When Opportunities Are Turned into Threats: Quality of Information Services on Campus and Student Loneliness

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ABSTRACT

The present paper tests a long-overlooked aspect of the association between school management and student mental health. Specifically, the question asked is whether and to what extent quality of information services is associated with students' feelings of loneliness. Research on this relationship is almost inexistent—most probably because of the rather narrow conceptual framework within which loneliness research has been carried out. The present study attempts to fill this gap by looking at loneliness from a different conceptual angle, that of alienation, and from there to test a couple of hypotheses: (i) the significance of the relationship between quality of information services and student loneliness and (ii) the protective role of quality of informal student networks. Data from 439 undergraduate students from a Moroccan institution of higher education were used for the purpose. Both hypotheses were confirmed. Quality of information services, which a sweeping majority of students (64.2%) rated as unsatisfactory, was negatively associated with feelings of loneliness (β = -.17**, p < .01). To test the protective role of quality of student networks, a moderation analysis was conducted. Quality of student networks proved a significant moderator. Results and implication for educational management and future research directions are discussed.

Keywords: Alienation Educational Management Higher Education Information Services Loneliness Student Networks Student Satisfaction

INTRODUCTION

ALIENATION, A POSSIBLE FRAMEWORK FOR THE STUDY OF LONELINESS

Although there are hints in the literature that quality of information services on campus might impact student loneliness, no studies have investigated the relationship so far. A possible reason why such an investigation was overlooked in the past may be conceptual. Loneliness has so far been handled within a somewhat tight conceptual framework. A survey of the literature on loneliness and its correlates shows that loneliness is understood as the subjective expression of unmet *social* connection needs (Cacioppo & Patrick, 2008; Fromm-Reichmann, 1957; Weiss, 1979). The term "social" in "unmet social connection needs" puts an unnecessary restriction on a fuller investigation of the entire range of associations loneliness might have with other constructs, and therefore hinders a more complete understanding of it. To remove the conceptual hindrance, the present study puts loneliness within a larger

framework, that of alienation.

Alienation, to borrow Leopold's definition (2018, *p*. 2), is a "social or psychological ill involving the problematic separation of a subject and object that properly belong together." What is referred to in the definition as "subject" and "object" incorporates the social (individuals and groups) but transcends it to the organizational as well. Organizational variables such as management style, workspace design, hierarchical structure, income disparity, and information flow are not strictly social in character, but may well have a direct and significant impact on employees' and students' feelings of loneliness. Adopting an alienation framework for the study of loneliness allows the investigation of such relationships and may hold the promise of a fuller understanding of loneliness and other adjacent concepts so far treated in isolation (Chiaburu *et al*., 2014).

Research on loneliness falls comfortably within alienation as defined above, and loneliness is indeed a possible aspect of alienation. In the context of higher education, student loneliness is not only the subjective expression of unmet social connection needs, but it may also be a possible expression of the violation of the proper character of the institution-student bond. Underperforming information services deprive students of their right to be informed and therefore make the relationship with students problematic. An institution of higher education (IHE) and its students—its main stakeholders—are supposed to "properly belong together". By underserving its students, IHEs flout the basic principles of connectedness and harmony that are supposed to hold the partnership together. IHEs are there to provide the right conditions for students to learn and grow. The relationship between students and a properly functioning IHE is rational, natural, and good and should therefore be sustained and promoted. However, when the IHE wittingly or unwittingly deprives its students of their right to be properly and timely informed, it threatens to sever the institution-student bond and to turn it into something irrational, unnatural, and bad. This problematization of the proper bond is the essence of alienation.

Always within an alienation framework, when a bond is made problematic, at least three different types of separation and severance might be observed, namely breaks, isolation, and hostility (Leopold, 2018). In the context of higher education, breaks and isolation are the most likely manifestations, although in some extreme cases hostility may also be observed. Attrition is one-way students can break away as a result of feeling alienated from their IHE. Absenteeism is another, softer form of a break. Disengagement, meaninglessness, powerlessness, and loneliness are types of isolation that students may also experience. All these aspects of academic life, from attrition to loneliness, have been addressed in research, but no other framework seems to provide enough conceptual breadth to systematically account for their similarities and differences. At least at the conceptual level, alienation is a useful framework with a high descriptive and explanatory power, although some testing is definitely still needed to weigh its empirical value.

