UNVEILING TECH-SWITCHING DYNAMICS: AN INTERPLAY OF PLANNED BEHAVIOR AND TECHNOLOGY ACCEPTANCE IN PAKISTAN'S HIGH-TECH MARKET

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Abstract

This research article investigates the switching intentions and attitudes towards switching intentions among high-tech electronic products, including smartphones, smartwatches, and smart appliances, in Pakistan. Unlike previous studies in Pakistan, this research employs the Technology Acceptance Model (TAM) and Theory of Planned Behavior (TBP) to gain a more comprehensive understanding of customer behavior in this context. The study collected data through online questionnaires distributed to customers across the Khyber Pakhtunkhwa Province of Pakistan, resulting in 261 responses, with 255 being used for analysis. The findings reveal significant relationships between various factors. Firstly, a positive attitude towards switching intention, a greater perceived control over resources, and positive feedback from internal groups were found to increase the likelihood of customers switching among high-tech electronic products. Secondly, the study found that customers' attitudes towards switching intention are positively influenced by perceived ease of use, perceived usefulness, and personal innovativeness. When customers perceive a product as easy to learn and use, providing better utility, and possessing innovative features, their attitudes toward switching intentions become more favorable. In summary, this research provides valuable insights into the factors influencing switching intentions and attitudes among customers of high-tech electronic products in Pakistan, extending the scope beyond smartphones. The use of both TAM and TBP models enhances the comprehensiveness of the study, offering valuable implications for businesses and policymakers in the region's high-tech electronic product market. This research article is based on the purpose of using TBP to knowing switching intention while CAT model to know attitude towards switching intention among high-tech electronic products which includes of smartphones, smart watch and smart appliances etc. in a developing country Pakistan. Most studies of Pakistan in Pakistan has not used the TBP to know switching intention and CAT model to know attitudes towards switching intention among high-tech electronic product, in addition neither they have included other high-tech electronic products besides from smartphone. However, extending the high-tech electronic products category by included such products such as smart watches, smart appliances and laptops etc. while using the technological aspect such as looking to attitudes towards switching intention from extended TAM model (CAT) and TBP to among high-tech electronic products, would provide more comprehensive results.

Design/methodology/approach:
This study model is based on knowing the attitudes towards switching intention of a customers from the technological perspective model (CAT) while knowing the switching intention of customer is from the perspective of TBP among high-tech electronic products in the KP Province of Pakistan. Quantitative methodology is followed and to collect the data from the respondent online questionnaire as an approach is used, which is then send to customers across Khyber Pakhtunkhwa Province of Pakistan, as a result total 261 responses were received from which 255 were used for this study.

Findings:
Results that are derived from using multiple regression model between Switching intention and Attitude towards switching intention, perceived behavioral control, subjective norms, results suggested that, the more positive is attitude of a customer, the more control over the resources a customer have and the positive consultation a customer received from internal group then their intention to switch among high-tech electronic products will likely to be happen. Furthermore, the second half of the result which are derived from using multiple regression model between Attitude towards switching intention and perceived ease of use, perceived usefulness, personal innovativeness, suggested that when customer perceive a particular product is easy to be learn, used, provide better utility and possess innovativeness then their attitudes towards switching intention will be positively influences.

Research Implication:
In context to the literature body this study contributes by using comprehensive model based on knowing attitudes towards switching intention from the perspective of CAT model and to know switching intention is from the perspective of TBP among high-tech electronic product in a developing country Pakistan.

In context to practical implication it allows practitioner to make strategies to know customer switching intention and attitudes towards switching intention in order to halt the customer from performing actual switching behavior. Alternatively, it allows practitioner to make strategies to for firms to attract prospect switchers.

Originality:
Most studies in Pakistan haven't looked to switching intention among high-tech product from the perspective of theory of planned behavior and attitude towards switching intention among high-tech products from the aspect of technological CAT model, furthermore neither they have extended the high-tech electronic products category by including products such as laptop, smart watch and smart appliances etc. Therefore, this study used the extensive model based on theory of planned behavior and CAT model to know switching intention and attitudes towards switching among high-tech electronic products such as smartphones, smart watches, laptop, smart appliances etc.

Introduction:
In this era of technological advancement, innovative high-tech products in Pakistan (Ashfaq, 2015) and across globe are presented to the market daily (Msaed, Al-kwifi, & Ahmed, 2017)These presented innovative high-tech products produced by different industries such as Electronic, Automobile, Aviation and Pharmaceutical industry etc. (Jawaid, 2020; Rahman, 2022; Kolossovski, 2019) has change the preferences of customers regarding the opting to a particular high-tech product (Jawaid, 2020; Rahman, 2022; Msaed, Al-kwifi, & Ahmed, 2017; Kolossovski, 2019)which has cause switching behavior (Msaed, Al-kwifi, & Ahmed, 2017)

Switching behavior is comprised of switching intention the likelihood of switching to a particular products while leaving the previous one, on the other hand actual switching behavior is the performed behavior by a customer who have actually switched from the previous product while opting for a new one to buy (Camacho, Vázquez, & Cossío-Silva, 2017; Youn, Lee, & Brookshire, 2021; Wirtz, Xiao, Chiang, & Malhotra, 2014) Knowing switching intention before actual switching behavior is important (Camacho, Vázquez, & Cossío-Silva, 2017; Msaed, Al-kwifi, & Ahmed, 2017)specially for firms of developing countries as these firms possess less resources to compete against the developed nation firms in international market (Pologeorgis, J Boyle, & Schmitt, 2022)therefore working on switching

intention in advance will allow businesses to make strategies to halt the actual switching behavior while saving up the resources, as acquiring new customers cost more than retaining the existing ones (Camacho, Vázquez, & Cossío-Silva, 2017; Dwivedi, Papzafeiropoulou, Brinkman, & Lal, 2010; Msaed, Al-kwifi, & Ahmed, 2017) In addition knowing attitudes towards switching intention of a customer among high-tech products by using technological perspective the use of Cat model is important (Msaed, Al-kwifi, & Ahmed, 2017)in order to know the customer attitudes and make strategies to change their attitude (Alaeddin, Rana, Zainudin, & Kamarudin, 2018; Tu & Yang, 2019; Msaed, Al-kwifi, & Ahmed, 2017) as attitudes is a changeable factor it changes with time (Garcia, Saura, Orejuela, & Junior, 2020) therefore knowing it will allow business to attract the prospect switcher to increase market share and performances and also to stop customer from perform actual switching behavior (Msaed, Al-kwifi, & Ahmed, 2017)

This study will know the switching intention and attitudes towards switching intention of a customers among high-tech electronic products smartphones, laptop, smart appliances, smart watch etc. as most these studies (Ashfaq, 2015; Saeed, Hussain, & Riaz, 2011; Rizwan, Sadaf, Hafeez, & Naz, 2013; Tanveer, et al., 2021; Soomro & Ghumro, 2013; Akhter, Saleem, Qamar, Iqbal, & Mahmood, 2014) in Pakistan have only used smart phone from the high-tech electronic products. Furthermore, neither these studies have used a comprehensive model to know behavioral intention from theory of planned behavior and attitudes towards switching intention from the perspective of TAM or extended TAM (CAT).

