# “Mobile banking behavioral usage intention among South African Generation Y consumers”


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# MOBILE BANKING BEHAVIORAL USAGE INTENTION AMONG SOUTH AFRICAN GENERATION Y CONSUMERS

## Abstract

Mobile technology developments have altered the traditional financial services and retail banking sectors. Mobile banking is a popular and robust service delivery model, allowing consumers access to banking from anywhere and anytime. Irrespective of the benefits, usage intentions determine mobile banking success. As such, this paper attempts to test a structural model of the factors influencing mobile banking behavioral usage intention among a growing and essential segment of banking consumers, namely Generation Y. To this end, data were collected from a convenience sample of 334 South African Generation Y mobile banking consumers using a survey questionnaire. Using analysis of moment structures, the path analysis results indicated that perceived self-efficacy, behavioral control, structural assurance and trust have a statistically significant favorable influence on the target population's mobile banking attitude, which, in turn, has a statistically significant positive effect on their mobile banking behavioral usage intention. In addition, all the model fit indices of this original and unique structural model were indicative of acceptable fit (IFI, TLI, CFI and NFI > 0.90). South African retail banks can use the study's findings to add value to their mobile banking offering, especially when targeting the Generation Y banking cohort, which is believed to drive digital channels such as mobile banking.

**Keywords** structural model, confirmatory factor analysis, path analysis, model fit, South Africa

**JEL Classification** G20, G40

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## INTRODUCTION

The manner in which modern economies function has been revolutionized by technology, and these revolutions are set to continue exponentially going into the so-called fourth industrial revolution (Coetzee, 2018). Both the financial and retail banking industries have witnessed significant changes in their service offerings in recent years, given a digital revolution (Puschmann, 2017) and the increasing diffusion of mobile technologies into these industries. In a banking context, research findings suggest that on a global scale, retail banks are compelled to adopt modern technologies in their service and product offerings (Nyoka, 2018). Against this backdrop, providing banking services has transformed from traditional methods of service delivery to more innovative and advanced internet banking technologies (Gupta et al., 2019). The advent of mobile banking and the study of mobile banking adoption, in particular, have become an important phenomenon to both mobile banking consumers and retail banks (Cao & Liu, 2018). Mainly, this is because consumers seek convenience when engaging in banking activities (Jeong & Yoon, 2013), and retail banks report constant competitive pressures, ever-escalating bank costs, the continuously changing strategic focus of retail banks, and shareholders' demands for increased profitability (Nyoka, 2018), as well as the rise in globalization (Koenaite et al., 2019) as relevant factors for introducing and understanding mobile banking.

Irrespective of the model or form of mobile banking, mobile banking is a mobile technological innovation that offers many benefits. Notwithstanding the benefits associated with mobile banking, a key determinant of mobile banking success is user adoption and usage. While mobile banking is a leading trend in other more developed countries, in South Africa, mobile banking adoption remains modest as a considerable number of banking consumers still use traditional banking methods (FinMark Trust, 2019). A report by BASA (2019) shows that in 2018, 80 percent of the adult population in South Africa were banked. This bank account penetration rate is expected to increase to 83.7 percent in 2022 (Statista, 2022a). Of the bank population in South Africa, only 12 percent used mobile banking in 2020 (Statista, 2022b). In addition, O'Dea (2020) posits that with a high mobile phone penetration rate of more than 100 percent in South Africa expected in 2022, it is concerning that only about 15 percent of South Africans use their mobile phones for banking purposes (Chigada & Hirschfelder, 2017). Although research by McKinsey & Company (2020) found that 42 percent of South Africans would be willing to increase their online and mobile banking interactions with their retail banks after the Covid-19 crises, possibly increasing mobile banking adoption in South Africa, this remains to be seen. Considering the high rate of smartphone ownership and internet coverage (Burger, 2022) in combination with the low mobile banking adoption rate in South Africa, a need is created to gain a deeper understanding of the factors that could possibly influence mobile banking adoption in South Africa, particularly among the Generation Y mobile banking cohort.

Generation Y mobile banking consumers were chosen as the target population in this study for several important reasons. Generation Y is commonly referred to as millennials (Yuen, 2022), the MTV Generation or the youth (Rahman & Azhar, 2011), and make up a cohort of "consumers born between 1986 and 2005" (Markert, 2004, p. 21). Statistics indicate that this generational cohort represents approximately one third of the population globally (Miller & Lu, 2018) and more than one third of the South African population (Statistics South Africa, 2021). Therefore, given its size, this generation signifies a rewarding and potentially high profitable consumer banking segment. Moreover, consumers from this generation influence the opinions of others (Werenowska & Rzepka, 2020), are leading in terms of setting trends (3ManFactory, 2015), and are willing to adopt innovative technology (Goi & Ng, 2011). As such, in a mobile banking context, the assumption is that these consumers likely influence the behaviors of others to use mobile banking and could possibly drive digital and mobile banking technologies.

