Assessment of A Mobile Educational Coaching App:
Exploring Adoption Patterns and Barriers in France

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ABSTRACT

This article explores which antecedents explain intentions to adopt a mobile coaching app. To that end, this study describes a coaching service designed to guide/encourage students throughout their studies in order to validate a new model of planned behavior based on the Technology Acceptance Model and the Goal-Directed Behavioral theory. The methodology included a short qualitative study and an online survey to examine the theoretical model which is based on scales tested in previous studies. The convenience sample is composed of students (Bachelor and Master/MBA) with the results analyzed using structural equation modelling to test the proposed model's causal structure. The results show different adoption patterns by gender and type of school.

KEYWORDS

Coaching App, Desires, e-Coaching, Emotions, Goal Directed Behavior, Mobile Coaching Services, TAM, Technology Based Self-Services

INTRODUCTION

Mobile app use has increased significantly (Chen, Meserv & Gillenson, 2012) since the introduction of the Wireless Application Protocol (WAP) in Europe and iMode in Japan at the end of the 20th century, and the release of the BlackBerry smartphone in the US in 2002. These apps allow users to trade stocks, obtain paperless store coupons, receive reminders for to do lists, and use GPS to find arrival and departure times for public transportation (Chen et al., 2012).

Information-Oriented Mobile Applications (IOMA) are programs offering users timely, personalized, and/or localized information on mobile devices (Chen et al., 2012). Consumer adoption of these mobile apps is forecast to grow significantly as mobile providers open their platforms to third-party applications (Malhotra & Segars, 2005; Chen et al., 2012). IOMAs require a smartphone connected to mobile Internet or local area wireless (Wi-Fi).

There is a large body of research on innovation acceptance patterns (Davis, 1989; Davis, Baggozi & Warshaw, 1989; Venkatesh & Morris, 2000; Venkatesh et al., 2003), though there is little knowledge of how consumers adopt technology-based self-services (TBSSs) (Reinders, Dabholkar & Frambach, 2008; Claudy, Garcia & O'Driscoll, 2015). Reinders, Dabholkar and Frambach (2008) show that offering interaction with an employee as a fall back option offsets the negative consequences of forced use of a TBSS. Claudy, Garcia, and O'Driscoll (2015) confirm that reasons for and against adoption are not just opposites of each other but they are qualitatively distinct constructs which

influence consumers' adoption decisions in different ways. The marketing field investigates the factors behind consumer intentions to use TBSSs. These services and factors are likely to grow as technology advances (Taylor & Strutton, 2010; Shuster, Drennan & Lings, 2013), especially since the traditional attitudinal models (Dabholkar & Bagozzi, 2002; Curan & Meuter, 2005) fail to recognize that most high-involvement behaviors, such as using a credence service, are means to achieve goals (Schuster et al., 2013).

Credence services are professional services requiring specialized knowledge to produce and are difficult for consumers to evaluate, even after trial (Ostrom & Iacobucci, 1995; Schuster et al., 2013). These models also fail to account for the impact of pre-factual appraisals of outcomes, which are less concrete in credence services (Ostrom & Iacobucci, 1995; Schuster et al., 2013). This study addresses these gaps using a model inspired by the model of goal-directed behavior (MGB) (Perugini & Bagozzi, 2001), to overcome these shortcomings (Schuster et al., 2013), and the technology acceptance model (TAM) (Davis, 1989), to examine consumer acceptance of a particular TBSS – a coaching app to help students succeed in their studies.

Success in higher education is important for getting a good first job, for evolving in or keeping one's job. Undergraduate or graduate participation in education programs is highly competitive (Davidenkoff, 2014). Therefore, coaching from professors and pedagogical directors is quite necessary, and the development of TBSS enables a potentially useful app-based coaching system designed especially for students. Academic institutions have widely adopted e-learning. Blended learning combines web-based e-learning platforms with classroom teaching (Koutsabasis, Stavrakis, Spyrou & Darzentas, 2011). However, there are no existing coaching apps for students. Asynchronous e-learning increases communication between students and instructors, but this is not exactly coaching.

This study contributes to the literature by building on existing knowledge of consumer decision making. It also broadens the current understanding of consumer acceptance of emerging TBSS using a model based on the TAM and the MGB to overcome the limitations of current attitudinal approaches, in addition to providing evidence for emotions' usefulness in TBSS acceptance. The principal objective of this study is to identify drivers fostering the intention to adopt such a coaching app in France. The article is structured as follows. Firstly, the context of the specific French higher education ecosystem and theoretical framework are presented and after that the model of the intention to adopt the mobile coaching service is introduced. The methodology is then described along with the operationalization of the underlying hypotheses. After reporting the main findings, theoretical and managerial implications, the paper concludes by considering limitations and avenues for future research.

CONTEXT AND THEORETICAL FRAMEWORK

Context

The French Higher Education Ecosystem

France's higher education system has two main types of institutions: Universities and Grandes Ecoles (mainly Business and Engineering Schools). Universities are public and very inexpensive, with open admissions that require a *baccalauréat.* Most Business Schools require *baccalauréat* too, plus a contest, are expensive and provide students with coaching from faculty and staff.

Twenty percent of students are currently in a private Higher Education organization in France and private superior education accounts for 80% of the increase in the number of students over the last ten years (Davidenkoff, 2014).

Many organizations in the French High Education system currently use e-learning tools, blended learning, and massively open online courses (MOOCs). In this context, collaborative learning, an active process where learners enter a joint activity and adopt common goals to perform tasks or solve problems emerges naturally. A meta-analysis showed that collaborative learning effectively increases

learning and students' satisfaction levels (Arbore et al., 2014).). But, there is more peer pressure for collaborative learning in higher university classes or in Grandes Ecoles than in lower university classes

However, success in higher education studies requires a lot of work, discipline, perseverance, and motivation. Thus, support from family, peers, higher education staff/faculty, or independent coaches appear to have its utility.