Poor Information Services as a Risk Factor

To the authors' knowledge, no studies have directly addressed the association between quality of information services and student loneliness, but research has shown that the absence of efficient information services on campus is associated with a large spectrum of ills. The many ways in which poverty of information has been shown to obstruct student success and flourishing are a reason to give quality of information its due status: a small investment with great rewards. Below are a few examples of how poor quality of information can be so harmful as to contribute, directly or indirectly, to student disengagement and possibly to feelings of loneliness (*i.e*., "isolation" in alienation terminology).

Consider the case of a student who, coming fresh from vacation and anxious to start a new and exciting semester, sadly realizes that basic and general information on the new semester is just not available—starting date, course description, teacher contact information, timetable (mostly the sort of information normally found in a school prospectus). Such a student is very likely to get confused, deflated, and crestfallen. Instead of being greeted with clear and explicit information on the new semester,

which is in no way a management feat, the student is left to muse over when the semester is really going to start. Day in day out, the excitement turns into a boredom that is hard to get rid of. Reactant boredom, as this type of boredom is often referred to, takes its toll on the student. What makes reactant boredom particularly pertinent to student disengagement and loneliness is that it is accompanied by a pronounced motivation to escape the boring situation and those responsible for it. The impact of reactant boredom has been found to be so sweeping. Nicotine and alcohol consumption (Amos *et al.*, 2006), negative achievement (Goetz *et al*., 2014; Pekurn *et al.*, 2010), school attrition (Biearden et al, 1989), depression and frustration (van Hoofd *et al.*, 2018) have all been reported to be associated with feelings of reactant boredom. This is a disappointment no student would want to experience and no school management would want to cause. It is a sweet situation turned sour as a result of a failure to provide timely, basic, and necessary information to those who need it.

Similarly, lack of information on learning goals and testing has been found to be detrimental to the students' university experience and learning outcomes. Too little information on learning goals and objectives leaves the students unfocused (Shmoker, 2011), unable to tell what is more from what is less important, and prevents them from evaluating and monitoring their own advancement and progress (Gronlund, 1995). Lack of information on tests and testing systems has also been found to have an impact on student performance and to even flout students' rights as test-takers (NCME, 1995). Performing well on tests has been reported to be strongly associated with familiarity with the testing procedure through both instruction and practice (Tomasi *et al*., 2018). In some testing codes and regulations, students are even invited to take part in discussions with teachers and testing boards about the types and structures of tests they feel would best reflect their abilities (JCTP, 1988). Starting a semester without a clear idea of what the goals are or even starting a lesson without knowing what the objectives are have a lot in common with a fool's errand. Expert educators have one major aim: to hook their students; and the best hooking time is the beginning of the semester and the beginning of the lesson, when teachers strive to make the course contents look attractive and manageable (Biggs, 2011).

Another basic necessity in matters of information is a directional signage system on campus. A sign of welcome that well-designed campuses show their prospective students and visitors is a good directional system with the necessary maps and signs to show them around. Such a welcoming act is likely to contribute to the students having a nice feeling about being there and therefore encourages them to fully explore the premises before deciding on their registration. Probably the first first-hand impression students get about being on campus is the one imprinted on them by the presence or absence of a welcoming and directing board at the gates. No matter how small, a public building needs a clear directional signage system. Robert Brown, graphic designer, reported that there was a time in the US when even the universities' management thought that a signage system was not a real necessity (Brown, 1997). Brown, defending the case for better signage, has gone as far to say that "signs signify what an institution is really like" (*p*. 133) and that "good signs are a mark of courtesy" (*p*. 135). What is more, there is an important aesthetic side to the issue. A wayfinding system, properly and professionally designed, constructed, and put in place can make a campus much more enjoyable for its common users and for its visitors alike (Kuliga et al., 2013).