Therefore, to keep up with the ever-increasing demands of this digitally savvy generation, retail banks are encouraged to continue adapting to mobile market trends to stay up to date (Yuen, 2022). To this end, it is important to understand them and the factors influencing their mobile banking behavioral usage intention.

## 1. LITERATURE REVIEW

The theoretical framework that underpins this study is grounded on the theory of planned behavior (TPB). The TPB was first developed in 1985 (Ajzen, 1985) and is viewed as an "extension of the theory of reasoned action" (Ajzen, 1991, p. 181). The TPB includes three behavioral intention predictors: "attitude, subjective norms and perceived behavioral control" (Ajzen, 1991, p. 181). Of these predictors, subjective norms make the weakest contribution in predicting behavioral intention (Nardi et al., 2019). Therefore, in this study, the TPB is extended with the inclusion of additional factors such as self-efficacy, structural assurance and trust, and the exclusion of subjective norms.

Self-efficacy is "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave" (Bandura, 1994, p. 1). Self-efficacy is also "an individual's determination in his or her ability to independently act a purposeful behavior" (Foroughi et al., 2019, p. 1017). Taken from a mobile banking viewpoint, self-efficacy


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relates to consumers' belief that they have the capacity and competency to perform mobile banking. Various authors posit that, if consumers perceive themselves to be skilled in performing mobile banking, then they would likely use mobile banking (Kumar et al., 2020; Singh & Srivastava, 2018) and be more motivated to engage in usage behavior (Changchit et al., 2020).

Self-efficacy is closely associated with perceived behavioral control (PBC) (Gangwal & Bansal, 2016). An individual's perceived self-efficacy in using technology may enhance his or her PBC, which could lead to a favorable attitude toward using the technology (Susanto & Goodwin, 2013). PBC is an individual's perception of the degree of difficulty at which a particular behavior is carried out and whether the behavior will achieve the desired outcomes (Ajzen, 1991). Generally, PBC is predicted by two factors, one of which is self-efficacy, and the other facilitating conditions, which refers to individuals' access to technical support and infrastructure needed to use a particular technology (Taylor & Todd, 1995). In the context of this study, if mobile banking consumers possess high levels of self-competency and have access to the necessary resources to facilitate mobile banking, then they will likely develop a favorable mobile banking usage attitude. A number of empirical studies focused on technological innovations, and online systems support the assertion that self-efficacy predicts perceived behavioral control (Ashraf, 2022; Gangwal & Bansal, 2016), which, in turn, influences attitude towards the technology (Saibaba & Murthy, 2013; Susanto & Goodwin, 2013). Accordingly, this study postulates that Generation Y consumers' perceived self-efficacy concerning mobile banking predicts their perceived behavior control, which, in turn, will influence their mobile banking attitudes.

Attitude is defined as "a feeling or opinion about something or someone" (Cambridge Dictionary, 2022) and can be favorable or unfavorable. According to the TPB, attitude predicts behavioral intention; that is, behavioral intention is determined by a person's evaluation of a particular behavior (Fischer & Karl, 2022). In a mobile banking context and taken from a TPB perspective, if consumers believe that using mobile banking would deliver the desired outcomes, they will develop a favorable mobile banking attitude, which, in turn, would likely positively influence their behavioral intention to use mobile banking. Many mobile banking studies have evidenced that attitude is a predictor of behavioral intention (Munoz-Leiva et al., 2017; Rehman & Shaikh, 2020). Like these studies, this study also predicts that mobile banking attitude will significantly influence mobile banking behavioral usage intention.

Trust in mobile banking and structural assurances concerning mobile banking are the remaining factors that make up the theoretical framework. Consumers' trust in mobile banking is a key factor to study in mobile banking adoption (Ali et al., 2022) given its cybernetic nature (Kim et al., 2009), which poses threats such as hacking and information disclosure as well as virus and network failure risks (Zhou, 2011). Previous studies pertaining to digital platform usage also found trust as a motivating factor for consumers to communicate their intention to use these platforms (Merhi et al., 2019). Therefore, if consumers distrust mobile banking, they are not likely to adopt this banking channel (S. Sharma & M. Sharma, 2019). However, should a consumer have a high level of mobile banking trust, then they are likely to display a favorable mobile banking attitude, which, in turn, would positively influence their mobile banking behavioral usage intention. Several authors support the correlation between trust and attitude in an online environment (Chauhan, 2015; Munoz-Leiva et al., 2017), which is the assumption also followed in this study.