Online Coaching or e-Coaching

Coaching originally referred to sports training, where the coach is usually a former athlete with a long career in the discipline. Most professional athletes have coaches who use experience and charisma to help the athlete, who in turn recognizes the need for a coach to improve performance and results. Professional coaching emerged in the corporate world in the 1990s to help employees with professional development and skills (Moral & Angel, 2014). Life or personal coaching aims to guide a person towards a personal or a life goal (Moral & Angel, 2014). Coaching is commonly a trade service that people pay for, while personal mentoring is generally a non-transactional service.

Recent technological developments have spurred digitalization of complex credence services (Schuster et al., 2013), including monitoring apps such as Google Now, Siri, and Cortana. However, as of this writing, there is no specific coaching app in France to help students during their undergraduate or graduate studies. It is unclear which type of students would most readily adopt the app, business schools' students or public university ones.

Consumer Acceptance of Technology-Based Self Services

Researchers have investigated some of the challenges facing mobile providers and consumers (Malhotra & Segars, 2005; Karaiskos et al., 2008; Chen et al., 2012). Perugini and Bagozzi (2001) and Karaiskos et al. (2008) studied the inhibitors and drivers of mobile data services or apps using their own model and Triandis's theoretical model rather than the TAM (Davis, 1989), which includes the effect as a separate determinant of intention.

Cauchy et al. (2015) used a car sharing service adoption pattern to demonstrate that anti-adoption factors are distinct constructs that do not constitute mere opposites of reasons for adoption (i.e., relative advantage). Consumers often weigh anti-adoption factors disproportionately higher than potential benefits (Gourville, 2006). These authors argue that consumers' beliefs about innovation characteristics are not necessarily salient factors in their adoption decisions. Moreover, managers should focus instead on context-specific reasons for and, more importantly, against adopting innovations.

This study focuses on identifying drivers fostering the intention to adopt a coaching app. A key barrier to new technology adoption is getting customers to actually try it for the first time (Meuter et al., 2005). However, a trial does not directly imply adoption; the adoption of an innovation is either the initial or repeated purchase of the innovation, depending on the context (Cacho-Elizondo, Shahidi & Tossan, 2013). Frequent-purchase products require repurchases to consider a product adopted, usually applying a threshold of three purchases (Cestre, 1996). An app can be considered adopted when it is installed on the smartphone, although this does not guarantee that the app is actually used.

Theoretical Framework

Attitudinal Models to Predict Consumer Acceptance of TBSS

Research examining consumer acceptance of TBSS focused on attitudinal models predicting consumers' acceptance of TBSS (e.g. Curran & Meuter, 2005; Dabholkar & Bagozzi, 2002; Schulster et al., 2013) employing the theory of reasoned action (TRA, Fishbein & Ajzen, 1975), TAM (Davis et al., 1989), and the theory of planned behavior (TPB, Ajzen, 1991). The TRA and TPB are general attitudinal models discussed extensively in the marketing and psychology literature (Schulster et al., 2013). The TAM is an adaption of the TRA to a technology acceptance context that introduces perceived usefulness and perceived ease of use as determinants of attitude toward acceptance of

technology (Davis et al., 1989). A mobile coaching app may be considered as a technological service. Therefore, TAM could be used to explain antecedents of an adoption intention. But, education is also a very emotionally involving service as success is very important in France to get an interesting first job or to evolve in one's job. This entails that the model of goal-directed behaviour (MGB) which takes into account emotions and desires as antecedents to intention is appropriate to consider. This study proposes an original model based on the TAM (Davis, 1989) re-specified by Hong and Tam (2006), and the MGB (Perugini & Bagozzi, 2001).

The TAM and the MGB are presented here after.

The Technology Acceptance Model (TAM)

The popularity and strength of the TAM is due to its parsimony (Bagozzi, 2007). The model has already been used to study individual attitudes and behaviors toward mobile apps (Andrews et al., 2013). Figure 1 illustrates the adjusted model proposed by Hong and Tam (2006).

For information-technology-based apps in the early stages of diffusion, the intention to adopt is a more appropriate object of study (Hong & Tam, 2006; Cacho-Elizondo et al., 2013). One additional construct inherently tied to the evaluation of a self-service experience is the degree of human interaction desired during the transaction. Recent qualitative studies identified customer needs for human interaction as one of the main reasons for not adopting a self-service technology (Collier & Kimes, 2013).

Perceived usefulness is the degree to which a person believes that using a particular technology will enhance job performance and determines both the attitude and intention to use (Davis, 1989). The perceived ease-of-use is the degree to which a person believes that understanding and using a particular technology will be effortless. This leads the individual towards perceived usefulness and an attitude that directly affects the intention to use (Davis et al., 1989, p. 985). Ease of use differs from convenience, which addresses the time and effort exerted before, during, and after a transaction (Collier and Kimes, 2013). Self-service technologies, like coaching apps, give customers the convenience to overcome many traditional constraints such as time, availability, scheduling, and location (Collier & Kimes, 2013).

Hong and Tam (2006) demonstrated that perceived usefulness, perceived enjoyment, and perceived monetary value have a direct positive influence on the intention to adopt multi-purpose information services. Their study also confirms that perceived enjoyment has a positive influence on perceived usefulness and perceived ease-of-use, and that social influence has a positive influence on the intention to adopt.

The Model of Goal Directed Behavior (MGB)

The MGB considers desires as the proximal causes of intentions, and the traditional antecedents of the TPB work through desires. "A person can recognize and even accept that perceived usefulness or attitudes are favorable criteria for deciding to act but have no desire to act and even explicitly decide not to act" (Bagozzi, 2007, p.4).

The perceived consequences of goal achievement and goal failure are modelled as anticipated emotions, which also function as determinants of desires. The MGB posits that desires, goal desire and behavior desire, provide the direct impetus for intentions and transform the motivational content to act embedded in attitudes towards the act, anticipated emotions, subjective norms, and perceived behavioral control. It also assumes that the frequency of past behaviors is a predictor of desires, intentions, and behavior, where only recent past behavior predicts behavior. Venkatesh and Morris (2000) and Venkatesh et al. (2003) examined the role of emotions in technology acceptance as indirect determinants of intentions. Real-time anticipatory positive and negative emotions can initiate decisions to act (Baumgartner, Pieters & Bagozzi, 2007).

