 agreed to participate in the focus group discussions, resulting in an approximate 66.7% response rate. Various dates and times for the series of online focus group discussions were arranged and agreed on. Consideration was taken regarding favourable schedules and availability of a common software (Zoom) for a virtual meeting, as some participants were under lockdown/restricted movement conditions owing to the COVID-19 pandemic.

Participants and procedures

In all, there were five groups with an average of six members for each interview session. All the participants owned at least a smartphone and/or a mobile device/accessory. In fulfilling Neuman's (2007) recommendation of obtaining a diverse rather than representative sample to generate snapshots of social reality, participants for the focus group discussions were from different (developing) countries, with varied demographics. Each respondent's basic information was collected upon signing up, gender, age, nationality and brand of mobile device used. On the average, the focus group discussions lasted between 55 and 75 min, and e-gift cards (valued at \$25) were provided to the participants as incentives to compensate for their time. Moreover, to ensure content validity of the interview guide and questions, each session was perused and moderated by the researcher alongside an expert in mobile devices or apps. In all the sessions, the moderators proceeded with the same set of questions, before other queries emanated as follow-ups in various circumstances.

Generally, the participants exhibited attributes of emerging cosmopolitans or the new global elite. To extract the precise remarks attributable to specific members in the focus groups, each participant was given a unique research identity (MAU1 to MAU32) as a tag

during the sessions. Furthermore, to maximise the reliability and trustworthiness of the data, the Zoom software made it possible for each session to be recorded (with participants' permission) and professionally transcribed verbatim. Later, we checked the transcriptions against the recordings and inspected the data obtained for (in)consistencies in the individual participant's responses (Stiles, 1993). Moreover, we used the recycling process (Atwood and Stolorow, 1984) by ensuring that the focus group moderators periodically reflected their understanding to the participants during the sessions to check the accuracy of interpretation.

Data analysis

Subsequently the transcriptions were analysed by using thematic analysis. Following the process recommended by Braun and Clarke (2006), this research used five stages in analysis: familiarisation with the data, generation of initial codes; searching for themes, reviewing themes and defining and naming themes. The focus group data were then coded at the latent level. This was done to provide an overview of the entire data set and, afterwards, involved a refining of the coded data within each theme. By this, it was ensured that each theme was mutually exclusive, with the coded data and extracts accurately representing the themes. By way of strengthening the reliability and rigour of the study, the developed themes were perused by the research team and the experts used as moderators. As the main aim of this research is to explore and obtain insights into consumer lifestyleisations emanating from mobile innovations and mobile apps, validity (trustworthiness of interpretations) is enhanced by using a range of the participants' quotes to support the interpretation of findings. By recognising this, the results were expressed tentatively, rather than predicting or generalising.

Results

General characteristics

Table 1 presents the demographic and basic details collected from the participants. There were 53.1% ($n = 17$) males and 46.9% ($n = 15$) females regarding the gender of the participants. These participants also reported on their (multiple) mobile devices from different brands as depicted in Table 1. The mean ages for each of the groups were 21 years, 24 years, 26 years, 30 years and 33 years. The level of education obtained by the participants ranged from a bachelor's degree to postgraduate (master's degree and PhD) qualifications. A look at the geographical representation or nationalities of the participants further revealed different (developing) countries across various continents representing emerging cosmopolitans. For most of the participants, they engage with their devices and apps more than five times in a week and, averagely, for more than two hours each day, making them heavy users. Thus, these participants suited the ramifications of the study. A number of themes were identified from the accounts of the participants during the focus group discussions.

Preliminary purchase/usage considerations

One of the key questions posed among the participants during the focus group discussions relate to the preliminary considerations pondered by consumers prior to their device purchases or app usages. The majority of the respondents hinted that as far as pre-purchase considerations are concerned, activities, events, reviews and other information relating to pre-product launch, naturally inform them regarding what to expect as features from mobile device or app innovations. Undoubtedly, pre-launch information on products and services