Therefore, this study has used CAT model to know attitudes towards switching intention upon the reference of (Msaed, Al-kwifi, & Ahmed, 2017) while TBP to know switching intention upon the reference of (Chen & Chao, 2011; Msaed, Al-kwifi, & Ahmed, 2017; Tu & Yang, 2019) furthermore including a variable personal innovativeness in extended TAM (CAT) model is from (Garcia, Saura, Orejuela, & Junior, 2020; Tu & Yang, 2019) and addition to the high-tech electronic product category is done by the reference of (Msaed, Al-kwifi, & Ahmed, 2017)

LITERATURE REVIEW

High-tech as a terminology applied to those industries that possess of innovative technology (Rouse, 2016)While high-tech product are those products that are made of out of technological innovation while possessing of speed, comfort, innovative features and artificial intelligence (Kolossovski, 2019; Shun & Carroll, 2017; Steenhuis & Bruijn, 2006)Furthermore high-technological industries comprised of different industries which produces a wide variety of products daily across world market, such as Pharma industries produce health related products, Electronic industry produces laptops, smartphones, smart appliances and computers etc. Aviation industry produce aircrafts and other related aviation products while automobile industry produces cars and buses etc. (Rahman, 2022; Kolossovski, 2019; Jawaid, 2020) Furthermore, the meaning and definition of high-technology and high-tech product varies across universe (Kolossovski, 2019; Shun & Carroll, 2017; Steenhuis & Bruijn, 2006) what looks now as a high-technology and a high-tech product may not be considers in the future as a high technology or high-tech products (Shun & Carroll, 2017)Researcher, Practitioner and authors have stated different meaning and definition of high-technology (Kolossovski, 2019; Rahman, 2022; Steenhuis & Bruijn, 2006; Jawaid, 2020)

High technological sector is unsaturated (Msaed, Al-kwifi, & Ahmed, 2017) while more and more high-technological sophisticated products being presented to the universal market (Ashfaq, 2015; Msaed, Al-kwifi, & Ahmed, 2017; Rahman, 2022; Jawaid, 2020) which changes the preferences of customers and lead to the attitudes towards switching intention and switching intention (Msaed, Al-kwifi, & Ahmed, 2017)Switching intention is referred to as the likelihood of performing switching to a new product while leaving the old one where as the attitudes towards switching intention is the degree to which an individual evaluates positively or negatively about the switching intention of a customer's (Awan, Nadeem, & Faisal, 2016; Wirtz, Xiao, Chiang, & Malhotra, 2014; Msaed, Al-kwifi, & Ahmed, 2017) Researcher, authors and practitioners have opted that knowing switching intention in advance before actual switching behavior is important as it allows business to know their customers switching intention phase and makes strategies to stops customers from actual switching behavior (Camacho,

Vázquez, & Cossío-Silva, 2017; Msaed, Al-kwifi, & Ahmed, 2017; Dwivedi, Papzafeiropoulou, Brinkman, & Lal, 2010)Alternatively knowing attitudes towards switching intention by using a technological aspect is also important if one wants to know switching intention among high-tech products (Msaed, Al-kwifi, & Ahmed, 2017)However if this problem switching intention is not known well it will affect firm's performance and market share etc. (Camacho, Vázquez, & Cossío-Silva, 2017; Dwivedi, Papzafeiropoulou, Brinkman, & Lal, 2010) as acquiring customer cost more than retaining the existing ones therefore knowing switching intention is utterly important (Msaed, Al-kwifi, & Ahmed, 2017)specially for firms that originate from developing countries who have less resources to compete against the developed nation firms which possess of vast resource (Pologeorgis, J Boyle, & Schmitt, 2022)

Furthermore looking to switching intention from the perspective of TBP over TRA is preferable due to the fact that both theory stated the same message that individual certain behavior is determined by behavioral intention but the antecedent of behavioral intention in TRA were only limited to attitude which is referred to as "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question" (Bansal & Taylor, 1999; Mouloudj, Bouarar, & Stojczew, 2021)and subjective norm is referred to as individuals who are about to make a particular decision will think about whether his particular decision will be favored or unflavored by their family, peers, teacher and other reference group (Garcia, Saura, Orejuela, & Junior, 2020; Tu & Yang, 2019)Therefore, TBP expand the boundary by introducing perceived behavior control to the antecedent of behavioral intention which explained the limitation of TRA (Msaed, Al-kwifi, & Ahmed, 2017; Tu & Yang, 2019)which are non- motivational factors such availability of resources including money and skills etc. which would affect behavioral intention too (Msaed, Al-kwifi, & Ahmed, 2017) Furthermore using the theory of planned behavior to know switching intention model (Msaed, Al-kwifi, & Ahmed, 2017; Garcia, Saura, Orejuela, & Junior, 2020; Tu & Yang, 2019) and extended TAM(CAT) model to know attitudes towards switching intention from a technological aspect (Msaed, Al-kwifi, & Ahmed, 2017) is supported by studies (Msaed, Al-kwifi, & Ahmed, 2017) TAM as a model presented by Davos in 1090 with the variables perceived ease of use and perceived usefulness to explain and predict ''an individual's acceptance of technology and to analyze the factors influencing an individual's acceptance of new information'' (Roy, 2017) TAM consider perceived ease of use and perceived usefulness is an independent variable while behavioral intention, attitude and actual behavior as dependent variables (Roy, 2017)However, modifications to the original TAM have been necessitated by the constant development of new and more sophisticated IT devices (Roy, 2017) Such as Msaed, Al-kwifi & Ahmed, 2017 in his study use CAT the extended version of TAM model which is developed by Kulviwat et al.(2007) Consumer acceptance of technology model assumed that consumers may switch to another technology brand not only to take advantage of its additional useful benefits but also to enjoy the new experience it offers which includes variables like company innovativeness and relative advantage with the variables of perceived usefulness and perceived ease of use (Msaed, Al-kwifi, & Ahmed, 2017)

Lastly most studies on high-tech sector of Pakistan which are as referred (Ashfaq, 2015; Saeed, Hussain, & Riaz, 2011; Rizwan, Sadaf, Hafeez, & Naz, 2013; Tanveer, et al., 2021; Soomro & Ghumro, 2013; Akhter, Saleem, Qamar, Iqbal, & Mahmood, 2014) have used conventional model based on variables like price, brand image, service quality and advertisement etc. to know behavioral intention among high-tech smartphone product. Furthermore, they haven't used the perspective of TBP to know switching intention and TAM or extended TAM (CAT) to know attitudes towards switching intention furthermore neither they have expanded the high-tech electronic product category.

Based on Literature Review:

On the basis of literature recommendation, following theoretical framework and research model, recommended dependent variables and research hypothesis for (Independent variables) has been proposed while discussing it below in details.

Theoretical Framework and Research Model:

Knowing switching intention of high-tech products is complex as it requires a deeper understanding; therefore, researcher recommended the usage of theory of planned behavior over theory of reasoned

action (Msaed, Al-kwifi, & Ahmed, 2017)As theory of reasoned action has certain limitation such as not taking into account such factors which are subjective norm and perceived behavior control (Bansal & Taylor, 1999; Msaed, Al-kwifi, & Ahmed, 2017)Thus, it makes theory of planned behavior a viable option as studies have also suggested that theory of planned behavior is a good predictor in complex scenarios (Bansal & Taylor, 1999; Tu & Yang, 2019; Msaed, Al-kwifi, & Ahmed, 2017) in addition researcher have also recommended to use technological aspect in knowing attitudes towards switching intention (Msaed, Al-kwifi, & Ahmed, 2017)Therefore, this study has proposed the Extended TAM (CAT) model to know attitudes towards switching intention with TBP to know switching intention among high-tech electronic products in developing country Pakistan.