Bagozzi and Pieters (1998) argue that when people decide whether to act in goal-directed situations, they consider the emotional consequences of both achieving and not achieving a sought-

Figure 1. Adjusted Technology Acceptance Model (Hong & Tam, 2006; Arbore et al., 2014)
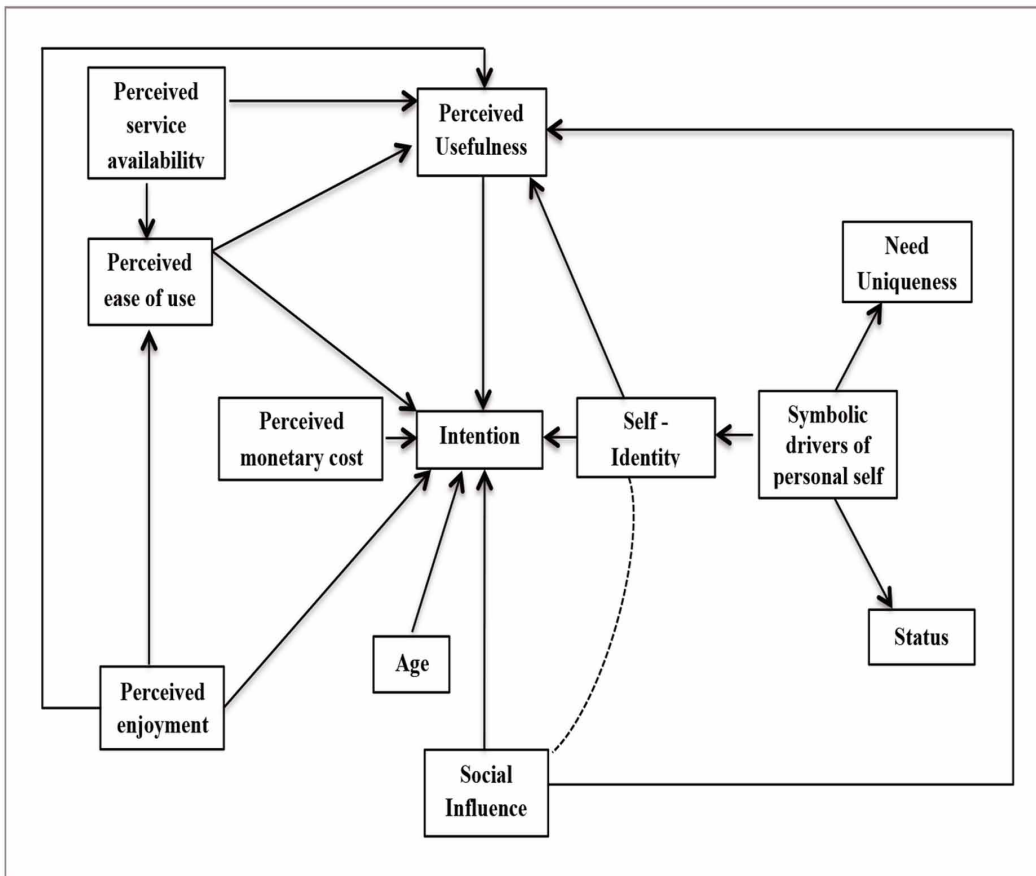
after goal. An anticipated emotion is specifically contingent on one's appraisal of goal achievement or goal failure. People typically first have a goal, and then appraise the consequences of achieving or not achieving that goal with the corresponding positive and negative emotions arising.

In this context, attitude is a "psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (Eagly & Chaiken, 1993, p. 1). An attitude is constant over reasonable periods of time and is not formulated as a response that depends on appraising specific events. Under the TRA and TPB models, attitude towards an act is measured by bipolar semantic differential items such as good-bad, rewarding-punishing, and unpleasant-pleasant (Ajzen & Fishbein, 1980, pp. 261-262). Desires in the MGB give the motivational impetus for intentions and convey the effects of attitudes towards an act, social norms, perceived behavioral control, and anticipated emotions on intentions.

The MGB also includes perceived behavioral control and frequency of past behavior. Perceived behavioral control refers to respondents' confidence in their ability to access the service via mobile phone, learn how to use and navigate the service interface, and resolve any technological issues. This concept is close to the perceived ease of use concept in the TAM. Previous research demonstrated that it is a significant determinant of the acceptance of TBSS (e.g. van Beuningen, de Ruyter, Wetzels & Streukens, 2009). As the students in this study are digital natives familiar with mobile phone apps, the model does not include this variable to keep the questionnaire to a reasonable size.

Hypotheses

Based on the proposed theoretical model (Figure 2), there are four clusters of hypotheses assessing the influence of different variables on the intention to adopt and use the mobile coaching app.

The Impact of Attitudes and Anticipated Emotions on Desires

The first cluster tests the role of attitudes and anticipated emotions on the desire to use a mobile coaching app, Behavior Desire (BDE), or the desire to succeed in studies, Goal Desire (GDE).

- H1: Students' positive attitudes (ATT) towards using a coaching app positively influence their behavioral desire (BDE) to use a coaching app.
- H2a: Students' positive anticipated emotions (POSE) towards achieving success positively influence behavioral desire (BDE) to use a coaching app.
- H2b: Students' positive anticipated emotions (POSE) towards achieving success positively influence their goal desire (GDE) to succeed.
- H3a: Students' negative anticipated emotions (NEGE) towards achieving success negatively influence behavioral desire (BDE) to use a coaching app.
- H3b: Students' negative anticipated emotions (NEGE) towards achieving success negatively influence their goal desire (GDE) to succeed.

The Impact of Subjective Norms

The second cluster explores the influence of subjective norms at four levels: at the desire to adopt the app, at the desire to succeed in studies, at perceiving the app´s usefulness and at the intention to adopt the app.

- H4a: Subjective norms (SOCIAL) positively influence behavioral desire (BDE) to use a coaching app.
- H4b: Subjective norms (SOCIAL) positively influence goal desire (GDE) to succeed.
- H4c: Subjective norms (SOCIAL) positively influence perceived usefulness (PU).
- H4d: Subjective norms (SOCIAL) positively influence intention (INT) to adopt the coaching app.