Participant Code	Gender	Age	Level of education	Nationality	Mobile device brand
MAU1	Female	19	Bachelors	India	Huawei
MAU2	Male	20	Bachelors	Vietnam	Samsung
MAU3	Female	23	Bachelors	Ghana	iPhone
MAU4	Female	21	Bachelors	Nigeria	Samsung
MAU5	Male	22	Bachelors	South Africa	iPhone
MAU6	Male	21	Bachelors	Ghana	Techno
MAU7	Male	25	Masters	Indonesia	Samsung
MAU8	Female	28	Bachelors	India	Xiaomi
MAU9	Female	24	Bachelors	Kenya	iPhone
MAU10	Male	27	Masters	Bangladesh	Oppo
MAU11	Female	27	Masters	Gambia	Samsung
MAU12	Male	25	Bachelors	Tanzania	Samsung
MAU13	Male	32	PhD	Rwanda	Samsung
MAU14	Female	35	Masters	Taiwan	iPhone
MAU15	Male	31	Masters	Vietnam	Oppo
MAU16	Male	34	PhD	Kenya	Samsung
MAU17	Female	34	Masters	Uganda	Huawei
MAU18	Female	32	Bachelors	Brazil	iPhone
MAU19	Male	22	Bachelors	India	One Plus
MAU20	Female	24	Bachelors	Rwanda	Techno
MAU21	Male	26	Masters	Bangladesh	Xiaomi
MAU22	Male	23	Bachelors	Nigeria	Samsung
MAU23	Female	25	Masters	Ghana	iPhone
MAU24	Male	24	Bachelors	Nigeria	Huawei
MAU25	Female	24	Bachelors	South Africa	Samsung
MAU26	Female	30	Masters	Brazil	Xiaomi
MAU27	Female	28	Bachelors	Nigeria	Nokia
MAU28	Male	32	Bachelors	India	LG
MAU29	Female	31	Masters	Jamaica	iPhone
MAU30	Male	30	Bachelors	Brazil	iPhone
MAU31	Male	28	Bachelors	Taiwan	Oppo
MAU32	Male	31	Masters	Uganda	Samsung

Table 1.
Demographic details
of participants

are recognised for their role in generating buzzes and conversations among potential consumers of the brand, with an overarching effect of triggering initial sales and actual purchases. For most mobile devices and app users, pre-launch broadcasts and events, blogs and reviews from beta users are often the go-to sources for all possible need-to-knows on mobile devices and apps:

Before my current iPhone, I had read about the new features that were going to come with the latest model. So, I was a bit eager to try them after it was finally announced during the annual Apple event all that the latest model and accessories came with (MAU30).

There are some product reviewers on YouTube who do unboxing of (new) mobile devices and the apps that are compatible with them. I watch such videos and also read comments, before I decide to get all my mobile phones and smartwatches (MAU7).

For me, I check my phone brand's website whenever there is news about new products or accessories. This makes me know whether I am changing my current phone/accessory or just wait for a software update to enjoy whatever feature that comes with the new models (MAU20).

Beyond the mundane factors (such as battery life, memory, processor, display, cost) that are initially considered by a lot of consumers when acquiring mobile devices, other reasons become necessary, particularly when considering new mobile innovations. Consequently, an important consideration becomes how compatible the new mobile innovation will be with existing devices or accessories and apps used by the consumer:

[. . .] I noticed at the gym one of my colleagues checking her calories and other vitals via her smartwatch. I always thought such watches were for only specific phone brands. When I realised that my phone brand is also compatible, I ordered one for my workouts (MAU26).

When I was using my old android phone to edit my pictures, I realized I wasn't getting the best results because most of the apps that could give me good results were only on iOS. That's why I had to switch to iOS (iPhone) and working is easier now because I have other apple devices that makes everything seamless (MAU29).

Besides, for some other consumers, the choice of mobile device or innovation is based on the fit or compatibility with some existing social life or recognition among family, friends or reference groups. In ascertaining whether (their) existing lifestyles somewhat impacted the kind of mobile device they purchase and the kind of apps downloaded, for instance, some participants remarked:

[. . .] yes, funny enough when twitter introduced an indication of the brand of phone you are tweeting from, it made me eager to also get an iPhone so that my tweets will also appear as 'twitter for iPhone' to my followers. I basically bought an iPhone for that twitter feature, but I later fell in love with the actual uniqueness of the iPhone (MAU3).

[. . .] most of my friends I play online games with use a particular brand of headset. When we meet and share experiences of our gaming endeavours, we also talk about the accessories we use. I was compelled to buy the brand most of them use (MAU12).

Post-purchase discoveries

Another key theme that emerged from the focus group interviews relate to the post-purchase discoveries made by consumers of mobile devices and apps. This theme is connected to the second research question underlying this study; whether consumers adopt (new) lifestyles based on the available apps and technological innovations that come with the mobile devices they purchase and consume. While the participants recognised that pre-purchase considerations usually underscore their mobile devices and app innovations usages, most of them also acknowledged some discoveries made during post-purchase or consumption stages:

I have never been the type that works out. I was playing a game on my phone one time and I saw a pop-up ad that triggered me to download a home-workout app. I started practising using the preloaded routines in the app. I have been doing this at home ever since, and it has helped me immensely, especially during the lockdown periods (MAU9).