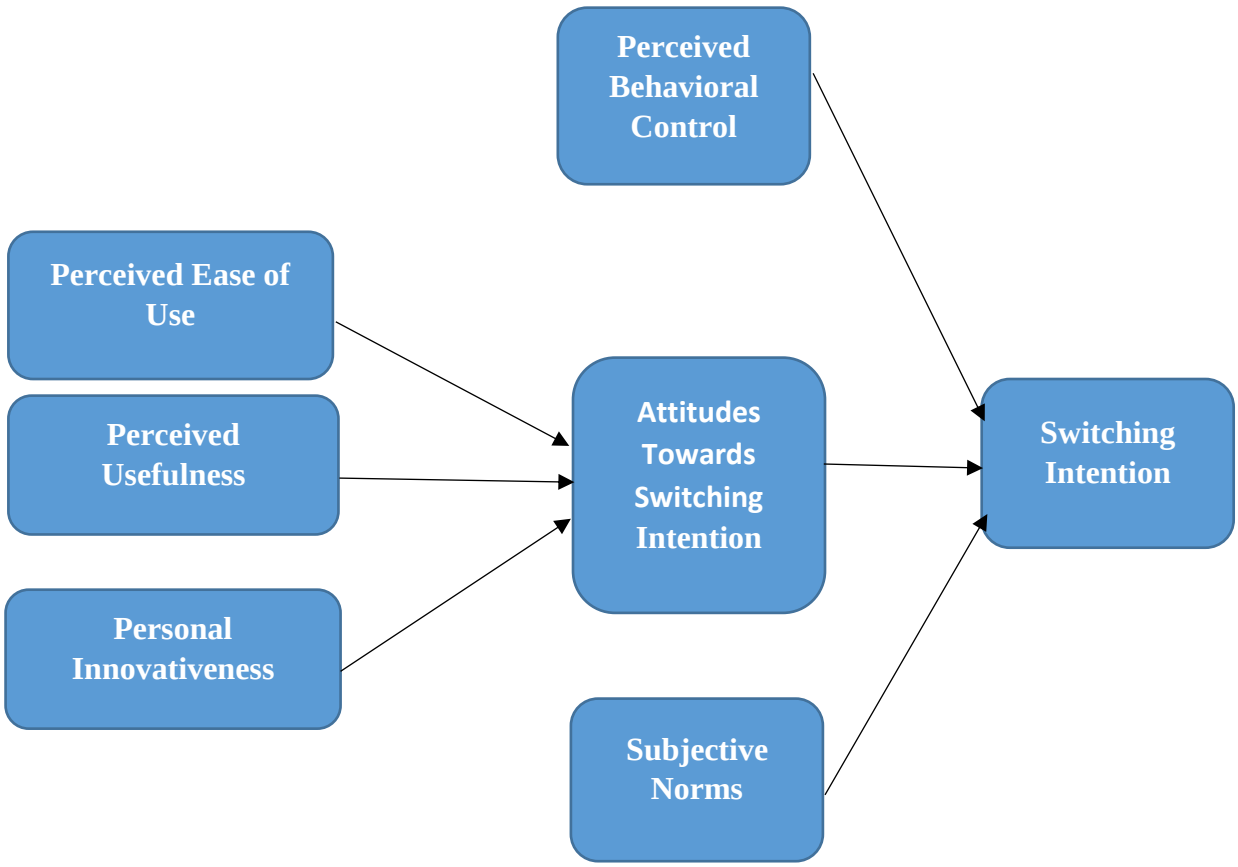
Proposed Model is made from combining various literature:

First Theory of Planned behavior is made from referred literature (Msaed, Al-kwifi, & Ahmed, 2017; Garcia, Saura, Orejuela, & Junior, 2020; Mouloudj, Bouarar, & Stojczew, 2021)

Variables which are included in proposed model such as Switching Intention, Attitudes towards switching intention and Subjective norms is from (Msaed, Al-kwifi, & Ahmed, 2017; Tu & Yang, 2019) While variable Perceived Behavioral Control is from (Garcia, Saura, Orejuela, & Junior, 2020; Mouloudj, Bouarar, & Stojczew, 2021)

Secondly Extended Technology Acceptance Model (CAT) is from referred literature (Msaed, Al-kwifi, & Ahmed, 2017; Tu & Yang, 2019; Garcia, Saura, Orejuela, & Junior, 2020)

Variables that are part of proposed model such as Perceived Ease of Use and Perceived usefulness is from (Msaed, Al-Kwif, & Ahmed, 2017; Garcia, Saura, Orejuela, & Junior, 2020; Tu & Yang, 2019; Alaeddin, Rana, Zainudin, & Kamarudin, 2018) While Variable Personal Innovativeness is from (Garcia, Saura, Orejuela, & Junior, 2020; Tu & Yang, 2019)



Dependent variables:

- Based on the literature review we have two dependent variables

First dependent variable **switching intention** with their sources attitudes towards switching intention, subjective norm and perceived behavioral control referred to as theory of planned behavior

Second Dependent variable **attitude towards switching intention** with their sources perceived ease of use, perceived usefulness and personal innovative this is referred to as consumer acceptance of technology also knows as extended technology acceptance model.

Dependent variable: Switching intention

Switching intention according to theory of planned behavior is considered dependent variable (Garcia, Saura, Orejuela, & Junior, 2020; Roy, 2017; Tu & Yang, 2019)while looking it from the perspective of theory of planned behavior it possess of their sources such as attitudes towards switching intention, subjective norm and perceived behavioral control (Msaed, Al-kwifi, & Ahmed, 2017; Roy, 2017; Tu & Yang, 2019; Garcia, Saura, Orejuela, & Junior, 2020)Switching intention is defines for this study as the likelihood of making an intention to try to switch among high-tech electronic products upon the reference of (Msaed, Al-kwifi, & Ahmed, 2017)Switching intention in advance to be known is supported by various studies (Camacho, Vázquez, & Cossío-Silva, 2017; Msaed, Al-kwifi, & Ahmed, 2017)if switching intention problem is not properly asses it will lead to actual switching behavior which can affect firm performances (Camacho, Vázquez, & Cossío-Silva, 2017; Dwivedi, Papzafeiropoulou, Brinkman, & Lal, 2010) specially for firms of the developing countries which possess lesser resources to withhold itself and compete against the international market (Pologeorgis, J Boyle, & Schmitt, 2022)

Dependent variable Attitude towards switching intention:

TAM model (Roy, 2017) and extended TAM model (CAT) (Msaed, Al-kwifi, & Ahmed, 2017) assumes that attitudes towards switching intention is a dependent variable. Attitude towards switching intention referred to as the for this study is the degree to which an individual evaluates the attitudes towards switching intention positively or negatively about high-tech electronic products upon the reference of this mention studies (Camacho, Vázquez, & Cossío-Silva, 2017; Msaed, Al-kwifi, & Ahmed, 2017) In addition studies claim that the sources such as perceived usefulness, perceived ease of use has significantly influences attitudes towards switching intention (Alaeddin, Rana, Zainudin, & Kamarudin, 2018; Msaed, Al-kwifi, & Ahmed, 2017; Garcia, Saura, Orejuela, & Junior, 2020) and Personal innovativeness also inflames attitudes towards switching intention (Garcia, Saura, Orejuela, & Junior, 2020; Tu & Yang, 2019)

Research hypothesis for Independent Variables:

Attitude Towards Switching Intention:

Attitudes of an individual changes with time by encountering new things (Garcia, Saura, Orejuela, & Junior, 2020) Generally attitudes is referred to as the evaluation performed by an individual to favor or disfavor an object (Msaed, Al-kwifi, & Ahmed, 2017) or behavior (Garcia, Saura, Orejuela, & Junior, 2020) However this study upon the reference of (Garcia, Saura, Orejuela, & Junior, 2020; Mouloudj, Bouarar, & Stojczew, 2021) has used the definition according to this study which is the degree to which an individual evaluates positively or negatively about the switching intention of a customers among high-tech electronic products. Furthermore, studies have supported the idea that attitude towards switching intention is a good predictor of switching intention (Garcia, Saura, Orejuela, & Junior, 2020; Msaed, Al-kwifi, & Ahmed, 2017; Tu & Yang, 2019) Thus, upon the reference of (Alaeddin, Rana, Zainudin, & Kamarudin, 2018; Garcia, Saura, Orejuela, & Junior, 2020; Msaed, Al-kwifi, & Ahmed, 2017) we hypothesize that.