The Impact of Desires on Intention

The third cluster tests the impact of behavioral and goal desires on the intention to adopt the coaching app.

- H5a: Behavioral desire (BDE) to adopt the coaching app positively influences intention (INT) to adopt the coaching app.
- H5b: Goal desire (GDE) to succeed positively influences intention (INT) to adopt the coaching app.

The Impact of Other Variables on Intention

Finally, the last cluster focuses on the influence of perceived monetary value, enjoyment, ease of use, and usefulness.

- H6: Perceived monetary (MONEY) value influences intention (INT) to adopt the coaching app.
- H7: Perceived enjoyment (ENJOY) positively influences intention (INT) to adopt the coaching app.
- H8: Perceived ease of use (PEU) influences intention (INT) to adopt the coaching app.
- H9: Perceived ease of use (PEU) influences perceived usefulness (PU).
- H10: Perceived usefulness (PU) influences intention (INT) to adopt the coaching app.

Considering the conceptual framework developed above, this study proposes a model based on the TAM and MGB models in Figure 2.

The following hypothesis compares different groups of individuals.

As this is a model for intention to adopt a technological service, it would be interesting to compare the model by gender (Venkatesh & Morris, 2000, Cacho-Elizondo, Tossan & Shahidi, 2013).

- H11: There are differences in antecedents of intentions between men and women.

Based on the fact that students in business schools have more coaching from staff than those in public institutions (Davidenkoff, 2014), this study proposes the following hypothesis:

- H12: There are differences between private post-baccalauréat business school students and university students in the level of antecedents of intentions.

METHODOLOGY

This research used two studies: one qualitative and one quantitative. The qualitative study is based on ten in-depth interviews of students. These students shared their thoughts about the following issues: 1) how they appraise their higher education and what could be improved; 2) their use of online tools; 3) how they understand coaching; 4) their reactions to the following script, and 5) their use of coaching apps (calorie control, sports, etc.).

Figure 2. Research Model
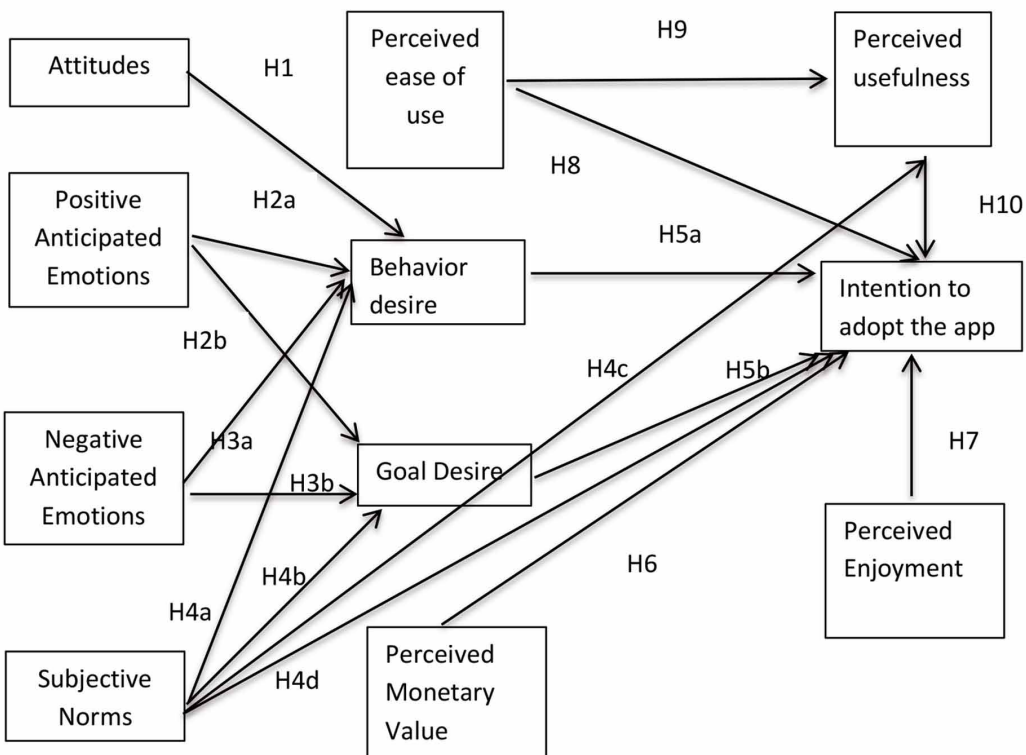
The Script used in the interview stated:

Imagine an app on your mobile that gives you access to data on students in commerce and management, and to forums and blogs to exchange your personal experience and advice. There would also be an e-mail or SMS system of alerts to help you in your efforts to start working, and with respect to lead times for submitting your homework...

The second study was an online survey (via Sphinx iQ2) with a convenience sample of students from three types of educational institutions: a public university, a business school, and a public continuing education program to examine the theoretical model and validate the hypotheses. The questionnaire also covered demographic profiles. A convenience sample of students is justified because coaching apps of diet, sport exercise are still not used much among students. This app's concept may be perceived really new as it cannot be easily substituted by an existing product and will generate a new behavior (Le Nagard-Assayag, Manceau & Morin-Delerm, 2015). Therefore, testing this concept may be difficult. Potential customers may have difficulties in evaluating benefits and may minor behaviour changes that The research model is analysed with structural equations modelling using the AMOS software package with the maximum likelihood fit function applied. The analysis used a two-stage approach as recommended by Anderson and Gerbing (1988). First, the measurement instruments for the constructs were assessed by examining the reliability and validity of scales, and then the relationships were tested.

Measures

Figure 3 describes the scales, labels, items, and sources for these scales. The respondents answered questions on a six-point Likert scale from "totally disagree" (1) to "totally agree" (6) (Sphinx iQ2).

Control variables

The model includes gender and type of school. Type of school is operationalized as a dummy variable with a value one representing post-Baccalauréat Business School students, and zero otherwise. The control variables are used in the section "Analysis of Subsamples" in order to test the hypothesis H11 and H12.