I bought a [Samsung] smartwatch because I wanted to track my jogging and running. I later found out that I could check the weather on my watch before I leave home, and also a heart monitor which I use to check my blood pressure (BP) when I get angry. This helps me regulate my BP levels and manage my medications (MAU13).

I have been using a MacBook for a long time, but I had not really been a fan of iPhones until I got one recently because I heard of their camera quality. After some few weeks with the phone, I

realised Apple has these features (Continuity and Handoff) which are capable of making the two devices work seamlessly. I can now start a task on one of them, and continue from the other (MAU18).

[...] When I learned [from a friend] that a smartwatch could give me notifications without me needing to pick the phone, I got one. The watch and the phone are not even the same brand, but I am able to sift which calls to pick, which messages to read and/or reply, as well as which ones to ignore and respond to later when I am less busy (MAU17).

Utilisations and lifestylisation

The eventual result of most of these post-purchase discoveries was the triggering of new or modified lifestyles among users of mobile device and app innovations. This theme evaluates the principal aim of the study, which is to examine the influence of mobile apps and mobile device technologies on user lifestylisation. While the first theme establishes that consumers often ponder over some pre-purchase considerations prior to purchases and consumption, the second theme also reveals some post-purchase discoveries. Certainly, some consumers buy and use mobile devices and app innovations that fit their existing lifestyles. Thus, their consumption of these devices and app innovations was influenced by their current lifestyles. Others also adopt or adapt to new lifestyles based on the novelty in technological innovations and available apps which come with the mobile devices they purchase and consume. In line with specific lifestylisations, [Table 2](#) summarises some of the sub-themes and practical areas, along with extracts from the focus group interviews tagged with these sub-themes.

Discussions

This study sought to examine the influence of mobile apps and mobile device innovations on user lifestylisation among consumers in developing countries. While engaging the current state of literature, it is observed that our existing knowledge on mobile devices and mobile apps remains insufficient as to:

- whether consumers buy and utilise mobile devices and mobile app innovations that fit their existing lifestyles; or
- whether they adopt/commence new lifestyles based on the innovations in the mobile devices and mobile apps they purchase and use.

Given the limited data on studies relating to this debate, this research explored the phenomenon using consumers in developing countries.

Identified consumer categories

Results from the study indicate that as far as user lifestylisations are concerned, there are, indeed, consumers whose purchases and consumptions of mobile devices and apps are determined by their existing lifestyle (Category A), as well as those who pursue certain lifestyles based on discoveries made via mobile devices and apps after purchase and use (Category B). Subsequently, based on the focus group interviews and discussions, a number of observations are made on the pattern of responses from consumers in each category. We attempt to explain the idiosyncrasies of these patterns within the lenses of the effects of mobile device and mobile app innovations on user lifestylisations.

First, for consumers in Category A, it appears that they usually buy newer and improved models (upgrades) of their devices or accessories relating to brands they use, and these are

