

A model for switching and continued use of mobile computing applications amongst South African academics

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Background: A systematic review of the literature uncovered little explanation as to why academics as individuals switch mobile applications or continue to use the same mobile applications. Knowing and being able to explain the personal behaviour are important and could be of value to practitioners and researchers, especially when it comes to predicting the future behaviour.

Objectives: The main objective of this study was to explain and to model switching and continued use of mobile computing applications by South African academics.

Method: A survey was carried out within South African academics as participants to test 14 hypotheses and explain switching and continued use of mobile computing applications. The adopted positivist study was associated with the quantitative research approach to test hypotheses so that the truth about objectives are obtainable.

Results: The results of the study contributed to the body of knowledge by explaining and modelling the determinants influencing and significant to mobile computing application switching and continued use behaviour.

Conclusion: The developed model may help to inform practitioners and researchers on what actually satisfies users to switch or continue to use mobile computing applications.

Keywords: academics; continued use; mobile computing applications; social exchange; switching; TTF.

Introduction

Technology is rapidly developing, with current trends suggesting a dramatic rise in the use of mobile computing applications that connect through the Internet (Bergman 2015). Yet, despite their significance and effects, the behaviour of academics towards the use of mobile computing applications and services is not well defined from a theoretical and practical viewpoint. This deters a thorough understanding and explanations for switching and continued use of mobile computing applications or services, especially amongst South African academics.

There are a number of mobile computing applications and services, which include mobile operating systems (Android, iOS, Blackberry, etc.), social media applications (such as WhatsApp, Facebook, Instagram, WeChat, Twitter, Tiktok, LinkedIn, etc.), collaboration applications (such as MS Teams, Zoom, Google meet, Jitsi meet, etc.) and mobile storage application (such as Dropbox, OneDrive, Google drive, Dubox, etc.), which academics may switch around or continue using. The potential life cycle of these mobile applications may be determined by its continued usage. Those who design and sell mobile applications have to keep end-user's satisfactions higher otherwise, end-users may switch to other mobile computing services or switch back to alternative user-friendly services.

This study took a view that switching behaviour is a significant construct for post acceptance of old and newly developed mobile computing applications and services. The determinants affecting consumer continuance intension is an influential factor of actual usage, thus suggesting that the two phenomena could be studied collectively. Although individuals, especially academics, switch and continue to use mobile computing applications or services, there is a literature gap to explain why they switch or continue to use the same mobile application.

The review of literature has revealed inadequate or lack of explanation towards the switching and continued use behaviour of South African academics. Knowing and being able to explain the behaviour is deemed to be important and could be of value to practitioners and researchers, especially when it comes to predicting the future behaviour. Furthermore, investigations and developing satisfactory mobile computing services may encourage its continued usage. This study aimed to construct the knowledge gap by modelling the determinants that explain the switching and continued use behaviour of academics with respect to mobile computing applications and services.

Background of the research problem

It has become increasingly important to understand the academics' use of mobile computing applications and services. Many positive effects have resulted from the use of technology, such as social inclusion, improved access to information, day-to-day assistance and innovations for health care (Piwek et al. 2016). However, adverse side effects such as technological addiction, alleged data violations, decreased physical exercise, cyberbullying and poor work-life balance remain common (Ho & Tan 2020). Academics may be avoiding switching into mobile computing because of such negative side effects of unsatisfactory work-life balance from technological addictions.

Theoretical knowledge gaps

This study was motivated by the lack of explanations for switching and continued use behaviour of individuals regarding mobile computing applications and services. The review of literature has revealed inadequate models that may inform the switching and continued use behaviour with respect to mobile computing applications amongst professional individuals such as academics.

The theoretical knowledge gap is in the inadequacy or the lack of frameworks or models that explain the switching and continued use behaviour of academics in using mobile computing applications and services.

Practical knowledge gaps

Mobile computing applications' continued use and switching behaviour are not well explained for practitioners and developers of mobile computing applications. Application developers need to understand switching and continued usage behaviour of individuals to predict future switching or continued use.

The expected life cycle of existing mobile computing applications can be predicted through continued usage or switching. For instance, companies that are developing and selling mobile computing applications must retain high-customer loyalty through positive continued usage.