RESULTS

Descriptive Analysis

The sample shows a homogeneous distribution between men and women. Among the participants (N=194), 74.2% were aged between 18 and 23 (see Table 1). Over half of the sample consisted of business school students. The average education level was 3.18 years after high school diploma, and 45.9% of participants have a Bachelor's degree and 20% are in the process of obtaining this level.

More than 90% of participants never tried a mobile app coaching service. Only 3.6% of participants presently use a mobile app coaching service (sports, weight management, job search, to gain self-confidence, to improve languages).

The analysis shows that the variable *Intention* is low on average (see Table 2), while *Positive anticipated emotions* and *Goal Desire* are high. The average intention to adopt the coaching app differs significantly between the students who have at most a bachelor level (3.17) and those who have at least a bachelor level (2.42), which is not surprising because the latest have learned to organize in order to succeed (F = 12.512 and p = 0.001). Participants responded that they were prepared to pay at most an average of 3.43 € for this mobile app coaching service.

Figure 3. Concepts, Labels, Items, and Sources

Concept	Label	Items	Adapted from
Intention to Adopt the Mobile Coaching App	INT	1. In the coming year, I will certainly try to use a mobile coaching service for my studies that will support me, help me organize my reviews, and allow me to improve my performance 2. In the coming year, I will absolutely try to use a mobile coaching service for my studies. 3. In the coming year, I will certainly make an effort to try a mobile coaching service for studies. 4. In the coming year, I plan to use a coaching service for my studies.	Perugini and Bagozzi (2001)
Behavior desire	BDE	1. I desire to use a mobile coaching service for my studies. 2. To use a mobile coaching service for my studies is something that I want to do. 3. I strongly desire to use a mobile coaching service for my studies.	Perugini and Bagozzi (2001)
Goal desire	GDE	1. I desire to improve my performance in studies and the organization of my reviews. 2. Improving the organization of my reviews and my performance in my studies is something that I want to do. 3. I have a strong desire to improve the organization of my reviews and to improve my performance.	Perugini and Bagozzi (2001)
Attitudes	ATT	I think that using a mobile coaching service for my studies in the coming year is useless-useful, ineffective-effective, disadvantageous-advantageous, stupid-intelligent, punishing-rewarding, foolish-wise, unpleasant-pleasant, joyless-joyful, boring-exciting, unattractive-attractive, and unenjoyable-enjoyable.	Perugini and Bagozzi (2001)
Positive anticipated emotions	POSE	If I succeed in achieving my goal of success in my studies in the coming year, I will feel excited, delighted, happy, glad, satisfied, proud, and self-assured.	Perugini and Bagozzi (2001)
Negative anticipated emotions	NEGE	If I do not succeed in achieving my goal of success in my studies in the coming year, I will feel angry, frustrated, guilty, ashamed, sad, disappointed, depressed, worried, uncomfortable, and fearful.	Perugini and Bagozzi (2001)
Subjective norms	SOCIAL	1. People who are important to me would want me to use a mobile coaching service for studies if I needed support to organize my reviews and to improve my performance. 2. People who are important to me would approve of my use of a mobile coaching service for studies if I wanted support to improve the organization of my studies and my performance. 3. People who are important to me would help me to use a mobile coaching service for studies. 4. People who are important for me would encourage me to use a mobile coaching service for studies if I needed support to organize my reviews and to improve my performance.	Perugini and Bagozzi (2001)
Perceived ease of use	PEU	1. I expect that learning how to use this mobile service would be easy for me. 2. I expect that my interaction with this mobile service would be clear and understandable. 3. I would find this mobile service easy to use. 4. I expect that it will be easy for me to become skillful at using this mobile service.	Davis (1989)
Perceived Enjoyment	ENJOY	1. I expect that using this mobile service would be enjoyable. 2. I expect that using this mobile service would be pleasurable. 3. I expect to have fun using this mobile service. 4. I expect that using this mobile service would be interesting.	Davis et al. (1992)
Perceived Monetary Value	MONEY	1. I expect that this mobile service would have a reasonable price. 2. This mobile service would offer good value for money. 3. I believe that at the right price, this mobile service would be good value.	Dodds, Monroe, and Grewal (1991)
Perceived usefulness	PU	1. Using this mobile service would increase my chances of achieving things that are important to me. 2. I would find this mobile service useful in my daily life. 3. Using this mobile service would help me accomplish things more quickly.	Davis (1989)

Table 1. Descriptive Statistics of Potential Users

Demographics	(N=194) %
Gender	
Female	54.6
Male	45.4
Age	
<18	0.5
18-20	27.3
21-23	46.9
24-26	7.7
>26	17.5
Institution of higher education	
University	17.5
Business school	55.2
IUT, BTS	8.2
(University Institute of Technology, two-year technical degree)	
Training institution	9.8
A training center for apprentice	2.1
Others	7.2
Education level in progress	
Bachelor's degree	
L1	18.6
L2	10.3
L3	21.1
Master's degree	
M1	27.3
M2	18.6
Others	4.1

Scale Reliability and Validity

The reliability of all instruments was tested using the Cronbach's alpha reliability coefficient (see Table 3). All coefficients are acceptable, except those associated with perceived monetary value ($\alpha = 0.62$). Consequently, the MONEY construct was eliminated from the model and hypothesis H6 was not tested. As Table 3 shows, the Jöreskog ρ values are high (except for the MONEY construct). The related construct explains each item better than random factors. Concerning convergent validity, the influence of relationships (between the measures and their construct) is statistically different from 0 (even if the average extracted variance between a construct and its measures is approximately above 0.5 for some constructs, except for the MONEY construct).

