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Exploring the Pathways to Digital Education: The Roles of Satisfaction with Learning and Impulsive Behavior as Predictors of Openness and Attitude towards Digital Applications

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Research article

Exploring the Pathways to Digital Education: The Roles of Satisfaction with Learning and Impulsive Behavior as Predictors of Openness and Attitude towards Digital Applications

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Abstract

The present research aims to investigate the impact of satisfaction with learning, risk-taking behavior, impulsive buying behavior, attitudes, and openness toward adopting new applications, on 296 respondents. The study's results allows the significant highlighting of the relationship between satisfaction with learning and attitudes toward digital applications. Individuals exhibiting higher satisfaction with their learning experiences tended to display a slightly more favourable attitude towards adopting applications. Linear regression analyses revealed significant predictive factors, underscoring the influence of individual characteristics on attitudes and openness towards applications. Of particular importance were impulsive behaviour and satisfaction with learning, which emerged as consistent predictors, emphasizing the role of personal traits and experiences in shaping perceptions of digital applications. The findings contribute to the existing body of knowledge and hold implications for educational strategies, consumer behaviour, and technology adoption.

Keywords:
education; learning; impulsive buying; digital applications.

Zusammenfasung

Die aktuelle Studie zielt darauf ab, die Rolle der Zufriedenheit mit dem Lernen, der Risikobereitschaft, des impulsiven Kaufverhaltens, der Einstellungen und der Offenheit gegenüber der Einführung neuer Anwendungen bei 296 Befragten zu untersuchen. Die Ergebnisse der Studie liefern wertvolle Einblicke in die Beziehung zwischen der Zufriedenheit mit dem Lernen und der Einstellung zu digitalen Anwendungen. Personen, die mit ihren Lernerfahrungen zufriedener waren, neigten dazu, eine etwas positivere Einstellung zur Einführung von Anwendungen zu zeigen. Lineare Regressionsanalysen ergaben signifikante prädiktive Faktoren, die den Einfluss individueller Merkmale auf die Einstellung und Offenheit gegenüber Anwendungen unterstreichen. Von besonderer Bedeutung waren impulsives Verhalten und Zufriedenheit mit dem Lernen, die sich als konsistente Prädiktoren herausstellten und die Rolle persönlicher Eigenschaften und Erfahrungen bei der Wahrnehmung digitaler Anwendungen betonten. Die Ergebnisse tragen zum bestehenden Wissensstand bei und haben Auswirkungen auf Bildungsstrategien, Verbraucherverhalten und Technologieübernahme.

Schlüsselworte:
Bildung; Lernen; impulsiver Kauf; digitale Anwendungen.

1. Theoretical foundation

1.1. Learning

Learning is one of the most important aspects of human life for each of us. The complexity and importance of this process determines its approach from a pedagogical but also a psychological perspective. The achievement and improvement of each individual's personality expresses the deep emphasis of the social process and phenomenon called learning. The concept of learning involves change in behavior, assimilation of information and knowledge, and the development of affective and attitudinal states (Schaffer, 2005).

The current educational space represents a psychosocial context in which actors involved in the learning process meet in order to go through and achieve common cognitive, affective and behavioral objectives. The pace and frequency of learning for each individual are significantly influenced by their personality type, the understanding of each individual's needs and personal style, all of which represent an absolutely necessary element in the instructional-educational approach. In order to achieve efficiency in the learning process, each individual must be supported, and appreciated for every effort they allocate in learning activities.

In a broad sense, learning involves the production of a change in behavior through the accumulation of individual experiences and their adaptation to one's own attitudinal and behavioral system (Capretz,

2006). Learning is presented as a psycho-pedagogical process of adapting the body to the external demands of the environment, aiming at a harmonious development of the individual, the emergence of new capacities and skills and the construction of new experiences that can support the person in optimizing relationships with those around him (Ryan & Deci, 2000; Șițoiu & Pânișoară, 2023).

Recent research on the learning phenomenon has highlighted another side of it, that of seeing learning as a change and personal development, with a major role on the use and understanding of information in order to develop some social skills (Felder & Brent, 2005).

1.2. Attitude towards digital applications

The attitude of consumers towards the use of online applications is open to this system. Valkenburg and Taylor (2018) indicate that a large part of consumers have a stronger intention to use applications if they offer an easy-to-use mechanism. Their research demonstrates that those applications that allow consumers to optimally interacts and creates an opening to the product content at this moment, manifesting a strong impact on the consumer who uses that application for efficient time management.

Selim (2007), the consumer's attitude to use online applications is also related to also related to the previous information held by him in the use of technology. On the other hand, this consumer behavior towards technology is also important to boost their motivation and interest in online shopping (Yang & Lin, 2010).