H1: Attitudes towards switching has a relation with switching intention of a customers among high-tech products

Subjective Norms:

Subjective norms definition has been modified and used by different studies according to their study aim (Tu & Yang, 2019) Such as Tu & Yang, 2019 has divided it into groups such as external group which is referred to as people who are outsider and with lesser ties while internal groups are those who have close ties such as family members, friends. Therefore, as our study is based in Pakistan while having a collectivist culture (Abbasi, Elyas, & Tarhini, 2015) therefore we will consider only internal group influencer which are family member, friends. Furthermore, upon the requirement of this study we have adopt the definition on the reference of (Abbasi, Elyas, & Tarhini, 2015; Tu & Yang, 2019) which is defines as that individuals when they think about switching among high-tech

electronic products will be influences by their family and friends. Lastly on the bases of this study (Abbasi, Elyas, & Tarhini, 2015; Tu & Yang, 2019) we have hypothesized that…

H2: Subjective norms has a relation with switching intention of a customers among high-tech products

Perceived Behavioral Control:

Positive attitudes and subjective norms doesn't guarantees that individual or individuals will likely to perform behavioral intention that is switching intention or intention to buy if the vary factor that control behavior is missing (Ibrahim & Arshad, 2017) referred to as perceived behavioral control (Yang, Lee, & Zo, 2017; Tu & Yang, 2019; Ibrahim & Arshad, 2017) perceived behavioral control possess of an external factors such as time, money while internal factors possess of skills and knowledge (Yang, Lee, & Zo, 2017; Ibrahim & Arshad, 2017) Furthermore perceived behavioral control is defined as the estimated degree of difficulty or easiness of performing a behavior (Yang, Lee, & Zo, 2017; Garcia, Saura, Orejuela, & Junior, 2020; Ibrahim & Arshad, 2017) Upon the references of (Tu & Yang, 2019; Yang, Lee, & Zo, 2017; Ibrahim & Arshad, 2017) this study will used the definition which only include external variables in perceived behavioral control such as time, money and resources. Lastly on the basis of this particular studies (Garcia, Saura, Orejuela, & Junior, 2020; Mouloudj, Bouarar, & Stojczew, 2021) it is hypothesized that…

H3: Perceived behavioral control has a relation with switching intention of a customers among high-tech products

Perceived Ease of Use:

On the reference of (Msaed, Al-kwifi, & Ahmed, 2017)we have adopted the definition according to the context of our study, perceived ease of use as referred to as the degree to which a customer's believe that using a particular high-tech electronic product will be easy in learning and using as compare to the previous one. Furthermore studies have used the variable of TAM model perceived ease of use in high-tech service sector (Alaeddin, Rana, Zainudin, & Kamarudin, 2018; Garcia, Saura, Orejuela, & Junior, 2020) and high-tech product sector (Tu & Yang, 2019; Msaed, Al-kwifi, & Ahmed, 2017) However, results from this studies (Garcia, Saura, Orejuela, & Junior, 2020; Tu & Yang, 2019; Msaed, Al-kwifi, & Ahmed, 2017) suggested that the more an individual believes that using a particular high-tech product or services is easy in learning and using then the more likely his attitude towards switching intention will be influences.

Thus on the reference of (Alaeddin, Rana, Zainudin, & Kamarudin, 2018; Tu & Yang, 2019; Garcia, Saura, Orejuela, & Junior, 2020) it is hypothesizing that.

H4: Perceived ease of use has a relation with customer's attitudes towards switching intention among high-tech products

Perceived Usefulness:

Generally perceived usefulness carries a meaning that using a particular technological product, system (Msaed, Al-kwifi, & Ahmed, 2017) and technological services (Alaeddin, Rana, Zainudin, & Kamarudin, 2018; Garcia, Saura, Orejuela, & Junior, 2020) would improve one's performances (Msaed, Al-kwifi, & Ahmed, 2017) therefore on the reference of (Msaed, Al-kwifi, & Ahmed, 2017) this study modified the definition which is when customers sees that a particular high-tech electronic products well provide benefits far more than the one he or she is using then their attitude towards switching intention will be likely influences (Msaed, Al-kwifi, & Ahmed, 2017)

Thus, it is hypothesized on the references of (Alaeddin, Rana, Zainudin, & Kamarudin, 2018; Garcia, Saura, Orejuela, & Junior, 2020; Tu & Yang, 2019; Msaed, Al-kwifi, & Ahmed, 2017)

H5: Perceived usefulness has a relation with customer's attitudes towards switching intention among high-tech products

Personal Innovativeness:

Underpinning personal innovativeness with innovation diffusion theory on the ground of the marketing field as a concept used and tested more often (Tu & Yang, 2019; Garcia, Saura, Orejuela, & Junior, 2020) but haven't used with Extended TAM (CAT) model which can be been seen in the study of (Msaed, Al-kwifi, & Ahmed, 2017) Furthermore mention studies (Ashfaq, 2015; Saeed, Hussain, & Riaz, 2011; Rizwan, Sadaf, Hafeez, & Naz, 2013; Tanveer, et al., 2021; Soomro & Ghumro, 2013;

Akhter, Saleem, Qamar, Iqbal, & Mahmood, 2014) in Pakistan also haven't used extended TAM(CAT) model. Therefore, this study will underpin personal innovativeness in TAM making it Extended TAM (CAT) model to know the customer's attitude towards switching intention among high-tech electronic products. Studies have adopted the definitional concept of personal innovativeness according to their studies (Pourabedin, Foon, Chatterjee, & Ho, 2016; Garcia, Saura, Orejuela, & Junior, 2020; Tu & Yang, 2019))Hence this study defines that individual who possess of personal innovativeness trait will prefers to try out new high-tech electronic products

On the references of (Tu & Yang, 2019; Garcia, Saura, Orejuela, & Junior, 2020) this study hypothesizes.