Structural assurances should be present to strengthen consumers' mobile banking trust. Structural assurances relate to the efficiency of the security mechanisms (Zhang et al., 2019) such as the legalities and technicalities (Lin et al., 2011) embodied in mobile banking. Structural assurances protect consumers against privacy risks and reduce the possibility of financial and information loss and identity theft (Zhou, 2012). In essence, structural assurances give consumers a sense of security and safety when transacting online (Lin et al.,

2011). With the necessary safeguards in order, consumers believe that all commitments will be honored rightfully, bolstering confidence in consumers (Zhang et al., 2019) and reinforcing mobile banking trust (Lin et al., 2011). Indeed, several authors agree that structural assurances predict trust in mobile banking (Kim et al., 2009; Zhou, 2011). In keeping with these studies, this study hypothesizes that perceived structural assurances concerning mobile banking will have a statistically significant favorable influence on their trust in mobile banking. Taken together, this study aimed to determine the influence of attitude, perceived behavioral control, self-efficacy, trust and structural assurances on South African Generation Y consumers' mobile banking behavioral usage intention.

## 2. METHODS

This study's sample and research design were single cross-sectional and descriptive. In keeping with the objective of modelling the factors that explain mobile banking behavioral usage, the target population for this study was Generation Y mobile banking consumers. The assumption here being that Generation Y consumers drive digital banking technologies, as highlighted in the literature review. Defined more specifically, the target population consisted of male and female mobile baking consumers in the age category of 18 to 24 years old. To sample the participants, South African public university campuses were used. Given cost limitations, the study's sampling frame was constrained to university campuses in South Africa's Gauteng province, which, according to statistics, is the country's most populated province (Statistics South Africa, 2020). In this province, a judgement sample from one traditional university campus, one comprehensive university campus and one university of technology campus were selected. Thereafter, the mall-intercept style approach was employed, whereby fieldworkers administered the survey questionnaire at the three selected campuses to a convenience sample of 450 (150 per campus) consumers of mobile banking.

A self-reporting survey questionnaire was constructed to record the data necessary for this study. Two sections make up the questionnaire, including a section designed to capture demographic and banking information and a section designed to measure the factors influencing mobile banking behavioral usage intention. To measure these factors, adapted scales from published studies were included. Behavioral intention, attitudes and perceived behavioral control were measured using three items each adapted from Nor and Pearson (2008), which were originally adapted from Taylor and Todd (1995). Trust in mobile banking was also measured using an adapted three-item scale from Nor and Pearson (2008), obtained from Pavlou (2003) and Suh and Han (2002). In addition, an adapted three-item scale to measure perceived self-efficacy was used (Nor & Pearson, 2008), initially obtained from Compeau and Higgins (1995), as well as Compeau et al. (1999). Lastly, perceived structural assurance was measured using a three-item scale adapted from Nor and Pearson's (2008) internet banking study, adapted initially from previously validated scales (McKnight et al., 2002). A six-point Likert-style scale was used to record the responses to these 18 scaled items.

The captured data were analyzed using IBM SPSS and AMOS, Versions 27. Data analysis included frequency percentages, principal component analysis using varimax rotation, descriptive statistics, a one-sample t-test, confirmatory factor analysis and path analysis using the maximum likelihood approach, and reliability and validity measures.

## 3. RESULTS

The fieldwork resulted in a 74 percent response rate; that is, 334 valid questionnaires were obtained from the 450 questionnaires distributed. The sample profile descriptors are captured in Table 1 together with the frequency percentages for each descriptor.

The sample profiled in Table 1 indicates that the sample was representative of each age category specified in the description of the target population, and that the sample contained participants from each of the three main university types, as