When we discuss the progress of technology, it is necessary to signal its significance on the progress of the quality of life in terms of consumer behavior. The appearance of a multitude of digital software is a response to the consumer's need to improve time management and well-being while shopping. Studies in the fields of product management and consumer psychology have tried to develop a path of access as natural as possible between the consumer profile and the product sales sites. (Valkenburg & Taylor, 2018)

The online shopping process requires a certain indicator of digital independence and motivation from the individual in terms of online accessibility, but this indicator is also necessary to be found among employees (Warren, 2007).

The fast dynamism of technology leads to finding it in all social fields, so that it makes its presence felt in many daily activities of a person. (Rawashdeh, 2015).

1.3. Impulsive and risk-taking behaviors

Impulsive behavior reflects a tendency to act without long-term thought, an insensitivity to consequences, and an inability to inhibit certain behaviors deemed inappropriate (Awhile & Tajamul, 2022; Reynolds et al., 2006). Although most often impulse buying has a strong link to the emotional dimension, there is also a cognitive component that manifests itself in the context of choosing short-term benefits despite the potential negative and long-term consequences (Shahjehan et al., 2012). This leads to significant consequences both in terms of personal finances and in terms of emotional state or general satisfaction.

Several studies have shown that certain individual traits can influence impulsive buying behavior, in that people with high levels of extraversion, neuroticism, openness to new experiences have a greater tendency to engage in impulsive buying (Farid & Ali, 2018; Shahjehan et al., 2012; Thompson & Prendergast, 2015). Moreover, the easy access to the internet and the much faster opportunity to buy which is facilitated by online commerce predisposes to impulsive buying behavior (Berceanu et al., 2023; Lim et al., 2017).

The study of Herabadi et al. (2009) showed that the shopping experience is different for impulsive buyers than for non-impulsive buyers. On an emotional level, impulsive buyers are determined in their momentary choices by emotions such as pleasure and excitement. At the cognitive level choices are determined by hedonic rather than utilitarian reasoning (Herabadi et al., 2009).

In relation to openness to the use of some digital apps, although Billieux et al. (2015) study did not directly investigate the concept of openness to the use of digital apps, it implies that people's interactions with mobile phones may differ significantly. Some people may use their phones excessively and problematically due to impulsivity-related factors and may be more prone to impulsive behaviors, which could lead them to engage in excessive and problematic mobile phone use. The study of Awhile & Tajamul (2022) investigated the relationship between impulsiveness and digital wallet usage, which revealed a notable association between the two variables. Despite its specific focus on a particular aspect of impulsive behavior and digital technology, the study implies that individuals inclined towards impulsivity

might display a greater propensity for utilizing digital wallets in making impulsive purchases.

A key concept that relates to consumer behavior is that of choice, which involves taking a risk. Since the outcome of a choice can usually only be known in the future, the consumer is faced with uncertainty or risk. The perception of risk in a given situation is a feature of consumer behavior, as risk can be perceived as having negative consequences or causing anxiety (Taylor, 1974). The perception of the degree of risk in a given situation depends on a number of personal characteristics that may affect how the person chooses to cope with the risk (Taylor, 1974). There is no research that directly highlights the link between risk-taking and openness to app use, but there are some lines of research linking this variable to impulsive buying (Palan et al., 2011). Given that apps facilitate access to immediate purchase of products which facilitates impulsive buying, there is a possibility that one of the factors influencing app use is risk-taking.

2. Research methodology

2.1. Hypotheses

Starting from the studies in the field and the literature on the subject of this study, the following hypotheses were identified:

H1. *There is a correlation between satisfaction with learning and the attitude and openness to digital applications*

H1a. *There is a correlation between satisfaction with learning and the attitude to applications*

H1b. *There is a correlation between satisfaction with learning and the openness to digital applications*

H2a. *Impulsive behaviour, satisfaction with learning, and risk-taking behaviour are predictors for the attitude towards applications*

H2b. *Impulsive behaviour, satisfaction with learning, and risk are predictors for the openness to applications*

2.2. Participants

The data used in this research were collected between March 2022 and December 2022. The present research is based on a number of 296 participants. The demographics of the sample are shown in the figure below.

Table 1. Sociodemographic Characteristics of Participants

Demographic characteristics	Total sample	
	n	%
Gender		
Female	243	82.1
Male	51	17.2
Other	2	0.6
Age		
Less than 20 years	105	35.5
21–30 years	91	30.7
31–40 years	52	17.6
41–50 years	34	11.5
51–60 years	13	4.4
More than 60 years	1	0.3
Education		
Higher education	193	65.8
Lower education	98	33.5
Specialty courses	2	0.7

Note. N = 296

2.3. Procedure

The method used in this research is the survey based on questionnaires, these being built using Google Forms. The respondents' participation in the present study was with their consent. The demographic profile (indicators such as gender, age and level of education) was made for all participants. The participants were given a short instruction, being assured of confidentiality. The written agreement on informed consent is presented in form no. 94/08.12.2021 (Appendix A)

2.4. Measures

The research incorporated measures that encompassed four key aspects: satisfaction with learning (as part of QOLI questionnaire), risk-taking

behavior, impulsive buying behavior and attitudes and openness towards adopting new applications.