It is clear from the above report that failure to provide students with basic information is associated with negative outcomes—all troubling facets of student alienation. We said earlier that achieving quality in information services was a small investment with great rewards, but the opposite is also true: missing the investment opportunity turns the rewards into risks. Although the studies quoted above did not report directly on the association between poverty of information services and loneliness, the contiguity and adjacency of student disengagement and loneliness justify the possibility of a significant relationship between information services and loneliness. Timely, accurate, and complete information is a basic student need that, if unmet, puts in danger another no less serious need, namely the need to be securely and properly connected.

WHY SHOULD STUDENT LONELINESS BE WORRYING?

Although loneliness has always been dubbed as a discomfort and even a disease[1], it has not attracted the research attention it deserves until quite recently. When societies became so fragmented that entire segments felt rejected and discriminated against, the prevalence of feelings of loneliness started to surge. One of these stigmatized groups, the HIV positives in the early 1980s, seems to have directly triggered interest in research on loneliness[2]. Students, however, were never suspected and remained unstudied. Even Cacioppo's seminal study on the physical damage caused by loneliness, which was done on a student sample, was never meant to report on the student population, but targeted the lonely in general.

In the mid-1990s, Cacioppo conducted an experiment on undergraduate students to check whether subjective feelings of loneliness had an impact on physical health. Cacioppo took three groups of students, a group who felt really lonely, a second group who felt somewhat lonely, and a third group who did not feel lonely at all. Many aspects of the students' health were monitored for an entire week. The results showed significant differences in the health records of the three groups. Unlike the two other groups, the lonely presented many serious symptoms of distress, such as poor sleep quality, high levels of cortisol (the hormone now blamed by many as public health enemy number one for the havoc it creates in both body and mind), and vascular resistance (an early sign of high blood pressure). The destructive health risks of the amounts of cortisol secreted in the blood due to feelings of loneliness have been likened to those of smoking and obesity (Tate, 2018),

Another worrying aspect of student loneliness is its degree of prevalence. Levels of prevalence have been reported to vary between 30% and 50%, which, many argue, are epidemic levels (Schimpff, 2019). One Turkish study even reported a prevalence rate of 60.2%. A study on German students (Diehl *et al*., 2018) using Weiss's bidimensional loneliness scale reported an incidence rate of 35.6%. Another study (Dagnew & Dagnew, 2019) reported a prevalence of 49.5% but also found significant year-of-study differences, with first year students 2.47 times more likely than later years to feel lonely. Other research on British students showed that 46% reported feeling lonely, of whom 37% considered dropping out (Sodexo Report, 2017). Arab students have also been investigated but none of the studies reported prevalence rates; the means, however, were moderate (Al-Kadoumi, *et al*., 2012). Gender differences have also been explored, but the results have been inconsistent (Maes *et al.*, 2019). What seems consistent though is the small magnitude of gender differences in loneliness. In whatever direction differences were reported, they were always small.

FELLOW STUDENTS TO THE RESCUE

Research on interventions to reduce or eliminate loneliness has shown that there are four major treatments, namely (i) improving social skills; (ii) enhancing social support; (iii) increasing opportunities for social contact; and (iv) addressing maladaptive social cognition. Meta-analyses on the comparative effectiveness of the four methods have shown that a rehabilitation of maladaptive social cognition may be the best treatment (Masai *et al.*, 2011). Later research (Cacioppo *et al*., 2015) suggested that the fourth method, when complemented with medication[3], could yield even better results.

But how feasible and affordable is all his? Many mental health facilities, even in renown universities, have been overwhelmed. Wait times seem to be too long, and many students took their own lives before their turns could even come. Recently, to shorten wait times, a Canadian university had to add 6 mental health workers to its already quite substantial counseling staff. Aware of the unbearable

1 In the *Diagnostic and Statistical Manual of Mental Disorders-V* (APA, 2013), loneliness is not a mental illness but a significant risk factor. The bodies and minds of lonely people are a fertile ground for many physical and mental illnesses.