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**Table 1.** Sample profile

| Descriptor | % |
|---|---|
| **Age** | |
| 24 | 5.4 |
| 18 | 6.9 |
| 23 | 8.7 |
| 19 | 14.1 |
| 22 | 14.4 |
| 21 | 24.9 |
| 20 | 25.7 |
| **Gender** | |
| Male | 41.9 |
| Female | 58.1 |
| **Ethnicity** | |
| Colored | 2.4 |
| Indian/Asian | 2.7 |
| White | 10.8 |
| African | 84.1 |
| **University campus** | |
| Technology | 30.0 |
| Comprehensive | 33.0 |
| Traditional | 37.0 |
| **Banking institution** | |
| Nedbank | 12.6 |
| FNB | 17.1 |
| ABSA | 16.4 |
| Capitec | 19.8 |
| Standard bank | 26.6 |
| **Province** | |
| Northern Cape | 0.6 |
| Western Cape | 1.8 |
| Eastern Cape | 2.1 |
| KwaZulu-Natal | 2.7 |
| Mpumalanga | 6.3 |
| North-West | 7.2 |
| Free State | 10.8 |
| Limpopo | 11.4 |
| Gauteng | 57.2 |
| **Home language** | |
| IsiNdebele | 0.3 |
| SiSwati | 3.9 |
| Tshivenda | 4.5 |
| Xitsonga | 4.8 |
| IsiXhosa | 6.9 |
| English | 7.5 |
| Sepedi | 8.4 |
| Afrikaans | 9.3 |
| Setswana | 13.2 |
| IsiZulu | 14.7 |
| Sesotho | 26.3 |

well as each of South Africa's official language groups. Fewer males participated in the study compared to female participants, and most of the participants were from the African ethnicity group, followed by the White ethnicity designation. Given that Gauteng is the most populated province in South Africa, it is no surprise that more than half of the sampled participants marked Gauteng as their origin province, followed by the Limpopo province. Of the five major retail banks in South Africa, Standard bank's mobile banking channel was represented most by the sampled participants, followed by Capitec. Almost eight percent of the participants failed to specify their banking institution.

Once the sample was profiled in terms of frequencies and percentages, the varimax rotation method was used to run principal component analysis. This analysis was done to determine whether any component items cross-loaded and whether any of the items loaded on a component that is not in keeping with the literature. Two test values verified that the data set was appropriate for principal component analysis, namely a Kaiser-Meyer-Olkin (KMO) value of 0.918 and a Bartlett's Test of Sphericity chi-square ($\chi 2$) value of 3714.186, df 153, $p \leq 0.001$ (Pallant, 2020). The rotated components, communalities, eigenvalues and percentage of variance extracted values are presented in Table 2.

As indicated in Table 2, the six components that were extracted explained approximately 77.40 percent of the total variance. In addition, none of the component items cross loaded and all items loaded as per the literature. Furthermore, each communality recorded a value above 0.40, meaning that each of the items relates adequately to the other items in their respective component (Costello & Osborne, 2005). There is also evidence of statistical and practical significance, given that all component loading values exceeded 0.50 (Hair et al., 2019). As such, the underlying factor structure of six components is in keeping with the literature.

With the structural integrity of the component solution confirmed, the next step was to run a maximum likelihood confirmatory factor analysis in AMOS. Several measures made up this

**Table 2.** Principal component analysis

| Items | Component | | | | | | Communalities |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | |
| ATT | – | – | – | 0.818 | – | – | 0.787 |
| ATT | – | – | – | 0.836 | – | – | 0.805 |
| ATT | – | – | – | 0.649 | – | – | 0.675 |
| PBC | 0.762 | – | – | – | – | – | 0.766 |
| PBC | 0.798 | – | – | – | – | – | 0.766 |
| PBC | 0.784 | – | – | – | – | – | 0.778 |
| SEFF | – | – | – | – | 0.705 | – | 0.718 |
| SEFF | – | – | – | – | 0.659 | – | 0.752 |
| SEFF | – | – | – | – | 0.779 | – | 0.757 |
| TRU | – | – | 0.700 | – | – | – | 0.802 |
| TRU | – | – | 0.753 | – | – | – | 0.800 |
| TRU | – | – | 0.664 | – | – | – | 0.781 |
| BI | – | – | – | – | – | 0.681 | 0.788 |
| BI | – | – | – | – | – | 0.528 | 0.753 |
| BI | – | – | – | – | – | 0.682 | 0.804 |
| SASS | 0.778 | – | – | – | – | – | 0.785 |
| SASS | 0.849 | – | – | – | – | – | 0.847 |
| SASS | 0.807 | – | – | – | – | – | 0.768 |
| Eigenvalues | 8.541 | 1.512 | 1.249 | 1.062 | 0.814 | 0.754 | – |
| Percentage of variance | 47.453 | 8.402 | 6.939 | 5.901 | 4.521 | 4.187 | – |

*Note:* ATT: attitude; PBC: perceived behavioral control; SEFF: self-efficacy; TRU: trust; BI: behavioral intention; SASS: structural assurance.

analysis, including internal-consistency (α) and composite reliability (CR), convergent and discriminant validity, as well as an evaluation of the model fit indices.