2.4.1. Quality of life

The assessment of quality of life in this research was conducted through the utilization of the QOLI® questionnaire (Test Central, 2011). This questionnaire comprises 16 life areas, categorized into four main groups as follows: (1) Primary Needs: Health, self-esteem, goals-and-values, and financial well-being. (2) Activities—Occupations/Hobbies: Work, play, learning, creativity, and helping others. (3) Relationships: Love, friendships, relationships with children, and interactions with relatives. (4) Environment: Home, neighborhood, and community.

Quality of life is defined as the subjective assessment of the extent to which an individual's needs, goals, and desires have been fulfilled and is also perceived as the disparity between one's aspirations and their actual achievements (Frisch, 1994). For instance, participants were asked questions like "How important is learning for your happiness?" and "How satisfied are you with the learning in your life?", with similar adaptations for other life areas. To ensure its applicability to the Romanian population, the questionnaire was validated through Test Central. The internal reliability of the QOLI® questionnaire has been demonstrated to be very strong, with a Cronbach's α value of 0.81 (M = 2.40, SD = 1.38).

2.4.2. Impulsive buying behavior

Impulsive buying behavior was measured using the Impulsive Buying Scale (Karbasivar & Yarahmadi, 2011). The scale consists of 7 items with examples such as “I buy only what is on my shopping list” or “I am actually an impulse shopper”. After the initial translation of items into Romanian, they underwent verification by professional translators to ensure the preservation of their intended meaning. The scale has shown moderate internal reliability, evidenced by a Cronbach's α value of .59 (M = 2.86, SD = .66).

2.4.3. Risk-taking behavior

To gauge risk-taking behavior, we employed the Risk-taking scale from IPIP (International Personality Item Pool). The Romanian version of this scale was obtained from the Research Central platform (http://researchcentral.ro/). The scale comprises 10 items, including examples such as "Enjoy being reckless" and "Would never make a high-risk investment." Additionally, the internal reliability of the scale was found to be robust, with a Cronbach's α value of 0.82 (M = 2.46, SD = .07).

2.4.4. Attitude and openness towards adopting new applications

Attitude and openness towards adopting new applications were measured through two 6-Likert questions as the following:

- The consumers ’attitude towards online applications was measured using the 6-point Likert question: “What is your attitude regarding the usage of online applications?”.
- The openness towards adopting new applications was measured using the 6-point Likert question: “If a specific brand will develop a new app, how open are you to use it?”

The questions assessing the consumers ’attitudes and openness to applications underwent pretesting in an earlier phase, and subsequently, they were refined based on the initial analysis.

4. Results

H1. *There is a correlation between satisfaction with learning and the attitude and openness to digital applications.*

H1a. *There is a correlation between satisfaction with learning and the attitude to applications*

In pursuit of assessing the association between satisfaction with the learning experience and attitudes towards applications, we conducted a Pearson Correlation analysis. The results of this analysis revealed a statistically significant, albeit small, correlation between the two variables ($r = .13$, $p < .05$). This finding indicates that there is a positive relationship between the degree of satisfaction with the learning process and the attitude towards using applications, albeit of modest strength. In other words, as the satisfaction with the learning experience increases, there is a tendency for a slightly more favorable attitude towards the adoption of applications. However, it is essential to recognize that the magnitude of this relationship is relatively weak, suggesting that other factors may also contribute significantly to shaping attitudes towards applications.

H1b. *There is a correlation between satisfaction with learning and the openness to digital applications.*

In the context of this study, we again employed a Pearson Correlation analysis to examine the relationship between individuals' satisfaction with

their learning experience and their willingness to adopt applications created by brands. The findings indicate a statistically significant yet modest correlation between these two variables ($r = .15$, $p < .05$). This outcome suggests that there is a positive association between satisfaction with the learning process and the respondents' openness to using applications developed by brands, albeit of a relatively weak magnitude. In essence, as satisfaction with the learning experience increases, there is a tendency for a slightly more favorable attitude towards embracing applications offered by brands. However, it is important to acknowledge that factors beyond this correlation might also play a substantial role in influencing respondents' attitudes towards brand-developed applications.

Results for the two hypotheses are presented in Table 2.