Table 2. Mean and Standard Deviation of Variables

Variables	Mean	Standard Deviation
ATT	3.48	1.20
BDE	2.97	1.56
ENJOY	3.49	1.28
GDE	4.37	1.36
INT	2.78	1.50
MONEY	3.60	1.07
NEGE	3.84	1.28
PEU	4.21	1.26
POSE	5.11	.92
PU	3.50	1.44
SOCIAL	2.89	1.30

Note: ATT (Attitudes); BDE (Behavior desire); ENJOY (Perceived enjoyment); GDE (Goal desire); INT (Intention to adopt the mobile coaching service), MONEY (Perceived monetary value); NEGE (Negative anticipated emotions); PEU (Perceived ease of use); POSE (Positive anticipated emotions); PU (Perceived usefulness); SOCIAL (Subjective norms).

To test discriminant validity, this study conducted a Chi squared difference test referring to the difference in degrees of freedom with a procedure recommended by Bagozzi and Yi (1991) that compares the χ^2 values of a model that leaves the correlations between the different constructs free, and that in which the correlations between constructs are fixed at 1. If the difference is significant in terms the difference in degrees of freedom, the tested model is better than the constrained model, and the constructs are different. Therefore, the results for the indicators used in our study are satisfactory.

Estimation of the Model

The model has two sub-models: one to measure independent variables and one to measure dependent variables, and a structural model connecting the latent dependent variables to the latent independent variables. There are several observed independent variables that depend on latent variables, which are correlated (in each model). There are also several observed dependent variables (4 items concerning intention, for example) that depend on several latent variables. The indicators are fairly satisfactory (see Table 4). Therefore, the data thus shows a satisfactory goodness of fit for the theoretical model.

Table 5 shows the relationships found in the research model using the structural equation approach. As shown in Table 5, Positive anticipated emotions and the Subjective norms contribute significantly to Behavior desire and Goal desire (p < 0.001). Attitudes and Negative anticipated emotions also contribute significantly to Behavior desire, which has a significant influence on Intention. Behavior desire fully mediated the effects of subjective norms on Intention. There are noticeable strong effects of Perceived ease of use and Subjective norms on Perceived usefulness.

Consequently, hypotheses H1, H2a, H2b, H3a, H4a, H4b, H4c, H5a, and H9 are validated. Figure 4 illustrates the validated model.

Table 3. Scale Reliability and Validity

	ATT	BDE	ENJOY	GDE	INT	MONEY	NEGE	PEU	POSE	PU	SOCIAL
Cronbach's Alpha	**0.95**	**0.94**	**0.84**	**0.91**	**0.94**	**0.62**	**0.92**	**0.85**	**0.93**	**0.90**	**0.87**
Standardized item loading (> 0.5)											
Item 1	0.74	0.87	0.75	0.84	0.89	0.22	0.61	0.70	0.85	0.84	0.80
Item 2	0.78	0.92	0.80	0.89	0.88	0.79	0.61	0.76	0.81	0.91	0.76
Item 3	0.67	0.98	0.72	0.91	0.88	0.84	0.61	0.82	0.85	0.84	0.75
Item 4	0.85		0.75		0.95		0.75	0.80	0.87		0.86
Item 5	0.83						0.82		0.84		
Item 6	0.87						0.66		0.84		
Item 7	0.78						0.85		0.72		
Item 8	0.75						0.83				
Item 9	0.81						0.77				
Item 10	0.81						0.75				
Item 11	0.78										
Average extracted variance (ρvc>0.5)	**0.55**	**0.48**	**0.42**	**0.46**	**0.81**	**0.33**	**0.49**	**0.43**	**0.54**	**0.45**	**0.45**
Jöreskog ρ (>0.70)	**0.93**	**0.73**	**0.74**	**0.72**	**0.95**	**0.55**	**0.91**	**0.75**	**0.89**	**0.71**	**0.77**

Note: ATT (Attitudes); BDE (Behavior desire); ENJOY (Perceived enjoyment); GDE (Goal desire); INT (Intention to adopt the mobile coaching service), MONEY (Perceived monetary value); NEGE (Negative anticipated emotions); PEU (Perceived ease of use); POSE (Positive anticipated emotions); PU (Perceived usefulness); SOCIAL (Subjective norms).

Table 4. Goodness of Fit

Test	Value
RMSEA	0.078
NFI	0.723
CFI	0.826
TLI	0.816

Table 5. Effects of Variables

| Variables	Standardized Regression Weights	R²
BDE		0.742
ATT	0.192***	
NEGE	-0.115*	
POSE	0.142**	
SOCIAL	0.713***	
GDE		0.431
NEGE	0.037	
POSE	0.350***	
SOCIAL	0.470***	
INT		0.920
BDE	0.941***	
ENJOY	-0.096	
GDE	-0.066	
PEU	0.007	
PU	0.153	
SOCIAL	-0.036	
PU		0.859
PEU	0.709***	
SOCIAL	0.642***	

Notes: ATT (Attitudes); BDE (Behavior desire); ENJOY (Perceived enjoyment); GDE (Goal desire); INT (Intention to adopt the mobile coaching service); NEGE (Negative anticipated emotions); PEU (Perceived ease of use); POSE (Positive anticipated emotions); PU (Perceived usefulness); SOCIAL (Subjective norms); *p<0.05; **p<0.01; ***p<0.001.

Analysis of Subsamples

Gender

In the analysis of the model estimation split by gender, the data show satisfactory goodness of fit. According to Table 6, the difference between men and women is only significant for positive anticipated emotions. A unilateral test validates the fact that women are more likely than men to experience positive anticipated emotions (see Table 6). However, positive anticipated emotions influence Goal desire only for men (see Table 7). The results show that the impact of BDE on intention differed by gender. The effect of attitudes on BDE is significant for women but not for men. Women's subjective norms have a larger influence on Perceived usefulness than men's subjective norms (as in Hong and Tam, 2006). H11 is partly confirmed.