Internal-consistency reliability requires Cronbach α values exceeding 0.70. For CR and convergent validity, CR values should also exceed 0.70 (Hair et al., 2019). Standardized loading estimates and average variance extracted (AVE) values of ≥ 0.50 also suggest convergent validity (Fornell & Larcker, 1981). Given the salience of establishing discriminant validity when dealing with multi-variate statistical analysis, this study calculated the heterotrait-monotrait (HTMT) correlation ratios between the latent factors, where values below 0.85 are indicative of discriminant validity (Franke & Sarstedt, 2019). The maximum shared variance (MSV) was calculated as an additional measure of discriminant validity, where an MSV value less than the latent factor's AVE value denotes discriminant validity (Almén et al., 2018). The model of measurement specified for testing comprised the six latent factors of attitude, perceived behavioral control, self-efficacy, trust, behavioral intention and structural assurances, all of which have three indicators each.

Each latent factor's first indicator loading was set at 1.0, which equated to 189 distinct sample moments, 69 distinct parameters to be estimated and 120 degrees of freedom (df) based on an over-identified model as well as a $\chi^2$ value of 320.814, with a level of probability equaling 0.001. While the $\chi^2$ value point towards poor model fit, this statistic is notorious for being susceptible to sample sizes that are larger (Byrne, 2010). As such, other model fit index values were computed for this study, including the normed fit index (NFI), the comparative-fit index (CFI), the incremental-fit index (IFI), the Tucker-Lewis index (TLI), the standardized root mean square residual (SRMR) and the root mean square error of approximation (RMSEA). A value above 0.90 for NFI, CFI, IFI and TLI is an acceptable model fit requirement, together with SRMR and RMSEA values below 0.08 (Malhotra, 2020). The statistics returned by AMOS are presented in Table 3, including the standardized loading estimates, error variance estimates, CR values, AVE values, MSV values, and the HTMT ratios and correlation coefficients.

The estimates of the measurement model outlined in Table 3 provide evidence of internal-consistency and composite reliability (α, CR > 0.70). The


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**Table 3.** AMOS output

| Latent factor | Standardized loading estimate | Error variance estimate | α | CR | AVE | MSV | HTMT ratios | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | F1 | F2 | F3 | F4 | F5 |
| F1 | 0.76 | 0.58 | 0.83 | 0.83 | 0.62 | 0.45 | – | – | – | – | – |
| | 0.79 | 0.63 | – | – | – | – | – | – | – | – | – |
| | 0.80 | 0.65 | – | – | – | – | – | – | – | – | – |
| F2 | 0.78 | 0.61 | 0.83 | 0.84 | 0.63 | 0.47 | 0.64 | – | – | – | – |
| | 0.81 | 0.66 | – | – | – | – | – | – | – | – | – |
| | 0.79 | 0.62 | – | – | – | – | – | – | – | – | – |
| F3 | 0.69 | 0.47 | 0.78 | 0.78 | 0.55 | 0.54 | 0.61 | 0.65 | – | – | – |
| | 0.72 | 0.51 | – | – | – | – | – | – | – | – | – |
| | 0.81 | 0.66 | – | – | – | – | – | – | – | – | – |
| F4 | 0.86 | 0.74 | 0.89 | 0.89 | 0.73 | 0.60 | 0.66 | 0.62 | 0.74 | – | – |
| | 0.84 | 0.71 | – | – | – | – | – | – | – | – | – |
| | 0.87 | 0.75 | – | – | – | – | – | – | – | – | – |
| F5 | 0.62 | 0.38 | 0.76 | 0.81 | 0.60 | 0.59 | 0.71 | 0.69 | 0.78 | 0.82 | – |
| | 0.82 | 0.67 | – | – | – | – | – | – | – | – | – |
| | 0.86 | 0.74 | – | – | – | – | – | – | – | – | – |
| F6 | 0.82 | 0.67 | 0.88 | 0.88 | 0.72 | 0.52 | 0.59 | 0.50 | 0.51 | 0.72 | 0.65 |
| | 0.90 | 0.81 | – | – | – | – | – | – | – | – | – |
| | 0.82 | 0.67 | – | – | – | – | – | – | – | – | – |
| Correlations | F1→F2: 0.63 | F1→F3: 0.61 | F1→F4: 0.65 | | | F1→F5: 0.67 | | F1→F6: 0.57 | | F2→F3: 0.65 | |
| | F2→F4: 0.62 | F2→F5: 0.68 | F2→F6: 0.49 | | | F3→F4: 0.74 | | F3→F5: 0.72 | | F3→F6: 0.50 | |
| | F4→F5: 0.78 | F4→F6: 0.72 | F5→F6: 0.60 | | | – | | – | | – | |
| Model fit indices | CFI: 0.95 | NFI: 0.92 | IFI: 0.95 | | | TLI: 0.93 | | SRMR: 0.05 | | RMSEA: 0.07 | |

*Note:* F1: attitude; F2: perceived behavioral control; F3: self-efficacy; F4: trust; F5: behavioral intention; F6: structural assurances.