Literature and study hypothesis

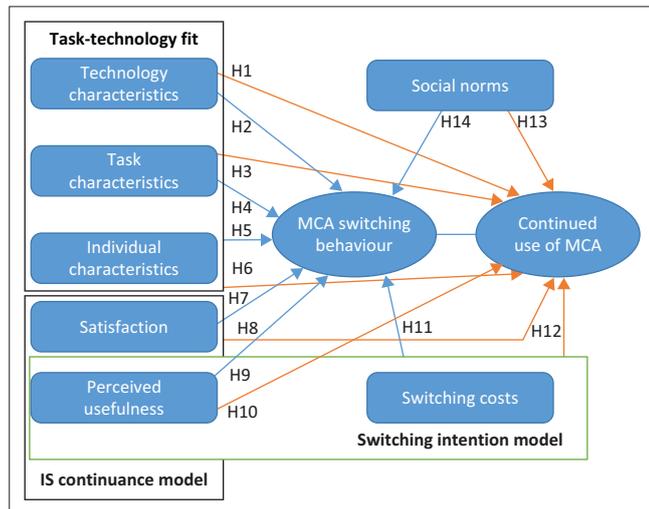
Van der Merwe (2015) developed and tested a theoretical switching intention model with data collected on switching intentions. Switching intention behaviour was investigated that included the relationship of alternative attractiveness, perceived worth and the switching costs. The actual switching behaviour data were then comparable with the theoretical switching intentions, and the results were discussed. Both contexts of switching are examined to determine the role of interpersonal traits. Van der Merwe used online questionnaires for obtaining primary data that were collected from a cross-sectional forum. The participants included people who had or have mobile device contracts with mobile network operator companies. By using Analyses of Moment Structure (AMOS), feature estimates were obtained using maximum likelihood, and confidence intervals were calculated by bootstrapping.

Nimako and Nyame (2015) reviewed a theoretical model in consumer switching behaviour (CSB), and their study reveals that at least 10 theoretical models of CSB already exist. The gap on the existing CSB model is that they do not address issues related to computing research area. Both models focused on the business and marketing research fields, understanding the determinants and mechanism of customer switching behaviour. Although numerous studies have been conducted to enhance understanding of the CSB concept, empirical work in the field of customer switching behaviour is void.

Osah and Kyobe (2015) investigated the factors that influence user retention in M-pesa, a mobile money transfer application. The goal of this study was to (1) develop a research model grounded in theory, (2) identify and discuss factors from the literature that are most likely to influence user continuance intention towards M-pesa and (3) validate the model within the different sampling context to identify the antecedents and determinants of user's continuance intention towards M-pesa, in Kenya. A literature review, expert pre-testing, pilot testing and statistical validation were used to develop the survey instrument employed to measure the study's constructs. The findings show that factors such as object, control, attitudinal and behavioural beliefs all influence user persistence intention. The unexpected finding of the rankings of predictive strength of the factors ushers in a new chapter and opens up new avenues of investigation in future studies (Osah & Kyobe 2015).

Shiau and Luo (2013), conducted the study to better understand the factors that influence the intention to continue using a popular hedonic information system, blogs. The expectation–confirmation theory (ECT) has been modified to account for perceived enjoyment, habit and user involvement. An online survey was used to collect data. There were 430 valid responses in total. Structural equation modelling was used to evaluate the structural equation model (SEM). The findings indicate that user involvement, satisfaction and perceived enjoyment all predicted long-term blog use intention. However, there was no significant relationship between habit and satisfaction or use intention.

Based on the given literature, the following study model was conceptualised from by triangulating the three theoretical model that was used as lenses for this study. The three theoretical model underpinned by this study included Information Systems (IS) continuance model, switching intention model and task technology fit (TTF) model. The study hypotheses are shown in Figure 1 and Table 1.



MCA, mobile computing applications.

FIGURE 1: Conceptualised study model.

The following are the study hypotheses.

The hypotheses and constructs are measured and tested through the measuring items.

Methodology

To explain switching and continued use of mobile computing applications by academics, positivism was identified as the most appropriate paradigm for the study. Blaikie (2007) pointed out that positivist studies are associated with the quantitative research approach that test hypotheses so that the truth about objectives is obtainable.