Theme	Demonstrations	Extracts
Education and productivity	<p>Ability to access learning materials with the click of a button without being physically present</p> <p>Allows users to track the time spent on the apps aiding them to be accountable</p> <p>Have reading apps and audio books</p>	<p>“[my] education has been altered positively because I get to do a lot of research online and don’t have to go to the library” (MAU2)</p> <p>“The availability of apps like audio books are really helpful for people [like me] who do not like reading. . . . audio books have enhanced my knowledge, and I spend less time on social media and more on things related to education and productivity” (MAU23)</p> <p>“[the phone] also gives a breakdown of what usually takes up my screen time. I always want to make sure that the hours I spend on social media wouldn’t be more than what I spend on educational apps” (MAU5)</p> <p>“I make use of WhatsApp business, and other apps that help me track my business. It has improved my social network and is also good for my business’ online presence” (MAU8)</p> <p>My smart phone has increased my productivity as well as keeps me entertained. I’m able to write down important things so I don’t forget” (MAU1)</p>
Socialisation and entertainment	<p>Allows for ubiquity, as people can connect with numerous people (including dating) at the same time, and in real time</p> <p>Limits human contact, creates social status and sense of belonging</p> <p>Through games and streaming apps, users keep themselves entertained</p>	<p>“. . . apps keep me company, so I feel I don’t need to be in the midst of people and have physical interactions. . . . I have even tried some relationships via dating apps before” (MAU22)</p> <p>“. . . now when I don’t have anything to do, I can [watch] Netflix or play games on my mobile devices” (MAU19)</p> <p>“my friends (girls) and I have all installed apps for tracking our periods and there are features that help us to know whose time it is during the month. That way, we can plan when to go for outings and visits” (MAU25)</p> <p>“. . . I now take more pictures than I used to. I am gradually beginning to consider going into photography, so I have downloaded a number of photo editing and enhancing apps for a start” (MAU24)</p> <p>“I recently moved to a new place which is smaller than our family house. For space management and convenience, I got an Amazon Kindle to build my e-library. This makes on-the-go reading easier”. (MAU32)</p>
Health and wellness	<p>Apps enable users to track their health-related endeavours as well as keep fit</p>	<p>“I realized there was a health [Fitness] app on my phone. It has various categories such as walking, burning calories, etc. Now, I set certain targets for myself based on the various categories. I monitor these targets every day” (MAU14)</p> <p>“. . . I have been exercising at home instead of going to the gym. I later added other fitness apps and they helped me immensely, especially during the lockdown period of Covid 19” (MAU9)</p> <p>“. . . The apps have helped me keep track of my workouts as I’m trying to lose weight” (MAU16)</p> <p>“. . . a heart monitor app which I use to check my blood pressure (BP) when I get angry. This helps me regulate my BP levels and manage my medications” (MAU13)</p>

(continued)

Table 2.
Consumer
lifestylisations from
mobile devices and
apps

Theme	Demonstrations	Extracts
Finance and banking	Allows for transactions with ease, increasing productivity	<p>“[now], most of the banks have apps that enable me to transact and also use online payment services via mobile. So, I don’t remember the last time I wasted time by going to the bank” (MAU8)</p> <p>“... mobile banking apps have also made it possible to track and retrieve all my spends and also know which category consumes my money [the most] each month” (MAU31)</p> <p>“a lot of the public utility companies in my country have apps which allows you to pay bills directly without having to go to their premises”. (MAU23)</p>
Travel and shopping	<p>Use of ride-sharing and booking apps to make travel easier</p> <p>Ability to engage in online shopping to save time</p>	<p>“I have stopped using taxis. I prefer transportation apps like Uber and Bolt since my partner and family can track my movements. It makes me feel safer” (MAU3)</p> <p>“I used to spend hours window shopping at the malls. Now, I can’t remember the last time I did [physical] shopping, especially since I downloaded some shopping apps some months ago when the Covid-19 restrictions started. . . . it is very convenient and time-saving” (MAU27)</p> <p>“Some apps on my phone curate deals which are so irresistible and the least holiday or chance I get, I take advantage of these deals. Traveling is now fun, since I do not have to be the one searching for such deals” (MAU25)</p>

Table 2.

mostly underlined by compatibility reasons. For this reason, the choices of apps are normally based on familiarity reasons. One may, therefore, consider such users as loyal to their mobile device brands. Moreover, for these consumers, the extent of effect on their lifestylisation from mobile devices and apps are often marginal or incrementally moderate. Conversely, consumers in Category B are notably users who have switched/changed device brands or complemented their existing devices with different brands. Accordingly, the magnitude of effect on their lifestylisation from mobile devices and apps become substantial and palpable.

Lifestylisation patterns in consumer categories

Another pattern observed from the focus group data relates to which lifestylisations dominate between the two categories of consumers. In relation to mobile devices and apps, it is observed that socialisation and entertainment purposes typically underscore the purchases and usage among Category A consumers. On the other hand, Category B consumers tend to point out lifestylisations relating to productivity and education, finance and banking, as well as travel and shopping. Thus, while Category A consumers may be triggered by leisure and entertainment mobile devices and apps, their counterparts in Category B are inclined toward task-oriented mobile devices and apps.

In effect, Category A consumers may be considered as deriving hedonic motivations as compared to utilitarian pursuits for Category B consumers. Notwithstanding these dominating lifestylisation patterns in each category, we find that health and wellness purposes overlap for Category A and Category B consumers.