H6: Personal innovativeness has a relation with customer's attitudes towards switching among high-tech products

Research methodology and methods:

For knowing the results of our study for that selecting an appropriate paradigm (Yong, Husin, & Kamarudin, 2021) methodology (Kabir, 2016; Mackenzie & Knipe, 2006) and method are needed (Verma, Gautam, Pandey, Mishra, & Shukla, 2017; Haute, 2021)Paradigm according to Thomas Kuhn an American philosopher is a philosophical way of thinking, later the word paradigm was used in educational researches by researchers and for them it carries a meaning a researcher ways of looking into world of phenomenon's (Kivunja & Kuyini, 2017) ways of looking into phenomena of the world are numerous (Rehman & Alharthi, 2016; Kivunja & Kuyini, 2017) but most commonly ways to look to the phenomena of the world are positivism and pragmatisms (Kivunja & Kuyini, 2017) Using a positivism or pragmatist way it entirely depend on the research aim, need and context (Yong, Husin, & Kamarudin, 2021) Keeping in mind our research requirements and aim therefore positivist paradigm is chosen on the reference of (Yong, Husin, & Kamarudin, 2021) Furthermore positivist tends to used quantitative methodology (Yong, Husin, & Kamarudin, 2021) which relies on numeric data (Kabir, 2016; Kabir, 2016)in order to gather the numeric data sampling as an act is used to collect data from a specified interest unit (Verma, Gautam, Pandey, Mishra, & Shukla, 2017; Haute, 2021) after collecting the data from specified interest unit then running a statistical results that are derived can be generalized on larger population while saving up resources such as time and money etc. However, there are numerous sampling technique to choose from such as probability sampling techniques and non-probability sample techniques but choosing a sampling techniques also entirely depend on the study requirement, resources a researchers have and research aim (Verma, Gautam, Pandey, Mishra, & Shukla, 2017; Haute, 2021) lastly choosing a sampling size is a debatable as some arguing that larger the sample the smaller well be the margin of error while others are arguing that not too much sample size is good nor too small (Verma, Gautam, Pandey, Mishra, & Shukla, 2017)

Measurement:

To collect the customer background data for that scales such as ordinal, nominal referred by (Brown, 2011)while questions about respondent background was adopted from (Tu & Yang, 2019; Garcia, Saura, Orejuela, & Junior, 2020) and modified according to the study requirements. Most importantly to collect data from customer for the main analysis of the research Likert scale 5 is used upon the reference of (Liu & Lee, 2020; Mohsin, Nawaz, Khan, Shaukat, & Aslam, 2011; Saeed, Hussain, & Riaz, 2011) Below the construct measure and their sources for the main inferential statically analysis is presented below in the table form.

Table 1. Research constructs and their sources for collection of respondent background

No.	Constructs	Items	Sources
1	Attitude towards switching	4	Davis, (1989); Lee et al., 2011; Moon and Kim, (2001); Venkatesh and Davis, (2000)
2	Subjective norm	3	Ndubisi, (2006); Ngafeeson and Gautam, (2021); Bansal and Taylor, (2002)

3	Perceived behavioral control	3	Chu and Chen, (2016); Ndubisi, (2006); Yu and Yu, (2010)
4	Perceived ease of use	5	Lund, (2001)
5	Perceived usefulness	5	Davis, (1989); Lee et al., 2011; Moon and Kim, (2001); Venkatesh and Davis, (2000)
6	Personal Innovativeness	4	Al-Debei, M. M. and E. Al-Lozi (2014)
7	Switching intention	5	Davis, (1989); Lee et al., 2011; Moon and Kim, (2001); Venkatesh and Davis, (2000)

Note that a whole questionnaire which is used to collect data about customer background and data for main statistical analysis is presented in the appendix section.

Samples and procedure

Data is collected via Google forms, Google forms based online questionnaire was sent by using social media platforms such as Facebook, WhatsApp, it was sent across Khyber Pakhtunkhwa a province of Pakistan. A total of 261 responses were received from which only 255 were selected to perform descriptive statistics and inferential statistics. Online questionnaire falls under the category of probability convince sampling (Cornell, 2023) furthermore online questionnaire as a data collection tool allows to save up resources such as time and money. In addition to collect data from females across KP, a culture of KP didn't allow the direct contact with females and consider this is a taboo therefore online questionnaire helps in collection of data from female as well. Therefore, upon the reference of (Cornell, 2023)online questionnaire such as usage of google forms is selected. While the sample size above 200 is selected upon the reference of (Mouloudj, Bouarar, & Stojczew, 2021; Tu & Yang, 2019; Xi Aw & Chong, 2019)

Preliminary Data Analysis

To perform accurately statistical analysis in order to get reliable results, first the data should be free of any missing information, outliers, data should be normal (Montelpare, Read, McComber, Mahar, & Ritchie, 2020) and having reliability (Frost, 2023) Therefore, we have started with the cleaning and screening stage which comprised of missing data analysis, outlier's analysis, normality analysis and reliability analysis (Cronbach Alpha). First the missing data analysis is performed manually on data set any incomplete questionnaire is removed, Secondly to looked for outlier then outlier analysis was performed presented below in this section all the values of standard deviation of data set is below +-3 which is the threshold value refereed by (Sequitin, 2021) thirdly to looked for normality of data, normality analysis was performed which is presented in this section too ala the values of skewness and kurtosis is below the threshold +-2 value referred by (Dr.Heidel, 2023; Watson, 2018) lastly the reliability analysis is performed and presented also in this section below and all the values of the items is above the threshold value .7 referred by (Frost, 2023)

Table 2. Outlier Analysis

	N	ST. D
PEU1	255	1.310
PEU2	255	1.329
PEU3	255	1.316
PEU4	255	1.220
PEU5	255	1.239
PU1	255	1.205
PU2	255	1.168
PU3	255	1.153
PU4	255	1.065
PU5	255	1.282

PI1	255	1.370
PI2	255	1.355
PI3	255	1.162
PI4	255	1.379
SN1	255	1.519
SN2	255	1.498
SN3	255	1.466
PBC1	255	1.297
PBC2	255	1.338
PBC3	255	1.331
ATS1	255	1.280
ATS2	255	1.245
ATS3	255	1.259
ATS4	255	1.236
SI1	255	1.346
SI2	255	1.287
SI3	255	1.277
SI4	255	1.312
SI5	255	1.289

Table 3. Normality Analysis

	N	Skewness	Kurtosis
PEU1	255	-0.367	-0.891
PEU2	255	-0.559	-0.825
PEU3	255	-0.569	-0.770
PEU4	255	-0.584	-0.665
PEU5	255	0.177	-1.035
PU1	255	0.572	-1.276
PU2	255	0.758	-1.314
PU3	255	0.327	-1.094
PU4	255	1.655	-1.500
PU5	255	0.135	-1.162
PI1	255	-0.220	-1.050
PI2	255	-0.516	-0.818
PI3	255	-0.195	-0.805
PI4	255	-0.561	-0.801

SN1	255	-1.284	-0.412
SN2	255	-1.313	-0.358
SN3	255	-1.165	-0.452
PBC1	255	-0.371	-0.816
PBC2	255	0.265	-1.219
PBC3	255	0.341	-1.300
ATS1	255	0.053	-1.058
ATS2	255	0.616	-1.278
ATS3	255	-0.045	-1.007
ATS4	255	-0.004	-1.054
SI1	255	0.801	-1.506
SI2	255	-0.131	-0.972
SI3	255	-0.293	-0.857
SI4	255	-0.142	-0.978
SI5	255	-0.244	-0.918

Table 4. Reliability Analysis

No	Construct	Cronbach value
1	Perceived ease of use	.956
2	Perceived usefulness	.950
3	Personal innovation	.913
4	Subjective norm	.956
5	Perceived behavioral control	.893
6	Attitude towards switching intention	.934
7	Switching intention	.941

After performing the analysis for data cleaning, screening and reliability. Then the need of performing KOM and Bartlett's Test of Sphericity before performing Exploratory Factor Analysis is suggested (Yu & Richardson, 2014) However KMO is used whether the sample are adequate for factor analysis while Bartlett's Test of Sphericity is used to check whether items in all construct are having strong correlation (Surucu, Yikilmaz, & Masiakci, 2022) After looking to the refereed value for KMO below 1 and close to 1 and Bartlett's Test of Sphericity below .5 (Surucu, Yikilmaz, & Masiakci, 2022; Yu & Richardson, 2014) the criteria is passed which is presented below in the form of table .