Table 2. Descriptive Statistics and Correlations between satisfaction with learning, attitude towards applications and openness to applications

Variable	*n*	*M*	*SD*	1	2	3
1. SWL	296	2.89	2.58	—		
2. APP ATT	2964	5.23	1.11	.13*	—	
3. APP OPEN	296	4.04	1.16	.15*	.66***	—

Notes: ***p < .001, **p < .01, *p < .05

SWL - Satisfaction with learning, APP ATT - Attitude towards applications,

APP OPEN - Openness to brand applications

H2a. *Impulsive behaviour, satisfaction with learning, and risk-taking behaviour are predictors for the attitude towards applications*

To assess the H2a hypothesis, a Linear Regression analysis was conducted. In this particular investigation, the dependent or outcome variable was the attitude towards applications, while the independent variables included impulsive behavior, satisfaction with learning, and risk-taking behavior. The results of this analysis indicated that only impulsive behavior ($\beta = .36$, $p < .01$) and satisfaction with learning ($\beta = .06$, $p < .06$) emerged as statistically significant predictors for fostering a positive attitude towards applications. In other words, individuals' inclination towards impulsive behavior and their level of satisfaction with the learning experience were found to be significant factors in predicting a favorable and positive attitude towards applications. However, it should be noted that risk did not demonstrate a statistically significant predictive relationship in relation to the attitude towards applications in this particular analysis.

H2b. *Impulsive behaviour, satisfaction with learning, and risk are predictors for the openness to applications*

To investigate the H2b hypothesis, a Linear Regression analysis was conducted. In this analysis, the openness to using applications served as the dependent or outcome variable, while impulsive behavior, satisfaction with learning, and risk were considered the independent variables. The findings revealed that among these variables, only impulsive behavior ($\beta = .34$, $p < .01$) and satisfaction with learning ($\beta = .05$, $p < .05$) demonstrated significant predictive capabilities concerning the willingness to adopt new applications developed by brands. In other words, individuals' tendencies towards impulsive behavior and their level of satisfaction with the learning experience emerged as meaningful factors influencing their openness to embracing brand-developed applications. However, it is important to note that risk did not exhibit a statistically significant predictive relationship in this particular analysis.

Table 3 shows the results obtained for H2a and H2B hypotheses.

Table 3. Predictors of attitudes towards applications and openness to applications

Outcome	Predictors	Estimate	*SE*	95% CI		*p*
				LL	*UL*	
APP ATT	IMPULSE	.34**	.12	.11	.57	< .01
	SWL	.05*	.02	.004	.10	< .05
	RISK	.01	.01	-.01	.03	.17
APP OPEN	IMPULSE	.36**	.12	.12	.11	< .01
	SWL	.06*	.03	.01	.11	< .05
	RISK	.01	.01	-.01	.03	.23

Notes: **p < .01, *p < .05

SWL - Satisfaction with learning, APP ATT - Attitude towards applications, APP OPEN - Openness to brand applications, IMPULSE - Impulsive behavior, RISK - Risk-taking behavior.

6. Conclusions

The study's results provide valuable insights into the relationship between satisfaction with learning and attitudes toward digital applications. The positive correlation suggests that individuals who are more satisfied with their learning experiences tend to have a slightly more favorable attitude toward adopting applications. The predictive factors identified in the linear regression analyses highlight the importance of individual characteristics in influencing attitudes and openness toward applications. Impulsive behavior and satisfaction with learning emerged as consistent predictors, suggesting that personal traits and experiences play a role in shaping individuals' perceptions of digital applications. It is worth considering how impulsive behavior might drive individuals to explore and adopt new technologies, while satisfaction with learning could instill confidence and a positive perception of technology's benefits. Nonetheless, the results also indicate that risk-taking behavior did not demonstrate a significant predictive relationship with attitudes or openness toward applications, which means that other factors may be more influential in shaping individuals' decisions regarding the adoption of digital applications.

In conclusion, these results lead to a deep understanding of the factors that have a strong impact on behavior and attitudes towards digital applications. Even so, future research is needed to investigate the influence of other factors that influence changing attitudes toward technology internalization. This understanding can have implications for educational practices and technology design, aiming to improve user experience and increase the adoption of digital applications in different domains.

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Denisa Berceanu is a PhD student in Psychology and assistant professor at the Faculty of Psychology and Educational Sciences, University of Bucharest, where she teaches Learning Psychology and Managerial Psychology at the BA level (years 2 and 3 of study). She also holds the position of Principal Researcher in Consumer Neuroscience at Buyer Brain, a Neuromarketing and Consumer Neuroscience company. The doctoral thesis in the field of psychology, focuses on the theme of age and mental health. Denisa is also Assistant Editor at Doctoral Studies. Psychology and Educational Sciences, the official journal of the Doctoral School of Psychology and Educational Sciences, University of Bucharest, Romania. Over time, he has been a member and coordinated various research and advertising projects for clients in various fields.

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