Questionnaire development and distributions

Questionnaires were used to collect quantitative data from academics. Babbie (2005) posited that a questionnaire is a method explicitly developed to produce knowledge valuable for research. Questionnaires can include close-ended or open-ended questions, and both provide structure to the process of data gathering. The close-ended questions are more specific and less prone to interpretation and verbosity than the open-ended questions (Bryman & Bell 2011). This study used a close-ended questionnaire with the Likert scale method of one to five points. The questionnaire was designed using the SurveyMonkey, and the link was distributed via

TABLE 1: Hypotheses, constructs and measuring items.

Constructs	Measuring items
Technological characteristics	The study refers to technical and administration support for academic end users to utilise mobile computing applications. Chen, Meservy and Gillenson (2010) indicated that lack of administrative support and sufficient mobile computing technology is the most important factor affecting user's mobile application adoption intentions. If academics from different branch want to work online on the same project or a health professional consulted a specialist using video conferencing to operate a patient, they would need quite a lot of technical support. If the technological aspects of their organisation are not reliable, the academics' will opt to use the alternatively reliable solutions (Nel & Boshoff 2013). H1: Technological characteristics may have positive effects towards MCA switching behaviour. H2: Technological characteristics may have positive effects towards continued use of MCA.
Task characteristics	The study refers to the ability of academics to independently complete the task on the mobile computing application. The task characteristics show that the use of technology by a person depends on the technology being tailored to the requirements of a given task and the ability for the technology to assist the consumer in carrying out the task. A malalignment of the features of the mobile application and the capability of the user to carry out a task will reduce the task fit. The misalignment negatively affects the performance of the person to perform the assigned task and will cause negative technological perceptions (Goodhue 1995). H3: Task characteristics may have positive effects towards MCA switching behaviour. H4: Task characteristics may have positive effects towards continued use of MCA.
Individual characteristics	The study refers to the ability of academic's end user skills to utilise the mobile computing application. In the study of IT use and adoption, the role of the individual has played a major role. Nan (2011) defined four important attributes for IT use in a critical literature review: IT use, IT use behaviour, IT use processes and time. The consumer, IT devices and work activities are key components of this IT use aspect. H5: Individual characteristics may have positive effects towards MCA switching behaviour. H6: Individual characteristics may have positive effects towards continued use of MCA. The utilisation of a specific system for a single, defined task depends
Satisfaction	The study refers to the fulfilment of academics' expectations or need for using new mobile computing applications or the pleasure derived from using existing mobile computing applications (Osah & Kyobe 2015). H7: Satisfaction may have positive effects towards MCA switching behaviour. H8: Satisfaction may have positive effects towards continued use of MCA.
Perceived usefulness	Perceived usefulness – can be taken as the benefits consumer is looking at when using the mobile computing applications, and this includes rewarding, trust, application quality and service quality, according to academics' perceptions (Lim et al. 2019). H9: Perceived usefulness may have positive effects towards MCA switching behaviour. H10: Perceived usefulness may have positive effects towards continued use of MCA.
Switching cost	According to the research, there are financial and noneconomic hurdles that prevent educators from transitioning to smartphone apps. Switching costs is the costs incurred by a customer when changing applications or service providers (Van der Merwe 2015). Although the usual cost of switching is monetary value, there are also psychological costs of switching based on effort and time (Ray, Kim & Morris 2012). H11: Switching costs may have positive effects towards continued use of MCA. H12: Switching costs may have positive effects towards MCA switching behaviour.
Social norm	Students' views on whether their substantial others would like them to switch systems or stick with the one they are currently using. They are described using the social-norms-construct, which is characterised by the degree to which these people in their lives think it is appropriate for them to perform a given behaviour in question (Ajzen & Fishbein 1975). H13: Social norm may have positive effects towards MCA switching behaviour. H14: Social norm may have positive effects towards continued use of MCA.

email addresses, WhatsApp and Instagram. The study also posted a link on LinkedIn application because that is where most professionals, including academics, can be found.

Study participants

This study used a non-probability sample in the form of chain-referral sampling, as the study wanted to use a specific group of participants, academics; however, it was not possible to specify the population. The only known information was that the participants should be working in an academic environment at any South African University. The research is based on their personal choice not as university sanctioned applications. The study sent questionnaires to known academics from different South African Universities and requested those participants to extend the invitation to other academics they know.