Figure 4. Final Validated Model
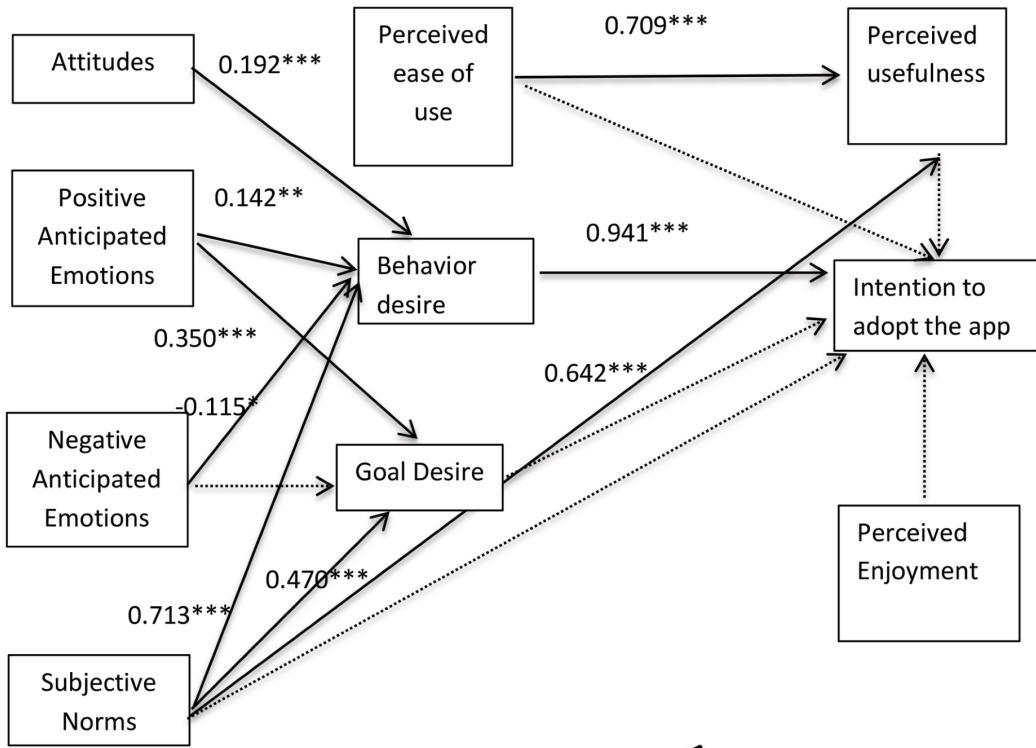
Note: Significant at *p<0.05; **p<0.01; ***p<0.001. ◄ Not significant

Type of School

Table 8 shows only significant differences for clarity. The intention to adopt the mobile coaching service is greater for the business school students than for the others. Table 8 shows only significant differences for clarity. Their Behavior desire, Perceived enjoyment, and Positive attitudes are also greater than the others. The results show that these variables affecting BDE vary among the two samples (see Table 9). The effect of attitudes on Behavior desire is significant for non-business school students, while the effect of anticipated emotions is significant for the business school students. H12 is partly confirmed.

DISCUSSION

The need for human interaction is one of the main reasons for not adopting a self-service technology (Collier & Kimes, 2013). This reason may explain why intention to use such an app is average, with 2.78 on a six-point scale (1: no intention, 6: a definitive intention). Contrary to expectations, given that business school students are already highly coached by the school staff, these students had a higher intention to adopt (3.05) than other students. This result may be explained by the fact that there is more group work so more peer pressure and less budget constraints in those schools. At university students are used to relying on themselves. This doesn't mean that they don't need academic coaching and sometimes psychological coaching. The first comes more in higher classes and from peers while the latter is available when consulting a GP (free in France thanks to Social Security) or a psychologist.

Table 6. Comparison between variables: Gender

Variables (4)	Sample 1 Female (N=106)	Sample 2 Male (N=88)	F (df=1)	p (3)	Eta²
ATT	3.39 (1) 1.21 (2)	3.58 1.19	1.217	0.271	0.006
BDE	2.95 1.60	2.99 1.52	0.042	0.837	0.000
ENJOY	3.53 1.28	3.44 1.28	0.229	0.633	0.001
GDE	4.31 1.41	4.44 1.31	0.471	0.493	0.002
INT	2.78 1.52	2.79 1.47	0.001	0.977	0.000
NEGE	3.98 1.18	3.67 1.39	2.850	0.093	0.015
PEU	4.21 1.26	4.21 1.28	0.000	0.988	0.000
POSE (4)	5.23 0.82	4.97 1,00	3.994	0.047	0.020
PU	3.51 1.39	3.49 1.50	0.007	0.932	0.000
SOCIAL	2.84 1.34	2.94 1.27	0.303	0.583	0.002

Note: (1) The mean (2) The standard deviation (3) If the p-value related to the value of statistic F is greater than the significance level 0.05, then the hypothesis H_0 (the mean of female is equal to the mean of male) is not rejected otherwise H_0 is rejected. (4) A unilateral test was also done for each variable. The test is significant only for the variable POSE. As the Student statistic value z = 1.95>1.645, then H'_0 (the mean of female is superior than the mean of male) is not rejected.

Both male and female students desire to succeed in their studies. The mean goal desire was 4.37 out of 6. It is influenced by subjective norms. In France, a Grande Ecole or a University diploma is much more valued than a manual qualification. However, goal desire does not automatically lead to an intention to adopt an app whose functionalities are abstract. People certainly perceive that this app can only be a complement to face-to-face human coaching.

The results confirm Perugini and Bagozzi's MGB model since the positive emotions associated with anticipation of success and the negative emotions associated with fear of failure clearly influence behavioral desire to use a coaching app, which is influenced by attitudes and social norms. However, men's positive anticipated emotions significantly influence goal desire, while this is not the case for women. This may be because women may be more duty oriented, doing what they have to do, such as studying while men need more extrinsic motivation. Women study more than men in high school and their baccalaureat success rate is much higher (86.7% versus 82.3% for men in 2012 according to French Observatory of inequalities), a spread that grew.