CR values, together with estimates of the standardized loadings and AVE values above 0.50 verify convergent validity. The HTMT ratios confirm discriminant validity of the latent factors, given that all these ratio values are below 0.85. In addition, the AVE values exceed the MSV values of each respective latent factor, thereby providing additional evidence of discriminant validity. All the model fit indices suggest acceptable model fit. As such, the findings from the confirmatory factor analysis affirm that Generation Y consumers' mobile banking behavioral usage intention is a reliable, valid and well-fitting six-factor structure that comprises attitude, perceived behavioral control, self-efficacy, trust, behavioral intention and structural assurances. Given these findings, the measurement model is suitable for path analysis.

Before analyzing the paths, descriptive statistics, including means ($\bar{X}$) and standard deviations (σ), were calculated, together with a one-sample t-test (expected $\bar{X}$ set at 3.5), as well as Pearson's product-moment correlation coefficients ($r$) and measures of multicollinearity. The one-sample t-test was done to determine the degree to which Generation Y banking consumers believe that they have the capacity to master mobile banking, have a positive mobile banking attitude and perceive mobile banking as being within their control. In addition, the t-test was performed to assess the degree to which Generation Y banking consumers exhibit mobile banking trust and behavioral intend tendencies and view mobile banking as having the necessary safeguards in place. The $r$ values were computed to assess the relationships between the latent factors. To test for multicollinearity between the factors, the collinearity statistics included the computation of tolerance and variance inflation factor (VIF) values. The results of all these statistics are summarized in Table 4.

The one-sample t-test's computed t-statistics ranging from 28.75 to 11.37 and its associated $p$-values ($p$ = 0.000 computed for all latent factors) suggest that the recorded six-point Likert-type scale responses were all statistically significant ($p \leq 0.1$) above the expected mean set at 3.5; that is, the agreement continuum of the scale. In addition, the lower and upper confi-

**Table 4.** SPSS output

| Latent factor | $\bar{X}$ | σ | t-statistic | p-value | Cohen's d | Collinearity statistics | | 95% Confidence intervals | | r | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Tolerance value | VIF | Lower | Upper | F1 | F2 | F3 | F4 | F5 |
| F1 | 4.93 | 0.91 | 28.747 | 0.000** | 0.907 | 0.561 | 1.783 | 1.329 | 1.523 | – | – | – | – | – |
| F2 | 4.71 | 1.14 | 19.382 | 0.000** | 1.144 | 0.589 | 1.698 | 1.090 | 1.337 | 0.53* | – | – | – | – |
| F3 | 4.54 | 1.11 | 17.134 | 0.000** | 1.110 | 0.516 | 1.938 | 0.921 | 1.160 | 0.49* | 0.52* | – | – | – |
| F4 | 4.28 | 1.26 | 11.371 | 0.000** | 1.261 | 0.375 | 2.664 | 0.648 | 0.920 | 0.57* | 0.53* | 0.62* | – | – |
| F5 | 4.47 | 1.21 | 14.611 | 0.000** | 1.208 | 0.544 | 1.839 | 0.836 | 1.096 | 0.56* | 0.54* | 0.62* | 0.68* | – |
| F6 | 4.27 | 1.15 | 12.173 | 0.000** | 1.152 | – | – | 0.643 | 0.891 | 0.50* | 0.43* | 0.43* | 0.64* | 0.55* |

*Note:* Constant = Dependent variable: Subject number. ** Statistically significant at p ≤ 0.05 (2-tailed); * Statistically significant at p ≤ 0.01 (2-tailed); F1: Attitude; F2: Perceived behavioral control; F3: Self-efficacy; F4: Trust; F5: Behavioral intention; F6: Structural assurances.