Table 5. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.962**
Bartlett's Test of Sphericity	**Approx. Chi-Square**	**8023.803**
	df	**378**
	Sig.	**.000**

Exploratory factor analysis is a statistical technique that improves the scale's reliability by findings an unsuitable components for elimination (Watkins, 2018; Yu & Richardson, 2014) EPA gives you the authority to examined the best methods for contemplating your information meanings it allows for more exploration (Arteaga, 2023) Furthermore exploratory factor analysis can be used in areas of social sciences (Surucu, Yikilmaz, & Masiakci, 2022; Arteaga, 2023) health sciences, economics (Surucu, Yikilmaz, & Masiakci, 2022) research projects and marketing related projects (Arteaga, 2023) EFA has following requirement before performing it (Arteaga, 2023) such as research should be of quantitative nature, sample sized above 100 while constructs per item three is recommended (Surucu, Yikilmaz, & Masiakci, 2022) and performing of principal component analysis factor and other analytic rotations analysis when necessary (Arteaga, 2023) However Principal component factor analysis is used when requiring to drive the fewest number of components which account for the most variance in the original variable or variables (Watkins, 2018)

In this study the exploratory factor analysis is comprised of Rotated Component Matrix, Eigenvalues and Communalities. All three such as Eigenvalues, rotated component matrix and communalities is present below in one table.

Table 6. Factor Loadings

Number of items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Communalities
PEU1	0.77							0.859
PEU2	0.84							0.894
PEU3	0.827							0.886
PEU4	0.817							0.837
PEU5	0.764							0.835
PU1		0.769						0.878
PU2		0.777						0.883
PU3		0.775						0.863
PU4		0.673						0.779
PU5		0.805						0.838
PI1					0.578			0.837
PI2					0.702			0.842
PI3					0.761			0.798
PI4					0.567			0.797
SN1			0.881					0.928
SN2			0.87					0.913
SN3			0.875					0.903
PBC1						0.694		0.808
PBC2						0.734		0.877
PBC3						0.656		0.803
ATS1				0.799				0.847
ATS2				0.708				0.861
ATS3				0.768				0.878
ATS4				0.655				0.795
SI1							0.528	0.857
SI2							0.671	0.875

SI3							0.675	0.862
SI4							0.55	0.823
Eigenvalues	16.77	2.144	1.348		1.141	1.122	1.049	
% of Variance Explained	16.933	32.642	1.182 45.222 57.07		67.873	76.95	85.198	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

First looking to the factor loading of each factor starting from PEU, PU, PI, ATS, SN and SI with each item. All items of factors have above .4+ factor loading passing the criteria as refereed by (Samuels, 2017) furthermore no cross loading is encounter but one item SI5 has remove in the process which can't load. Secondly the communalities in the table is passing the threshold value which is greater than .25+ and .4+ referred by (Eaton, Frank, Jhonson, & Willoughby, 2019) Communalities referred to as "a numerical measure of how much an item's variance is being captured by the factor model". Lastly the eigenvalue of all factors is above1 passes the refereed value of (Eaton, Frank, Jhonson, & Willoughby, 2019) Furthermore, eigenvalues represent a measure of the variance that factor accounts for, which may be useful in determining the number of factors we'll need to gather.

Keeping in mind the output results of EFA while choosing PFA as an extraction method and relying on Varimax rotation method, Communalities and Eigenvalues therefore the best representative construct has been known and we are clear to perform the main data analysis such as Multiple regression analysis but before performing multiple regression analysis preliminarily analysis about the assumption of multiple regression first to be met.

Assumption of multiple regression analysis:

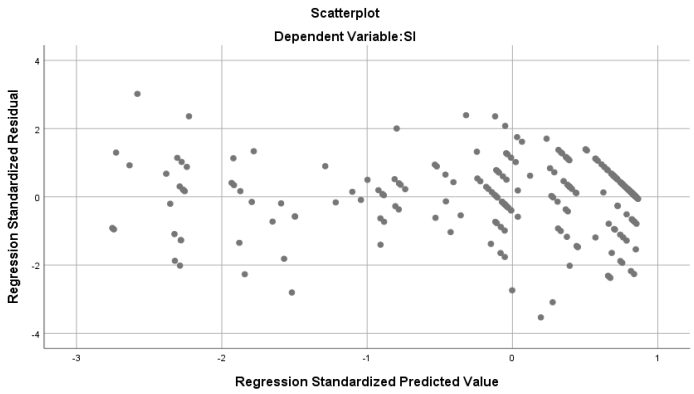
To perform multiple linear regression analysis first criteria is that the independent variables must be more than two (Guler & Uyanık, 2013; Hair, Black, Babin, & Anderson, 2019) Secondly all thenecessary assumption should be satisfies (Osborne & Waters, 2002; Hair, Black, Babin, & Anderson, 2019; Guler & Uyanık, 2013) in in which our case is that the independent variables is more than two and all the necessary assumption is satifies such as data should be normal, having linearity, having homoscedasticity, no multicollinearity, no auto correlation, no multivariate. Below all the assumption with details is explained with outcome.

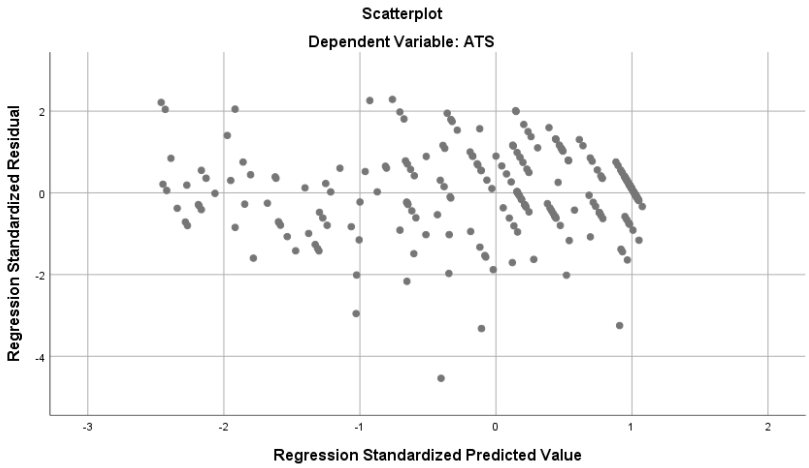
Normality Assumption:

Data set to be considered normal, if it is not having high skewness, kurtosis and possess of less having outliers (Osborne & Waters, 2002) In our case we have a data set which is normal as the evidence with the table presented above, such as normality analysis and outliers analysis table can be seen. Thus, we have satisfied the assumption of normality. However, if we haven't a data set with normality than it would affect the significant of results as refereed by (Osborne & Waters, 2002)

Linearity Assumption:

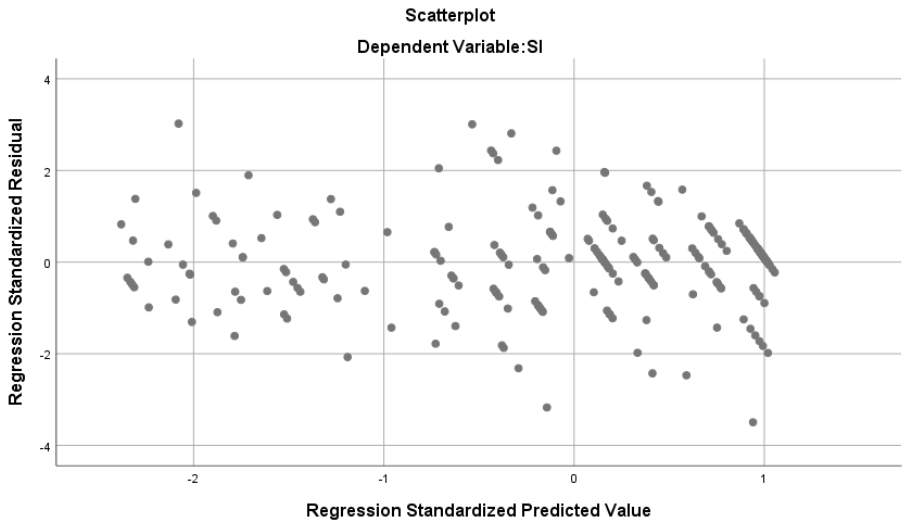
Linearity assumption looks for whether a dependent and independent variable having linear relationship or not (Taylor, 2023; Osborne & Waters, 2002) (In case if it shows that it is non-linear then it can be transformed by applying such method such as square rooting or applying logs on the data set (Mahmood, 2022) To check for linearity scatterplot is refereed (Mahmood, 2022; Taylor, 2023) our scatterplot for dependent variable SI and Independent variable ATS,SN and PBC, so as for the dependent variable ATS and independent variable PEU,PU and PI I linear as according to the (Taylor, 2023; Mahmood, 2022)both the scatterplot is presented below.

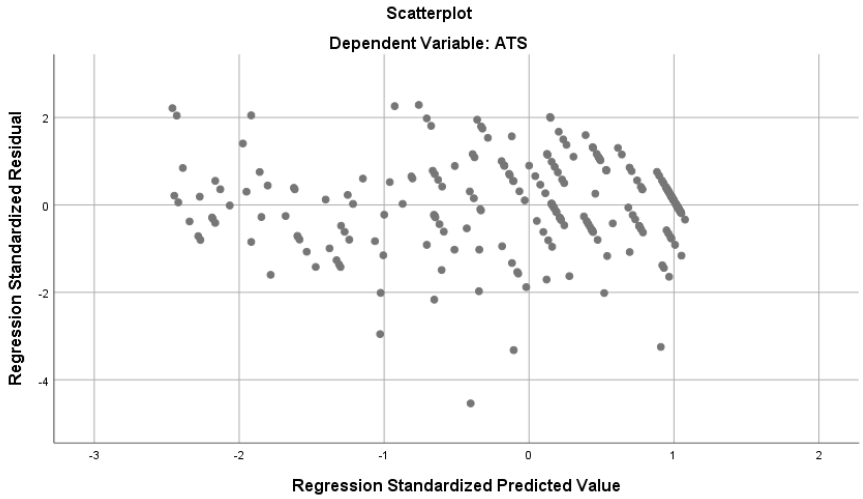




Homoscedasticity Assumption:

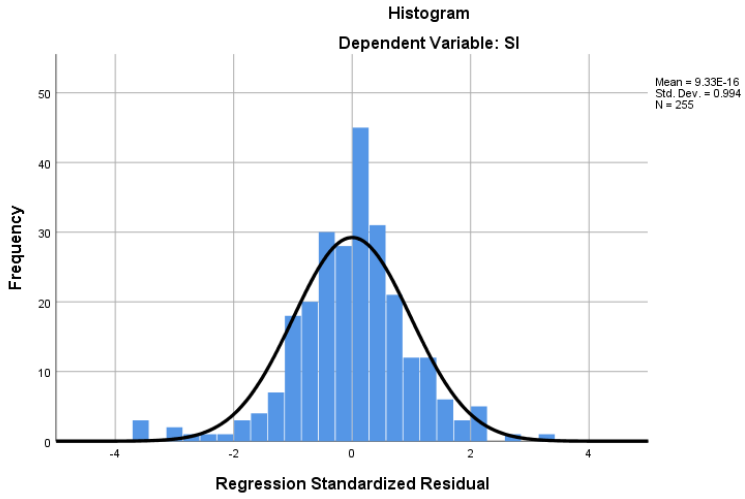
Homoscedasticity assumption requires that data of the linear model should be distributed on each side with equal variation (Mahmood, 2022; Taylor, 2023) this can also be checked from scatterplot (Mahmood, 2022; Taylor, 2023) Below the scatterplot for dependent variable SI and Independent variable ATS, SN, PBC so as for the dependent variable ATS and independent variable PEU, PU PI. Both satisfied the assumption as per the reference of (Osborne & Waters, 2002)

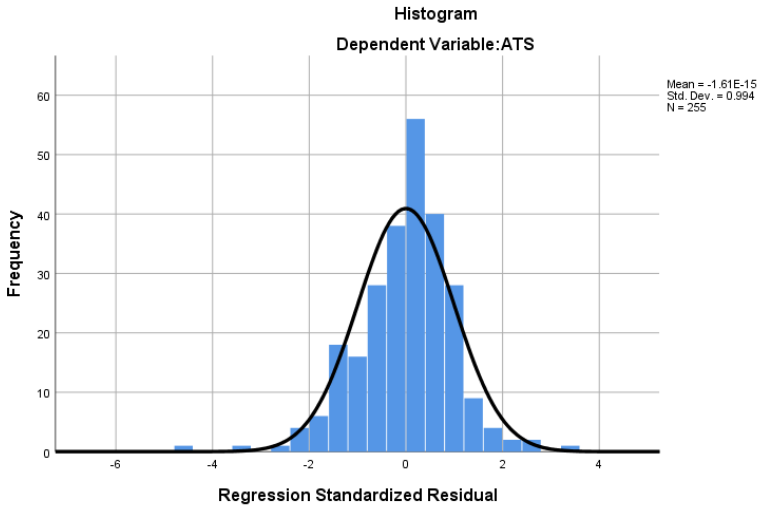




Multivariate assumption:

Multivariate normality assumption is to be satisfied if the residual of the regression is normally distributed (Mahmood, 2022; Taylor, 2023) this can be checked from Histogram (Taylor, 2023) Below the histogram diagram presented for both the Dependent variable SI and ATS which is according to (Oppong & Agbedra, 2016)is satisfactory and satisfied the multivariate assumption.





Multicollinearity assumption:

Independent variables with a less correlation satisfies the assumption of multicollinearity (Bobbitt, 2021) for this a recommended method variance inflation factor is used known as VIF (Bobbitt, 2021; Taylor, 2023)A value of VIF below 5 and greater than 1 is recommended (Bobbitt, 2021) However in our case we have value which passes the threshold value referred by (Bobbitt, 2021) thus this assumption is also satisfies, while below the table possess of VIF value is presented

Table 7. Multicollinearity analysis table

Independent variables	VIF value
ATS	1.953
SN	1.596
PBC	2.064
PEU	2.248
PU	2.205
PI	2.171

No auto correlation Assumption

Multiple regression analysis assume that the observation should be independent from one another (Bobbitt, 2021; Taylor, 2023) to check this assumption Durbin Watson statistic is used (Bobbitt, 2021; Taylor, 2023) In our case we have a value for both the sources of Cat model and TBP between the range of 15 and 2.5 which is recommended (Zach, 2021)Below the table is presented.

Table 8. Durbin Watson Statistics

ATS	
SN	1.953
PBC	
PEU	
PU	2.160
PI	

All the necessary assumption is satisfied as refereed by (Guler & Uyanık, 2013; Hair, Black, Babin, & Anderson, 2019) after which we have performed multiple regression analysis presented below in the results section.