Table 7. Effects of variables: Gender

Variables	Standardized Regression Weights *Female* (55%)	Standardized Regression Weights *Male* (45%)	Critical Ratios for Differences between Parameters *(1)*
BDE			
ATT	0.165**	-0.042	-1.365
SOCIAL	0.787***	1.001***	1.573
GDE			
POSE	0.113	0.577***	2.466
SOCIAL	0.643***	0.319**	-1.51
INT			
BDE	1.019***	0.897**	0.594
PU			
PEU	0.749***	0.292***	-2.568
SOCIAL	0.622***	0.983***	2.627

Notes. ATT (Attitudes); BDE (Behavior desire); GDE (Goal desire); INT (Intention to adopt the mobile coaching service); PEU (Perceived ease of use); POSE (Positive anticipated emotions); PU (Perceived usefulness); SOCIAL (Subjective norms); **$p<0.01$; ***$p<0.001$; *otherwise no significant.* (1) Comparison of two regression weights: the difference of the regression weights between the two groups is significant (0.05) if the absolute value of the critical ratio is over 1.96. This table shows only variables which obtain at least one significant statistic test for clarity.

Table 8. Comparison between variables by the type of school

Variables (4)	Sample 1 *Business School Students* (N=107)	Sample 2 *Others* (N=87)	F (df=1)	p (3)	Eta²
ATT	3.65 *(1)* 1.16 *(2)*	3.27 1.23	4.924	0.028	0.025
BDE	3.20 1.50	2.69 1.60	5.210	0.024	0.026
ENJOY	3.67 1.27	3.26 1.26	5.211	0.024	0.026
INT	3.05 1.46	2.46 1.48	7.662	0.006	0.038

Note: only significant differences are reported (1) The mean (2) The standard deviation (3) If the p-value related to the value of statistic F is greater than the significance level 0.05, then the hypothesis H_0 (the mean of Business School students is equal to the mean of others) is not rejected otherwise H_0 is rejected. (4) A unilateral test was also done for each of ten variables. The test is significant only for ATT ($z=2.21$), BDE ($z=2.27$), ENJOY ($z=2.28$) and INT ($z=2.77$). As the Student statistic values z are over 1.645 then H'_0 (the mean of Business School students is superior than the mean of others) are not rejected.

Table 9. Effects of variables

Variables	Standardized Regression Weights *Business School Students* (55%)	Standardized Regression Weights *Others* (45%)	Critical Ratios for Differences between Parameters *(1)*
BDE			
ATT	0.120	0.276***	1.298
NEGE	- 0.173*	-0.061	1.345
POSE	0.207**	0.075	-1.388
SOCIAL	0.814***	0.635***	-0.84
GDE			
POSE	0.430***	0.274**	-1.213
SOCIAL	0.538***	0.399***	-1.019
INT			
BDE	0.883***	0.998***	1.964
PU			
PEU	0.637***	0.800***	1.525
SOCIAL	0.720***	0.485***	-0.470

Note: ATT (Attitudes); BDE (Behavior desire); GDE (Goal desire); INT (Intention to adopt the mobile coaching service), NEGE (Negative anticipated emotions); PEU (Perceived ease of use); POSE (Positive anticipated emotions); PU (Perceived usefulness); SOCIAL (Subjective norms); *p<0.05; **p<0.01; ***p<0.001; otherwise no significant. (1) Comparison of two regression weights: the difference of the regression weights between the two groups is significant (0.05) if the absolute value of the critical ratio is over 1.96. This table shows only variables which obtain at least one significant statistic test for clarity.

Behavioral desire in turn influences intentions to use the app according to MGB. Behavioral desires provide the direct impetus for intentions and transform the motivational content to act embedded in attitudes towards the act.

As predicted by the TAM, perceived ease of use influences perceived usefulness, but it does not represent an influence regarding the intention to adopt the mobile coaching service. It seems perceived enjoyment does not influence intention to adopt; students indicated that they are not interested in an enjoyable app. Although many examples show that users of even a fairly serious app always welcome a pleasant user experience.

CONCLUSION

Theoretical Implications

This study contributes to the literature by building on existing knowledge of consumer decision-making in educational context. It contributes toward a clarification of goal-directed behavior. The results suggest that anticipated negative emotions may not play a significant role in explaining students' goal desire. This is in line with Shuster et al.'s (2013) findings that respondents may have difficulty envisioning the outcomes of goal failure if the goal is too abstract.

Managerial Implications

The findings can be used to encourage young adults' acceptance of coaching apps to better organize their studies by highlighting the key benefit of convenience: its lifestyle compatibility and instant availability during times of need. It is important to emphasize service efficacy, as users may not perceive it a way to improve studies compared to a face-to-face counterpart.

The study also provides evidence that TBSS acceptance for credence services is driven by emotional factors. The findings are particularly relevant to marketers of such services covering topics ranging from law to wellness, which are increasingly digitalized. Consumer expectations of service efficacy need to be managed, as low adoption intentions suggest that students may be unconvinced of technology's ability to successfully capture the service providers' specialized knowledge.

The implementation of this kind of application will certainly be a challenge in France, especially in public universities due to budget constraints. It is during the beginning of their bachelor studies that students require more supervision and coaching because the academic organisation and load is so different from the one they were used to in High School. Faculty mentoring is key in this stage, unfortunately, university faculty lack time to give more personalized and regular supervision to each student. For that reasons, many students fail and have to double or apply to a private business school.

Limitations and Future Research

This study provided quantitative evidence of the determinants of consumer acceptance of an emerging TBSS that aims to achieve an educational goal. However, future research is needed to improve the generalizability of the findings, especially if a testable app is actually developed and if the framework is applied across other credence services. The findings are also limited to the French cultural context.

Further research should be conducted across different cultural contexts to account for differences in social norms and beliefs. Another limitation is that the sample used in this study may not be truly representative, given that it is a convenience sample in a limited number of higher education schools in France.

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APPENDIX

Concepts, Labels, Items, and Sources

Web Sites

- **CNAM:** Conservatoire Nationale des Arts et Métiers (Paris, France), www.cnam.fr
- **EDC Paris Business School:** www.edcparis.edu
- **IPADE Business School (Mexico City, Mexico):** www.ipade.mx
- **French Observatory of Inequalities:** www.inegalites.fr/spip.php?page=article&id_article=977

Apps

- **Cortana:** windows.microsoft.com/en-us/windows/preview-cortana
- **Google Now:** www.google.com/intl/es-419/landing/now/
- **Siri:** www.apple.com/mx/ios/siri/

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