Table 2 displays the demographic data from the 220 eventual academic participants. The first section of the survey instrument requested the participants to accept or decline participation in the survey. A total of 216 academics accepted and participated in the survey whilst a total of four participants did not click accept but nevertheless participated. The four participants who participated without clicking the accept button may have not seen the check box because it is on the first page that contained user consent information.

With regard to gender, there were 114 males who participated, which is representing (51.8%) and 106 were females, (48.2%). The age group with most participants was 36–45 years represented by 79 (35.9%) participants, followed by age 25–35 years (22.7%), participants of age below 25 years were 39 (17.7%) and the fourth place was age category 46–55 years, with 33 (15%) participants being the older academic who are above 55 years were 19 (8.6%).

Demographic information

Table 2 shows participants' demographics results and Table 3 displays their educational qualification and academic specialisation.

Table 2 displays the demographic data from the 220 eventual academic participants. The first section of the survey

TABLE 2: Demographic information (gender and age).

Demographic results	Frequency	Percentage
Gender		
Male	114	51.8
Female	106	48.2
Total	220	100
Age (years)		
Below 25	39	17.7
25–35	50	22.7
36–45	79	35.9
46–55	33	15.0
Above 55	19	8.6
Total	220	100

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With regard to gender, there were 114 males (51.8%) and 106 females (48.2%), who participated. Most participants were of the age group 36–45 years represented by 79 (35.9%) participants, followed by age 25–35 years (22.7%), participants of age below 25 years were 39 (17.7%) and the fourth place was age category 46–55 years, with 33 (15%) participants then the older academic who are above 55 years were 19 (8.6%).

The majority of participants (76) had master's degree as their highest qualification and this represented 34.5% of the sampled academics, this was followed by Diploma (45), which represented (22.5%), this sample may be academics who are working as tutors at universities because the study involved tutors and mentors (Table 3). Thirty-two participants hold Bachelor's degree (14.5%), those with Doctoral degrees were 28 (12.7%) participants, whilst 21 (9.5%) participants selected 'others' on educational qualification, which the study assumes could be student mentors and student assistants who are still completing certain academic qualifications. The participant with honours degrees were 18, which constitutes 8.2% of the sample.

The frequency of academic specialisation indicates that majority of the participants (63) were from the Information and communication technology (28.6%), followed by 47 participants from Humanities (21.4%), 27 participants from

TABLE 3: Participants' demographic (educational qualification and academic specialisation).

Demographic results	Frequency	Percentage
Educational qualification		
Diploma	45	20.5
Bachelor's degree	32	14.5
Honours degree	18	8.2
Master's degree	76	34.5
Doctoral degree	28	12.7
Others	21	9.5
Total	220	100
Academic specialisation		
Humanities	47	21.4
Social sciences	12	5.5
Education	27	12.3
Fine and performing arts	2	0.9
Engineering	14	6.4
Law	5	2.3
Information and communication technology	63	28.6
Commerce and management	18	8.2
Agriculture and natural resources	9	4.1
Health and medical sciences	6	2.7
Management science	16	7.3
Others	1	0.5
Total	220	100

Education (12.3%) whilst 18 specialised in Commerce and management (18.2%). There are also 16 participants who specialised in Management sciences (7.3%), 14 Engineering (6.4%) and 12 Social sciences (5.5%). Nine participants were from Agriculture and natural resources (4.1%), six from Health and medical sciences (2.7%), five from Law (2.3%), the least was two from Fine and performing arts (0.9%). One participant selected 'others', which constitutes only 0.5% of the sample.

Study results and analysis

This section describes and explains the analyses of the data (0.439), H12 ($p = 0.405$) and H14 ($p = 0.464$). Some hypotheses obtained through the research instrument. The statistical were dropped because their p -value is > 0.05 , indicating that it analysis of the data were performed using SPSS 26.0 (Pallant 2020) and was not significant enough to be supported as shown in Table 4.