2 This is probably a second wave of interest in loneliness since Fromm-Reichmann (1889 – 1957) is also believed by many to have ignited a first wave in her studies on the loneliness of the deaf (1957).

3 The medication in question is a neurosteroid believed to rapidly ease hypervigilance in the brain.

wait times, students started to turn to one another for help, and the results were often encouraging. This move is actually more of a necessary short cut than a real alternative since counselors themselves advise students who are feeling lonely to reach out, connect, and share. The present study tests just this. To what extent do informal student networks protect against the morbid effects of poverty of information services? Is the quality of peer relationships consequential enough to inhibit the action of poor information services on student loneliness?

Developmental and attachment psychologists have consistently shown that healthy connections are crucial across the lifespan (Shaver *et al.*, 2016). In college students, they have been reported to play a positive role in adjustment and success (Linnenbrink *et al.*, 2016) and to also help in preparing the student, who is an emerging adult, to steer the challenging transition to adulthood successfully (O'Connor *et al.*, 2011). Research has even reported that peers in emerging adulthood may be the most influential attachment figures (Fraley & Davis, 1997), somewhat dethroning parental influence. In addition to being a factor in healthy development, positive attachment has also been found to help in stressful situations. Resilience research has provided ample evidence that positive attachment is a basic strength that allows individuals, groups, and entire communities not just to bounce back but to also thrive under adversity (Southwick *et al*., 2014).

While quality of student networks is an unlikely substitute of the official information apparatus in terms of information provision and delivery, it is likely to satisfy at least part of the students' connection needs and to ultimately protect them from being prey to feelings of loneliness. In the same way that lack of necessary information disrupts students' involvement and engagement potential, informal student networks are likely to create possibilities and opportunities for students to connect, bind, and share. In other words, student networks are likely to inhibit the action of poverty of information services on students' connectivity possibilities.

Statement of the Hypotheses

Hypothesis 1

A campus environment fraught with uncertainties due to lack of basic, accurate, and timely information does not inspire safety of engagement; it rather undermines it. Campuses poor in information services are likely to alienate students by increasing their feelings of loneliness.

Hypothesis 2

Students who enjoy healthy relationships with peers are protected from the alienating impact of poverty of information services, while those whose peer networks are weak remain exposed to the impact of poor information services and see their feelings of loneliness grow.

Method

A Brief Description of the IHE under Study

The faculty in question started in 2008. It was built to help ease the pressure on two "neighboring" universities, one 204 kilometers away and the other 380 kilometers away. The faculty is actually affiliated with the latter, farther one. Another reason for building the faculty was to give local students access to higher education because many high school graduates, especially females, were often prevented from traveling that far to carry on with their studies. It was a much-welcome "inclusion" decision for the local population. The faculty is now the only non-vocational institution of higher education in a radius of 204 kilometers and is rather small. The total area of the faculty is about 3.5 hectares, mostly buildings, overwhelmingly classrooms. The faculty has neither accommodation nor sports facilities. There are also no medication or counseling services, not even a first-aid corner. There are also no special spaces for

extracurricular activities such as sports, theater, music, debate, etc. There is a small café though where students can sip their mint-tea or have a cold sandwich. The faculty hosts a bit more than 3,000 students, with a registered average yearly increase fluctuating between 5% and then 10%. The ratio of faculty to students is around 1:70 and is increasing because of rising teacher turnover. Income disparity (pay gap) within the institution is about 20:1.