dence interval values confirm the statistical significance of the means, given that the confidence intervals did not include zero (Lane, n.d.). Of the means, as outlined in Table 4, mobile banking attitude (mean = 4.93) was the highest, indicating that Generation Y mobile banking consumers display a favorable mobile banking attitude. The second highest mean was recorded for perceived behavioral control (mean = 4.71), meaning that the sampled participants believe using mobile banking is entirely within their control. The next highest mean was recorded for self-efficacy (mean = 4.54), inferring that Generation Y mobile banking consumers view themselves as capable of using mobile banking. With Cohen's d-values ranging between 0.938 and 1.573 (large effect size), mobile banking attitude, perceived behavioral control and self-efficacy were all also practically significant (Cohen, 1992). Although behavioral intention (mean = 4.47), trust (mean = 4.28) and structural assurances (mean = 4.27) recorded lower means, these latent factors were still practically significant, with Cohen's d-values ranging between 0.621 and 0.666 (medium effect size) (Cohen, 1992).

Also, in Table 4 is Pearson's product-moment *r*, which indicates statistically significant ($p \leq 0.01$) positive relationships between each of latent factors, with the most robust relationship recorded between mobile banking trust and mobile banking behavioral usage intention ($r = 0.68$). Not only does the correlation analysis confirm the measurement theory's nomological validity (Malhotra, 2020), it also eliminates multicollinearity between the factors, given that none of the coefficients were above 0.90 (Pallant, 2020). Analyzing more serious multicollinearity issues, collinearity diagnostics were run on the independent factors with the subject number serving as the dependent variable. As seen in Table 4, the tolerance values exceed 0.10, and the average VIF of 1.984 does not exceed 10, thereby eliminating serious multicollinearity between the factors (Hair et al., 2019).

Path analysis then ensued to address the primary aim of this study, which was to model the factors contributing to mobile banking behavioral usage intention among Generation Y banking consumers in South Africa. The unstandardized and standardized regression estimates, together with the standard errors and p-values produced by AMOS are reported in Table 5.

The evidence in Table 5 suggests that perceived self-efficacy has a statistically significant positive influence on Generation Y banking consumers' perceived behavioral control ($\beta = 0.76$, $p < 0.01$), which, in turn, has a statistically significant posi-

**Table 5.** Path analysis

| Paths | Standardized β | Unstandardized β | SE | p | Result |
|---|---|---|---|---|---|
| Self-efficacy → Perceived behavioral control | 0.76 | 0.85 | 0.096 | 0.01 | Sig. |
| Structural assurances → Trust | 0.94 | 1.26 | 0.107 | 0.01 | Sig. |
| Trust → Attitude | 0.62 | 0.40 | 0.044 | 0.01 | Sig. |
| Perceived behavioral control → Attitude | 0.44 | 0.32 | 0.049 | 0.01 | Sig. |
| Attitude → behavioral intention | 0.89 | 1.26 | 0.104 | 0.01 | Sig. |

*Note:* β: beta coefficient; SE: standard error; p: statistically significant at p ≤ 0.01 (2-tailed).


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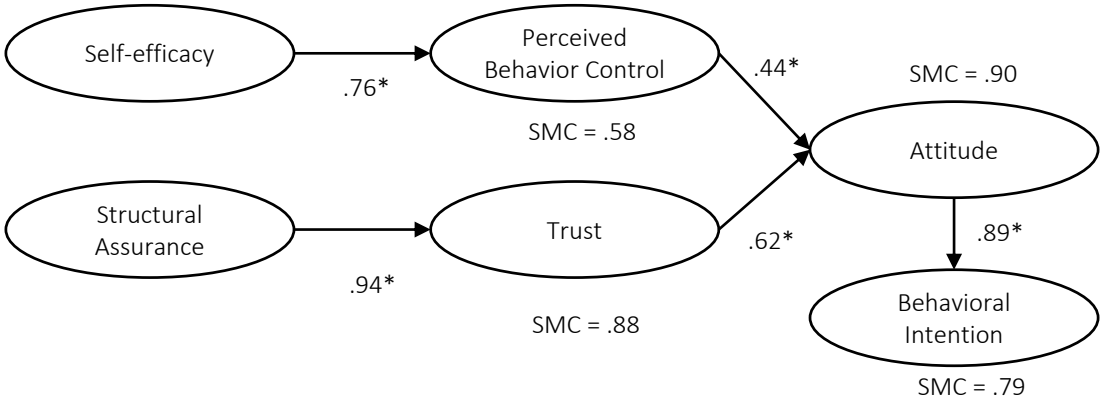


*Note:* * Statistically significant at p ≤ 0.01.