The final model for switching and continued use

The research model showed 14 hypotheses to explain academic's behaviour towards switching and continued use of mobile computing applications. Table 4 displays the hypotheses formulated based on TTF, IS continuance and switching intention model together with an outcome for each hypothesis, on whether they were supported.

According to Ogee et al. (2015) and Mcleod (2019), if the p -value is ≤ 0.05 , it is significant because it indicates strong evidence concerning hypothesis, it indicates that there is 95% confidence level concerning the results. If a p -value is

> 0.05 , there is no significant relationship between the constructs, which means the hypothesis is rejected.

As displayed in Table 4, there were hypotheses that were not supported and were dropped in order to develop the final research model. However, the five hypotheses supported are H1 (p -value of 0.013), H3 (p -value of 0.000), H9 (p -value of 0.000), H10 (p -value of 0.000) and H13 (p -value of 0.000) because their p -value is less than or equal to 0.05, indicating that the value was significant enough to be supported. The following hypotheses were not supported: H2 (p -value of 0.243), H4 (p -value of 0.526), H5 (p -value of 0.922), H6 (p -value of 0.013), H7 (p -value of 0.622), H8 (p -value of 0.638), H11 (p -value of 0.439), H12 ($p = 0.405$) and H14 ($p = 0.464$). Some hypotheses were dropped because their p -value is > 0.05 , indicating that it was not significant enough to be supported as shown in Table 4.

The final contracts of SWITCON behaviour model shows only the five factors that are significant in influencing the switching and continued use of mobile computing applications amongst South African academics:

H1: Technological characteristics may have positive effects towards MCA switching behaviour.

H3: Task characteristics may have positive effects towards MCA switching behaviour.

H9: Perceived usefulness may have positive effects towards MCA switching behaviour.

H10: Perceived usefulness may have positive effects towards continued use of MCA.

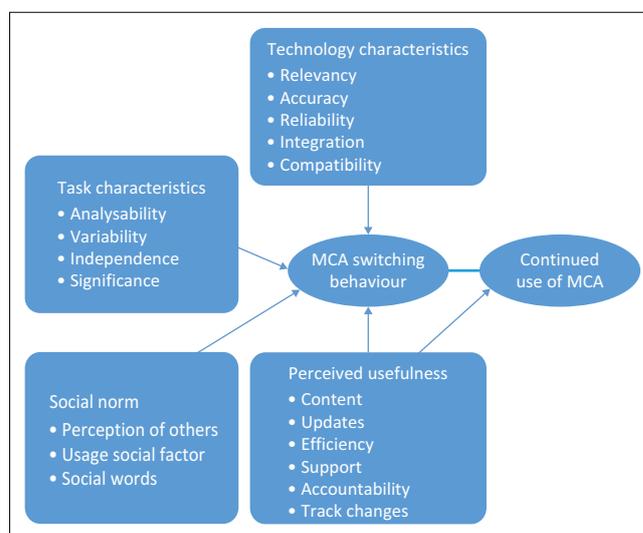
H13: Social norm may have positive effects towards MCA switching behaviour.

TABLE 4: The decision made for each hypothesis.

Measuring items	p	Decision
H1: Technological characteristics may have positive effects towards MCA switching behaviour.	0.013	Supported
H2: Technological characteristics may have positive effects towards continued use of MCA.	0.053	Not supported
H3: Task characteristics may have positive effects towards MCA switching behaviour.	0.000	Supported
H4: Task characteristics may have positive effects towards continued use of MCA.	0.243	Not supported
H5: Individual characteristics may have positive effects towards MCA switching behaviour.	0.526	Not supported
H6: Individual characteristics may have positive effects towards continued use of MCA. The utilisation of a specific system for a single, defined task depends.	0.922	Not supported
H7: Satisfaction may have positive effects towards MCA switching behaviour.	0.622	Not supported
H8: Satisfaction may have positive effects towards continued use of MCA.	0.638	Not supported
H9: Perceived usefulness may have positive effects towards MCA switching behaviour.	0.000	Supported
H10: Perceived usefulness may have positive effects towards continued use of MCA.	0.000	Supported
H11: Switching costs may have positive effects towards continued use of MCA.	0.439	Not supported
H12: Switching costs may have positive effects towards MCA switching behaviour.	0.405	Not supported
H13: Social norm may have positive effects towards MCA switching behaviour.	0.000	Supported
H14: Social norm may have positive effects towards continued use of MCA.	0.464	Not supported

Discussion and recommendations

This study confirmed that the technological characteristics of the mobile computing application have a positive effect on the switching behaviour of South African academics. The



MCA, mobile computing applications.