Sample and Procedure

The sample consisted of 439 students (see Table 1 for more details), which represents a substantial proportion of the entire student population. The sample was diverse enough to reflect the student population in terms of categories of age, gender, mother-tongue, residence, family size, departments, and year-of-study. Data were collected by means of a questionnaire in the middle of the Spring semester to avoid their contamination by the stresses of the beginning and end of the semester. The goals of the research were explained to the participants and their consent was sought. Of all the students addressed, only a negligible number refused to take part. The sweeping majority asked to be given a copy of the questionnaire to complete and even asked to be shown the results when they are out. The questionnaire was translated into modern standard Arabic and the Arabic version was discussed and piloted. The words that seemed to create some ambiguity to some of the participants in the pilot study were further clarified with a parenthetical synonym in *Darija*, the local variety.

Instruments

Quality of Information Services. This is a basic 6-item measure of the extent to which students feel satisfied with the quality of the information they receive. The wording "information services" is used in its most comprehensive sense to include not only information desks but all custodians of information to students, including teachers. Also, the word "quality" in "quality of information services" should not refer to any analytical conception of quality such as the one measured for instance by SERVQUAL instruments (Parasuraman *et al*., 1985). The scale items tap very basic information needs, including general availability and availability by domain. The scale contains items like "I get enough information on matters related to my studies.", "When I'm stuck or confused about some aspect of my studies, the information services always do their best to assist me." "Enough information on the testing system has been provided early in the semester.", and "Study goals have been explained to me." The items are rated from 1 (totally disagree) to 4 (totally agree). The scale has a good internal consistency (α = .77) and is largely unidimensional, with a one-factor solution explaining 61.88% of the total variance.

UCLA Loneliness Scale. This is a 20-item measure of generalized loneliness (Russel *et al*., 1996). It measures respondents' subjective feelings of loneliness. The scale contains items like "I feel in tune with the people around me.", "I lack companionship", and "My social relationships are superficial." Response categories represent degrees of agreement rather than frequency of occurrence. The items are rated from 1 (totally disagree) to 4 (totally agree). The scale has a high internal consistency (α = .88) and is also largely unidimensional. Factor analysis results, including a scree plot, show the presence of a clear elbow indicating a leveling off of eigenvalues after the sharp slope from one principal component (eigenvalue = 6.28). Statistically, a five-factor solution is suggested accounting for 55.81% of the total variance. Conceptually, however, only the one-factor solution made sense.

Quality of Student Networks. This a 12-item measure of the extent to which students feel satisfied with different aspects of their relationships with their classmates. The scale contains items like "It's a pleasure to be with my classmates." and "I exchange home visits with my classmates.", and "I expect my relationships with some of my classmates to last." The items are rated from 1 (totally disagree) to 4 (totally agree). A factor analysis yielded 3 factors explaining 63.41% of the total variance, more than two

thirds of which being explained by the first factor alone. The difference in eigenvalues between the first factor and the two other factors is very large (5.07, 1.92, and 1.25, respectively). The scree plot displays a clear elbow at the level of the first component. An Oblimin rotation of the factor solution shows rather high inter-factor correlations, especially between factor 1 and factor 3. The large discrepancy in eigenvalues and the scale's Cronbach alpha of .87 point to the possibility of using the unified scale as unidimensional entity.