**Figure 1.** Structural model

tive influence on these consumers' mobile banking attitudes (β = 0.44, p < 0.01). Furthermore, the path analysis results indicate that structural assurance has a statistically significant positive influence on Generation Y banking consumers' mobile banking trust (β = 0.94, p < 0.01), which, in turn, has a statistically significant positive influence on mobile banking attitudes (β = 0.62, p < 0.01). In addition, Generation Y banking consumers' mobile banking attitudes have a statistically significant positive influence on their mobile banking behavioral usage intention (β = 0.89, p < 0.01). With a squared multiple correlation (SMC) of 0.58, the structural model explains 58 percent of the variance in Generation Y banking consumers' perceived behavioral control. Moreover, the model explains 88 percent (SMC = 0.88) of the variance in Generation Y banking consumers' trust in mobile banking. The remaining SMCs indicate that the model explains 90 percent and 79 percent of the variance in Generation Y banking consumers' mobile banking attitudes and their mobile banking behavioral usage intention, respectively. A visual depiction of the structural model is presented in Figure 1.

Regarding the model fit index values, this structural model exhibits good model fit with an IFI of 0.94, TLI of 0.92, CFI of 0.94, NFI of 0.91, SRMR of 0.05 and RMSEA of 0.07.

## 4. DISCUSSION

This study aimed to test a structural model of the factors influencing Generation Y consumers' behavioral intention to use mobile banking. More specifically, this study tested whether perceived self-efficacy influences perceived behavioral control, which, in turn, influences attitude towards mobile banking. Moreover, the study's model tested whether structural assurances affect mobile banking trust and whether trust, in turn, influences mobile banking attitude. Lastly, the study tested whether attitude significantly influences behavioral intention to use mobile banking. The study's findings suggest that Generation Y consumers' perceived self-efficacy concerning mobile banking affects their perceived behavioral control. This finding echoes the results of similar studies (Ashraf, 2022; Gangwal & Bansal, 2016). In addition, the study found that the sample's perceived behavioral control influences their attitude towards mobile banking. This finding is supported by previous research (Saibaba & Murthy, 2013; Susanto & Goodwin, 2013). Furthermore, the study discovered that having the necessary mobile banking structural assurances in place positively influences Generation Y consumers' trust in mobile banking, which, in turn, significantly affects their attitude towards mobile banking. Several other studies found the same results (Chauhan, 2015; Munoz-Leiva et al., 2017; Zhou, 2011). Lastly, like in many other studies (Munoz-Leiva et al., 2017; Rehman & Shaikh, 2020), this study found that Generation Y consumers' attitude towards mobile banking influences their mobile banking behavioral usage intention. As such, all hypothesized paths are in accordance with the literature.

Given the study's results, retail banks are advised to continually offer a wide array of mobile banking services that are easy to use and would re-

quire little effort. Retail banks are encouraged to create a frustration-free digital banking experience for their consumers. This experience can be achieved through advanced mobile banking account management capabilities. Moreover, with proper mobile banking security features in place, retail banks offer their consumers greater oversight of their personal information, which is likely to build trust in the mobile channel. Furthermore, when consumers require mobile banking technical support, retail banks could consider artificial intelligence such as chat robots to offer such support. This is likely to positively influence consumers' self-efficacy and behavioral control conditions, as well as their trust in mobile banking. In implementing these recommendations, retail banks are likely to positively influence their consumers' mobile banking behavioral usage intention, thereby increasing mobile banking usage.

## CONCLUSION

This study aimed to determine Generation Y consumers' mobile banking behavioral usage intentions in South Africa. The path analysis results indicated that perceived self-efficacy, behavioral control, structural assurance and trust have a statistically significant favorable influence on the target population's mobile banking attitude, which, in turn, has a statistically significant positive effect on their mobile banking behavioral usage intention. The empirical findings from this study contribute to theoretical knowledge concerning mobile banking adoption and provide valuable insights that retail banks and financial institutions alike can use to promote their mobile banking offering. Understanding the factors influencing Generation Y consumers' mobile banking behavioral usage intention could assist retail banking practitioners in developing appropriate mobile banking models. In addition, retail banks could formulate strategies that would exploit mobile banking opportunities, reduce risks associated with its use and bolster mobile banking trust to ultimately reach improved levels of mobile banking usage.

## AUTHOR CONTRIBUTIONS

Conceptualization: Marko van Deventer.
Data curation: Marko van Deventer.
Formal analysis: Marko van Deventer.
Methodology: Marko van Deventer.
Project administration: Marko van Deventer.
Software: Marko van Deventer.
Validation: Marko van Deventer.
Visualization: Marko van Deventer.
Writing – original draft: Marko van Deventer.
Writing – reviewing & editing: Marko van Deventer.

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