Theoretical implications

The preceding discussion proffers some implications for theory and practice. Firstly, this study implies that consumer lifestylisations, based on consumption and utilisation of mobile devices and mobile apps, hinge on either pre-purchase considerations or post-purchase discoveries. In a related manner, the results reveal that the reasons underlying these could stem from hedonic and/or utilitarian motivations. Theoretically, this investigation on mobile devices and app innovations from emerging cosmopolitans in developing countries extends itself with traits across the Model of Personal Computer Utilisation theory (Thompson *et al.*, 1991), the Diffusion of Innovation theory (Rogers, 2004), as well as the unified theory of acceptance and use of technology theory (Venkatesh *et al.*, 2016). The elements underlying these theories – habits, trialability, ease/complexity of usage, performance expectancy, effort expectancy, facilitating conditions, social influence/norms and continuance intention, among others – are all exhibited in the findings from this research.

Secondly, although there appears to be a positive trend in growing research on mobile devices and apps consumption, the issues are mostly centred on health and wellness nexuses, with very scant research on the other lifestylisations explored in this study. However, evidence from the current study context provides theoretically enlightening contributions that could open up scholarly debates on the subject. Inferably, budding and successive research works on human versus mobile devices and apps should, therefore, distinguish between the apparent idiosyncratic categories of consumers when theorising future investigations in the area.

Additionally, given the remarkable growth of the smartphone market, mobile device innovations and applications have become popular in developing countries, as is in most developed countries. The relatively limited research in the available stock of literature from developing countries, therefore, means that the current study brings a significant contribution into the prevailing chorus (Rauschnabel *et al.*, 2019; Gokgoz *et al.*, 2021; Liu and Sese, 2021; Shaw *et al.*, 2022) to coagulate existing knowledge, which is only replete with evidence from developed economies and markets. As noted earlier in this research, much of what we currently know on the subject of mobile device and app innovations in relation to lifestylisations is considerably insufficient. Consequently, for broader knowledge assimilation and dissemination, inquiries from developing countries become vital in settling scholarly imbalances.

Finally, as this research explores manifestations of lifestylisations among emerging cosmopolitans in developing countries, it implies that opportunities exist in theory to pursue further investigations on the peculiarities of human versus mobile devices/app innovations across other segments of consumers in other economies.

Practical implications

Practically, mobile device manufacturers and mobile app developers domiciled in developing countries, or those aiming to establish their presence therein, could take cues from the insights explored in this research. This is crucial given that such markets and economies are characterized by variability in consumers and infrastructure, market heterogeneity and unbridled competition that are radically different from that of traditionally industrialised/developed economies. Nevertheless, developing countries are known to provide natural platforms for testing and developing theories, as well as offering a thriving potential for many companies and driving the future of competitive marketing practices.

Realistically, the perspectives in this research, obtained via participants from multiple developing countries, provide valuable intuitions that can be relied on by mobile device

manufacturers and mobile app developers in generating future tactics for wider consumer patronage. This could be particularly relevant for the clusters of emerging cosmopolitans in developing countries and can be astutely done by embedding creative buzzes during pre-launch activities and events. In essence, practitioners within industries and business sectors (e.g. entertainment, health, fintech, banking, education, hospitality, etc.) that relate with the explored lifestyleisations could draw from the study's insights to strategically impress upon consumers towards favourable lifestyles.

For example, health and fitness supervisors can obtain applicable value from the study's narratives to trigger consumer compliance in health and fitness domains. Also, fintech firms and financial institutions could benefit from this study by garnering some lessons from the insights relating to finance and banking via mobile devices and apps. Further, developers of educational apps and gadgets could collaborate with their counterparts who create socialisation- and entertainment-related apps and gadgets to integrate both utilitarian and hedonic features in their respective domains. Similar techniques could be fashioned for players in the travel and shopping industries to stimulate maximum utilisation experiences for consumers. Ultimately, all these instances could help optimise various lifestyleisation patterns among users with an iota of productivity.

Limitations of the study

Notwithstanding the contributions of this research, it is imperative to highlight its limitations and how these can be addressed in future studies. First of all, the study was qualitative in nature, where the focus was to explore and obtain a depth in understanding rather than generalisation. Hence, future studies could employ quantitative and other qualitative approaches in supporting and validating the findings. Even though the research attempted to cover participants from multiple contexts, it cannot be considered substantially representative of all developing countries. The sample used in this study was only sufficient for the purposes of this study and allowed reasonable conclusions to be drawn in an exploratory manner. As a result, the phenomenon explored could be replicated in other developing countries using larger samples or more participants to determine novel outcomes and better grasp deeper insights. Opportunities further exist for future research to quantitatively examine country-specific nuances pertaining to mobile devices and mobile app innovations on consumer lifestyleisations.

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