FIGURE 2: Recommended model for switching and continued use of mobile computing applications.

hypothesis was supported. As predicted through the research model, technological characteristics had a positive influence on the MCA switching behaviour. According to Chen et al. (2012), users' switching behaviour is influenced by the technology characteristics of the application.

The result of this study concurs with Nel and Boshoff (2013), who found that specialists using video conferencing to operate a patient need quite a lot of technological support to achieve their goal if they are not technologically oriented, similarly with academics. The result of this study reveals that technological characteristics have a significantly positive effect on MCA switching behaviour amongst South African academics.

The results of this study, however, did not confirm if the technological characteristics have positive effects on the continued use of MCA amongst the South African academics. This hypothesis was not supported. According to the research model, technological characteristics may have positive effects towards continued use of MCA in the South African academics. However, technological characteristics towards continued use of MCA in South Africa do not have a positive influence on academics. This result is, however, inconsistent with TTF theory.

The results confirmed that the task characteristics have a positive effect on the MCA switching behaviour. This hypothesis was supported significantly. The results confirm the prediction of the research model, which is consistent with the proposition of TTF model. The results of hypothesis H3 are consistent with Goodhue (1995) who showed that task characteristics are important in determining the appropriateness of technology. Likewise, academic tasks and characteristics do influence the switching behaviour of South African academics.

The result did not confirm that the task characteristics have a positive effect on the continued use of MCA. This hypothesis was not supported, which did not confirm the prediction of the research model.

The results of hypothesis H4 are not consistent with Goodhue (1995) who claimed that task characteristics are important towards determining the appropriateness of technology. Likewise, academic tasks and characteristics do not influence the decision to continue using a computing application, amongst South African academics.

The study did not confirm that an individual's characteristics have a positive effect on the MCA switching behaviour. This hypothesis was not supported. This result is not consistent with the TTF theory. According to Nan (2011), users' adoption and use of a technology is also not determined by an individual's characteristics. The individual's skills and efficacy (individual characteristics) to utilise mobile computing applications is not significant, and thus does not affect the academic's switching behaviour.

The results of this study did not confirm that the individual characteristics have positive effect on the continued use of MCA amongst South African academics. This hypothesis was not supported. This result is not consistent with the TTF model, which posited that an individual's characteristics are important to determine the appropriate use of a technology.

The study did not confirm that satisfaction characteristics have a positive effect on the MCA switching behaviour amongst South African academics. This hypothesis was not supported. As predicted in the research model, satisfaction characteristics do not have a positive influence on the MCA switching behaviour. According to (Osah & Kyobe 2015), the use of technology by users is determined by satisfaction characteristics. Thus, an academic's expectations, needs for using new mobile computing applications or the pleasure derived from using existing mobile computing applications significantly affect the mobile application switching behaviour.

As predicted in the research model, satisfaction characteristics do not have a positive influence in the continued use behaviour amongst South African academics. This result is not consistent with the Information System Continuance model. Users' continued use of technology is determined by satisfaction characteristics (Osah & Kyobe 2015). This means that academics are likely to not continue to use mobile computing applications if they are satisfied with its offering.

The study confirmed that the perceived usefulness characteristics have a positive effect on the MCA switching behaviour amongst South African academics. This hypothesis was supported. That is, as predicted in the research model, perceived usefulness characteristics have a positive influence MCA switching behaviour. This result is consistent with what the switching intention model posits. According to Lim et al. (2019), users' switching behaviour is determined by perceived usefulness characteristics. It is, thus, inferred that trust, application quality and service quality is what drives the academics' usefulness perception for switching to new mobile computing applications.

The results of this study did confirm that perceived usefulness characteristics have a positive effect on the continued use of MCA amongst South African academics. This hypothesis was supported.

In line with Lim et al. (2019), users' continued use of a technology is determined by the perceived usefulness characteristics. The usefulness perception of the existing mobile computing applications is also a significant aspect that affects the continued use behaviour of academics.

