Title
Investigating Digital Natives and Their Organizational Behavior: A Measurement Model

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Type of abstract
extended abstract

Purpose of the research
The individuals born in a networked and digital world, with ubiquitous access to digital technologies are normally identified by the terms digital natives (Prensky 2001a, 2001b, 2005), net generation (Tapscott 1998), or millennials (McMahon and Pospisil 2005). Some studies suggest that these individuals, hereafter called digital natives (DNs), have probably developed skills and capabilities that allow them to use ICTs in a sophisticated and fluent way (Palfrey and Gasser 2008; Palfrey et al. 2009). Other studies suggest that the intense use of information and communications technologies (ICTs) in the early years of a person's life could contribute to the development of peculiar behavioral skills (Tapscott 1998; Prensky 2001a). The DNs share significant chronological and experiential traits, and can be therefore studied as a cohort (Kupperschmidt 2000).

Up to now DNs have been studied mainly with reference to their habits in the learning processes, and the literature focused on this phenomenon mainly with the perspective of education (Braccini and Federici, 2013). Now that the first DNs have entered the job market, and ICTs are more pervasive and ubiquitous than ever thanks to the use of mobile devices, we propose to study this cohort from a behavioral perspective to realize whether the traits of DNs affect the way in which they operate in organizational settings, in terms of decision making, knowing, sense making and collaborative behavior.

The only, so far, available model for measuring DNs’ traits (Theo 2013) covers teaching and learning aspects, and it is aimed at providing instructors with a self-report (typically a survey) instrument to measure whether, and how much, students can be described as DNs.

To achieve our final goal, we thence initially moved from the development of a measurement scale for DNs that encompasses behavioral traits meaningful in organizational settings (Braccini and Federici, 2013).

Theories used and contribution to the literature
Scholars seem to agree that certain common behavioral characteristics of DNs can probably be ascribed to their intense use of various information systems and technologies: to collect information, to explore the digital world, to enter social relationships, for fun or to cooperate with others (Valkenburg and Peter 2008). Furthermore, they are also supposed by some authors to have developed a sort of addiction that reveals itself in the constant use they make of ICTs for personal, social, and professional purposes (Vodanovich et al. 2010).

The notion of DNs has spurred much public, educational, and academic debate (Ryberg and Ryberg Larsen 2012) and, after a first wave of enthusiastic and positive works, a number of studies have adopted a more critical stance toward the idea of the existence of a homogeneous generation of ICT-literate students which might instead reveal greater internal variance among their characteristics (Bennett et al. 2008).

There is room for further research to clarify the nature of the potential changes that are taking place (Jones and Czerniewicz 2010), and to go beyond the uncritical use of these catchy terms to confirm or refute their underlying assumptions (Helsper and Eynon 2010).

As reported by Bennett et al. (2008), the phenomenon of intense use of ICTs in the early years has so far been investigated mainly in the field of education, because DNs were for a long time identifiable only behind desks in schools or colleges. Furthermore, many studies focus only on identifying DNs' actual use of ICT (Kennedy et al. 2008, 2010), or to review existing studies (Bennett and Maton, 2010; Bennett et al. 2008).
Within the boundaries of a broader project, this research has already contributed to the literature through the identification and validation of a yet unavailable measurement model to investigate DNs, with a focus on their most salient behavioral traits that may shape their interaction with technology and with other people. The work identifies six latent variables pertinent to the behavioral sphere of DNs, and in particular it focuses on variables helpful to investigate the behavior of DNs in professional environments.

**Research method**

The investigation of DNs' behavioral traits involves the examination of latent variables that, being such, cannot be measured directly, but it is only possible to measure them indirectly by using a measurement model with scales composed of indicators (Hair et al. 2009; Hardy and Bryman 2009; Dijkstra 2010).

To achieve this objective the research design was thence based on the two following processes:

1. A literature review (Webster & Watson, 2002) of studies on DNs, to identify the latent behavioral variables;
2. A card sorting process (Moore & Benbasat, 1991), to define and validate the scale in terms of indicators, captions, and texts.

The literature search was carried out with Scopus, a vast body of literature outside the borders of the organization behavior discipline. Despite the fact that this could increase the bias in the results, we specifically chose it because, as mentioned above, the debate on DNs started mainly outside the field of organizational behavior. The queries with the keywords ‘digital native’, ‘net generation’, and ‘millennials’ in abstracts, keywords, or titles produced, respectively, 167, 154, and 174 results with some duplicates.

The final selection was made by: (1) combining these three sets and removing duplicates, (2) reading all the titles and removing all the false positives, (3) repeating this last selection process at the abstract level. After a full text reading, only a few (16) papers of the remaining sample of 62 were found to be pertinent to our research aim. The reading of these papers helped to identify another 10 relevant works from their reference sections.

We read each paper separately, trying to single out key concepts related to our research objective. We then proceeded to match and discuss our understanding of the papers, in order to derive a paper/concept matrix. The more frequent and clearly depicted concepts emerging from discussion over the final matrix allowed us to identify six latent variables.

To validate the measurement model we followed the card-sorting method of Moore and Benbasat (1991). For each of the six latent variables we created a set of nine to ten indicators. These indicators underwent three card-sorting cycles, each one with four independent judges (two researchers/experts and two DNs):

- The first two cycles were dedicated to validate the relationships between indicators and variables, possibly revising the text of some indicator;
- In the final cycle the judges were asked to provide a caption and a descriptive text for each of the six groups, to verify the correspondence with those already assigned.

To avoid biases and memory effects judges were changed in every cycle, so no judge classified indicators twice. Moreover, as the process related to linguistic comprehension, and in order to avoid any bias in this regard, all the used texts had to be in the language (Italian) shared by all the involved judges. Only after the end of the process were the final texts translated into English.

Two statistical indexes, the Cohen's K and the hit target index proposed by Moore and Benbasat (1991), were used to assess the goodness of the classification made, and to identify the need for a further cycle during the classification.

**Main results**

The final version of the validated measurement model proposed as a result of this stage of the research is composed by a set of 6 latent variables and 58 indicators, as follows:
1. **Multitasking**, intended as the habit of using different ICT tools and digital media at the same time (9 indicators)

2. **ICT tools-mediated relationship**, which identifies the tendency to relate to other persons through ICT tools and digital media (10 indicators)

3. **Speed in information processing**, namely the habit and need to obtain and process information very rapidly to accomplish tasks quickly (10 indicators)

4. **Critical Thinking**: defined as the ability of critically evaluating online resources to choose most authoritative ones (9 indicators)

5. **Peer-to-peer collaboration**, that is the habit of looking for collaboration rather than working alone (10 indicators)

6. **Learning in action**, which identifies the preference for learning something through a form of contextualized experience (e.g., watching and discussing a film), rather than from an abstract dissertation (e.g., a textbook or a traditional class) (10 indicators)

Now, minor actions necessary to complete the validation of the measurement model are ongoing. More specifically, a test survey was administered to a small sample of DNs, and factor analysis is currently in progress to confirm the classification of the indicators into the latent variables as resulting from the card sorting process.

As a future research step, we plan to administer a questionnaire based on the present measurement model to a sample composed of both natives and immigrants, in order to investigate possible behavioral differences between these two groups, and to make use of structural equation modeling for the analysis.

**References**

Technologies. in *Proceedings of Asciilite Conference*, Brisbane, Australia, 421-431.