RESULT AND DISCUSSION

Table 9. Descriptive statistics

Demographic variables	No.	(%)
Gender		
Male	160	62.7
Female	95	37.3
Age (years)		
18-30	181	71
30-40	48	18.8
41-50	22	8.6
51-60	4	1.6
60 and above	0	0
Location		

Bannu Division	8	3.1
D.I Khan Division	2	.8
Hazara Division	7	2.7
Kohat Division	6	2.4
Malakand Division	78	30.6
Mardan Division	85	33.3
Peshawar Division	69	27.1
Education		
Matric	6	2.4
Intermediate	22	8.6
Diploma	28	11
Bachelor Degree	117	45.9
Master Degree	75	29.4
Others	7	2.7
Occupation		
Student	120	47.1
Professional	56	22
Self-Employed	5	2
Government	46	18
Servant	1	4
Retired	27	10.6
Others	0	0
Switching Among High-Tech Electronic Products		
Smartphone	164	64.3
Laptop	33	12.9
Smart TV	3	1.2
Smart Appliances	13	5.1
Smart Watches	4	1.6
others	7	2.7

Looking into the descriptive statistic table, firstly on the basis of gender the most response has received from Male. Secondly On the basis of age most responses received from individual who are between 18 to 30 years of age. Thirdly on the basis of location responses from Mardan Division was the most. Further on the basis of education responses from the bachelor degree tops the category. On the basis of occupation respondent who are student has tops the group. Finally, and most important respondent has express their opinion about switching among high-tech electronic products and most likable switch product would be Smartphone category

Inferential statistics (Main Analysis results)

In the first stage we have performed multiple regression analysis by taking switching intention(SI) as a dependent variable and independent variable ATS, SN and PBC. While in the second stage we have taken attitude towards switching intention as a depended t variable while PEU, PU and PI is an independent variable. Below both the stages of multiple regression analysis is presented.

First Stage:

Table 10. Regression coefficients Analysis for the first stage is presented below

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.225	.158		1.426	.155		
	ATS	.446	.050	.429	8.884	.000	.512	1.953
	SN	.149	.036	.179	4.096	.000	.626	1.596
	PBC	.351	.049	.353	7.104	.000	.484	2.064

Table 11. Regression Coefficients of the first stage

Dependent Variable: SI **R**

Square value= .7

Looking to table II, values of the significance Colum for all the independent variables that is ATS, SN an PBC is below .5 meaning that ATS, SN and PBC has a relation with switching intention among high-tech electronic products while the standardized coefficients (Beta) values is positive which further outlies that the relation is positive. Hence our Hypothecs H1, H2 and H3 are accepted.

Second Stage:

Regression coefficient analysis result for the second stage.

Table 12. Regression Coefficients for the second stage

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.587	.186		3.167	.002		
	PEU	.211	.058	.218	3.658	.000	.445	2.248
	PU	.308	.063	.289	4.899	.000	.454	2.205
	PI	.361	.057	.370	6.328	.000	.461	2.171

Dependent Variable: ATS **R**

Square value= .605

Looking to table III, values of the significance Colum for all the independent variables that is PEU, PU an PI is below .5 meaning that PEU, PU and PI has a relation with switching intention among high-tech electronic products while the standardized coefficients (Beta) values is positive which further outlies that the relation is positive. Hence our Hypothecs H3, H4 and H5 are accepted.

Main Analysis Results with Discussion:

H1 is accepted meaning that the more customer attitudes towards a particular high-tech electronic product is increases the more likely his switching intention will be increases The result for this hypothesis also in line with (Garcia, Saura, Orejuela, & Junior, 2020; Mouloudj, Bouarar, & Stojczew, 2021; Msaed, Al-kwifi, & Ahmed, 2017)

H2 Result means that customer of the KP Province of Pakistan will likely be influenced by their family, friends when thinking about switching to a particular high-tech electronic products This result also in line with (Tu & Yang, 2019; Garcia, Saura, Orejuela, & Junior, 2020) and with (Garcia, Saura, Orejuela, & Junior, 2020) that countries with a collectivist culture individual there will likely be influences by their internal groups such as family members and friends

The result of H3 indicate a positive relation between SI and PBC which suggest that when customers have the external resources such as time, money then they will be likely to perform switching intention among-high-tech electronic products. This claim of H3 also supported by various studies (Garcia, Saura, Orejuela, & Junior, 2020; Tu & Yang, 2019)

H4 claims that when customer perceived that a new high-tech product is more prone to be use and learn easily then their attitude towards switching intention about that particular product will be

likely increases. Following referred studies have supported the claim (Tu & Yang, 2019; Alaeddin, Rana, Zainudin, & Kamarudin, 2018)

H5: Positive relationship between perceived useful and attitudes towards switching intention means that when a particular high-tech electronic product is perceived by a customer well in terms of providing more utilitarian benefits than the previous one then their attitudes will be positively influences in that case. This outcome of H5 is also in line with the previous researches (Garcia, Saura, Orejuela, & Junior, 2020; Pourabedin, Foon, Chatterjee, & Ho, 2016; Msaed, Al-kwifi, & Ahmed, 2017)

Finally, the results of H6 indicate that customer who possess and having a positive personal innovativeness trait will always be in search of new high-tech electronic product meaning that their attitudes towards switching intention will be influences if they have a positive personal innovations trait. This result too line with (Pourabedin, Foon, Chatterjee, & Ho, 2016)

Research Contribution:

Theoretically this study has contributed by using a comprehensive model based on theory of planned behavior to know switching intention among high-tech electronic products and consumer acceptance of technology model to know attitudes towards switching intention among high-tech electronic products in a developing country Pakistan. In addition, this study has also theoretically contributed by extended the high-tech electronic product category. Practically it contributes that customer of the KP Province of Pakistan well likely be influenced if they perceived that a particular product is easy to be used, learn, provider better utility and possess of technological innovation then their attitudes towards switching intention will be positively influences therefore practitioner should improvise strategy to make better high-tech products in order to encounter the attitude towards switching intention.

Furthermore, customer of the KP province of Pakistan attitudes positively changes when they evaluate that a particular high-tech product is better, if can arrange external resources such as time and money and can be pursued by family members and friends than their switching intention will be positively influences therefore practitioner should look for this when improving strategy to stop customer from switching.

Recommendations:

- Knowing behavioral intention or actual switching behavior the used of comprehensive model would provide more wider view and results (Msaed, Al-kwifi, & Ahmed, 2017)
- Knowing attitudes towards switching intention by using technological aspect is more appropriate if one is performing the study in high-tech sector (Msaed, Al-kwifi, & Ahmed, 2017)
- When performing research keeping in mind what sort of a culture country posses (Msaed, Al-kwifi, & Ahmed, 2017)

Limitations:

- Lack of resources such as time, money
- Result is based on a sample Size of 255, higher sample size may have change the result view of the study.
- Model is based on total 7 variables, including other variable may change the perspective of model results.
- Only high-tech electronic and automobile car products is included in this study.
- Technology acceptance model and Theory of planned behavior is used, incorporating other model and theories may produce more extended version of model.
- This study hasn't included the actual switching behavior. A comparison of actual switching behavior and switching intention is also a limitation.
- This study hasn't known the mediating effect of attitude towards switching intention and switching intention.

For Future Research:

- Researcher and practitioners should increase sample sizes by incorporation other regional areas of Pakistan such as Punjab, Sindh, Gilgit Baltistan, Balochistan, and nominally self-governing- entity such as Azad Kashmir.
- This study hasn't performed the mediating effect of switching intention and actual switching behavior therefore future researcher and practitioner could look unto it in the high-tech sector
- Addition of further variables in TBP and CAT could provider more different results and aspects.

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