The study did not confirm that the switching costs characteristics have a positive effect on the MCA switching behaviour amongst South African academics. This hypothesis was not supported. This result is not consistent with IS continued use and switching intention models. According to Ray et al. (2012), the characteristics of users' technology

switching behaviour is often determined by cost characteristics. This means that academics may not weigh the cost involved with using an application relative to the new application they may want to switch to.

The study confirmed that cost characteristics have a positive effect on the MCA continued use behaviour amongst South African academics. This hypothesis was supported. This result is again consistent with IS continued use and switching intention models. Continued use behaviour is also determined by costs associated with the use. This means that academics may weigh the cost involved with using an application relative to the new application they may want to use now.

The study confirmed that the social norm characteristics have a positive effect on the MCA switching behaviour amongst South African academics. The hypothesis was supported as predicted in the research model. According to Ajzen and Fishbein (1975), the adoption of technology by users may be determined by social norms. This means that social norms may actually influence academics to switch to a new mobile computing application

The study did not confirm that the social norm characteristics have a positive effect on the MCA continued use behaviour amongst South African academics. The hypothesis was not supported as predicted in the research model. This result is again not consistent with Ajzen and Fishbein (1975), who posited that the use of technology may be determined by social norms. This means that social norms actually do not influence academics to continue using a mobile computing application.

Study contribution

This section outlines the contributions made from this study. They are discussed as a response to the theoretical and practical knowledge gaps.

Theoretical contributions

The contribution of this study towards theory is that it merged the appropriate information systems literature in order to enhance what is known regarding the use of mobile computing applications. This means that the study brought out the factors that explain why individuals switch between mobile applications and why they may continue using mobile computing applications. By triangulating three theoretical frameworks, the study showed how the theories of TTF, IS continuance and switching intention model could best explain the behaviour of individuals towards switching and continued use of mobile computing applications. The model drawn from the study provides a theoretical knowledge that bridges the gaps identified from the review of the existing literature.

Practical contribution

The study provides a model for switching and continued use of mobile computing applications. The model may be used

by mobile application developers, retailers and service providers in predicting the future use of these applications. Amongst other things, this may help practitioners to identify why and which applications are appropriate for the tasks, what to do to prevent or encourage switching to a new application, and what factors are significant for individuals to continue using the mobile computing applications they already have.

Conclusion

The study explains the switching and continued use of mobile computing applications amongst academics as individuals. Although there has been a proliferation of the use of mobile computing applications and services, the research in what explains the switching and continued use behaviour amongst individuals is still at infancy. Switching behaviour is an important factor for post adoption of newly developed mobile computing applications, and the intention to continue using the application is an influential factor towards actual usage. This then suggested that the two phenomena should be studied concurrently to have a better behavioural explanation. Although individual academics use different mobile computing applications, there is little explanation as to why they switch mobile applications or continue to use the same mobile application. This study bridges these knowledge gaps.

The review of literature has revealed an inadequate or a lack of explanation to the switching and continued use behaviour of academics as individuals, regarding mobile computing applications. Knowing and being able to explain this behaviour was deemed to be important and could be of value to both practitioners and researchers, especially when it comes to predicting the future behaviour. The study has identified the factors that explain the switching and continued use behaviour, thus bridging the theoretical and practical knowledge gaps.

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Competing interests

This research study was not funded and no publication prohibitions, conditions or limitations were placed on the researcher.

Authors' contributions

R.M.K. contributed as a supervisor and A.P. as a co-supervisor. Both provided comments on the work and redirected me to the study. They played an important role in data collection and helped to make sure that A.T.K. followed the right procedure to complete my study.

Ethical considerations

This article followed all ethical standards for a research without direct contact with human or animal subjects.

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Data availability

The authors' data collection accession code is CJ3RHKY, and the following is the link for proof of data collected using SurveyMonkey: <https://www.surveymonkey.com/r/CJ3RHKY>.

Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

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Annexure A

Research Questionnaire

Section B

TABLE 1-A1: Research Questionnaire

Please indicate the extent to which you agree or disagree with each of the following statements by ticking the appropriate answer			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Technology characteristics			5	4	3	2	1
TC1	Relevancy	I do not find all relevant functionalities and features I need.	-	-	-	-	-
TC2	Accuracy	The information on my current mobile application is not accurate.	-	-	-	-	-
TC3	Reliability	The application is not reliable	-	-	-	-	-
TC4	Integration	The application does not integrate with my academic application	-	-	-	-	-
TC5	Compatibility	It is not compatible with the operating system of my new mobile device	-	-	-	-	-
Switching cost			5	4	3	2	1
SC1	Switching time	It cost me more time to learn how to use the application.	-	-	-	-	-
SC2	Financial switching	It is expensive to access services on the application (subscription fees, data bundle, etc.).	-	-	-	-	-
SC3	Mental effort	It cost me more effort to utilise services on the application.	-	-	-	-	-
SC5	Switching procedure	It is a long procedure to perform task.	-	-	-	-	-
SC6	Ease of use	It was not easy to do what I want to do.	-	-	-	-	-
Perceived usefulness			5	4	3	2	1
PV1	Content	It does not provide the content I need.	-	-	-	-	-
PV2	Updates	The application is not updated.	-	-	-	-	-
PV3	Efficiency	The application is not efficient.	-	-	-	-	-
PV4	Support	The service provider provides a poor technical support.	-	-	-	-	-
PV5	Accountability	Service provider is not accountable for their mobile application issues.	-	-	-	-	-
PV6	Track changes	It does not allow me to track saved changes	-	-	-	-	-
Satisfaction			5	4	3	2	1
S1	Interface	The application interface menu is complicated.	-	-	-	-	-
S2	Security	I am concern with the security and privacy issues.	-	-	-	-	-
S3	Content	The contents on the mobile application are not up to date.	-	-	-	-	-
S4	Productivity	The application does not increase my academic productivity.	-	-	-	-	-
S5	Overall satisfaction	I am not satisfied with the overall service of application.	-	-	-	-	-
S6	Quality	I am not happy with the quality of services.	-	-	-	-	-
Social norm			5	4	3	2	1
SN1	Perception of others	My family or friends do not like it.	-	-	-	-	-
SN2	Usage social factor	My colleagues recommended a different application.	-	-	-	-	-
SN3	Social words	Someone I know had bad experience with the application	-	-	-	-	-
SN4	Atmosphere	My friends and family think I should switch it	-	-	-	-	-
Task characteristics			5	4	3	2	1
TSC1	Analysability	I cannot analyse my task using the application.	-	-	-	-	-
TSC2	Variability	The application was invariable to use for my task.	-	-	-	-	-

Please indicate the extent to which you agree or disagree with each of the following statements by ticking the appropriate answer			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
TSC3	Independence	I was unable to complete tasks independently using the application	-	-	-	-	-
TSC4	Significance	The application was not appropriate for the task I need to do.	-	-	-	-	-
Individual characteristics			5	4	3	2	1
IC1	Belief	I believe it will not work for me.	-	-	-	-	-
IC2	Trust	I had trust issues with the application.	-	-	-	-	-
IC3	Optimistic	I expect things would be better if I switch to another application.	-	-	-	-	-
IC4	Adaption	I was not able to adapt to application updates and changes.	-	-	-	-	-
IC5	Convenience	The application was not convenient to use.	-	-	-	-	-
MCA Continued use			5	4	3	2	1
CU1	Habits	I have continued to use the same mobile application.	-	-	-	-	-
CU2	Recommendation	I will recommend my current mobile application to my colleagues.	-	-	-	-	-
CU3	Positive desire	I will keep using my current mobile application regularly.	-	-	-	-	-
CU4	Emotional benefits	There are lot of benefits to continue using my current mobile application.	-	-	-	-	-
CU5	Intension	I will discontinue the use of my current mobile application.	-	-	-	-	-
Switching behaviour			5	4	3	2	1
SB1	Habits	I have switched to alternative mobile application.	-	-	-	-	-
SB2	Recommendation	I will not recommend my current mobile application.	-	-	-	-	-
SB3	Desire	I am not using my old mobile application.	-	-	-	-	-
SB4	Emotional behaviour	I always switch to the new mobile application.	-	-	-	-	-
SB5	Intension	I will switch to the mobile application with lower switching costs.	-	-	-	-	-