RESULTS

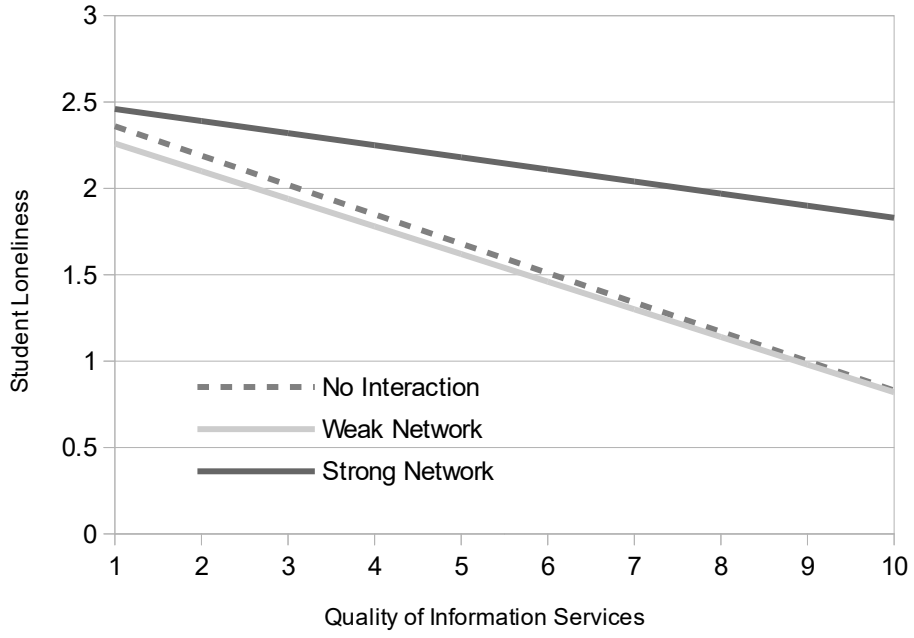
Univariate statistics yielded the results summarized in Table 1 below. The mean score (2.05) shows that the students, as a group, are not satisfied with the quality of information services—2.50 being the scale's midpoint. Looking at the percentage scores, 64.2% of students are not satisfied. While there are no gender differences in levels of satisfaction, year-of-study shows significant differences, with third-year students less dissatisfied than first-year students ($p < .05$). Concerning feelings of loneliness, the sample as a whole showed a prevalence of nearly a quarter, the sample mean being 2.09, which is clearly below the scale's midpoint. Females felt a bit more lonely than males ($p < .01$). Levels of loneliness did not vary with year-of-study ($p = .07$). The results show that the students seem to enjoy fairly good relationships with their peers. The sample mean of 2.80 is on the positive side of the scale, with a bit more than three quarters of the students being satisfied. A significant difference was found between second- and third-year students, with the latter being more satisfied ($p < .05$).

To test the buffering role of quality of student networks, two analyses were conducted. A first analysis tested the significance of the regression equation of quality of information services on feelings of loneliness (hypothesis 1). And a second analysis, based on the significance of the first one, tested the interaction of quality of student networks on the relationship with quality of information services (hypothesis 2). The results of both analyses were significant. Controlling for gender and year-of-study, quality of information services had a significant impact on feelings of loneliness ($\beta = -.17^{**}$, $p < .01$). After the introduction of quality of student networks as a moderator variable, the impact of quality of information services on feelings of loneliness lost significance ($\beta = -.07$, $p > .05$), suggesting that strong student networks provided full protection from the dire effects of poor information services. Students who were poorly connected to other students were not protected and therefore saw their levels of loneliness go up as a result of the low quality of information services ($\beta = -.16^{**}$, $p < .01$). Figure 1 shows the regression lines representing the buffering role of quality of student networks. The dashed line and the light gray line are almost identical, meaning that for students whose relationships with peers are weak, poverty of information services still takes its toll unchecked (steep slope of the lines). The dark gray line, however, shows a flattening up of the slope, meaning that the impact of poverty of information services on student loneliness is not significant anymore. Students who are part of a strong network are protected from the morbid effects of poverty of information services. Strong student networks make a difference; weak ones don't.

Table 1: Descriptive

	Frequency (%)	*M*	*SD*	*α*
Age	-	*20.21*	*1.89*	-
Gender	*N = 439* *Females: 265 (60.4%)* *Males: 174 (39.6%)*	-	-	-
Year of Study	*First Year: 215 (49.0%)* *Second Year: 179 (40.8%)* *Third Year: 45 (10.2%)*	-	-	-
Quality of Information Services	*Satisfied: 157 (35.8%)* *Not Satisfied: 282 (64.2%)*	*2.05*	*.76*	*.77*
Loneliness	*Lonely: 98 (22.3%)* *Not Lonely: 341 (77.7%)*	*2.09*	*.49*	*.88*
Quality of Student Networks	*Satisfied: 336 (76.5%)* *Not Satisfied: 103 (23.5%)*	*2.80*	*.54*	*.87*

Fig. 1: Buffering Role of Student Networks



DISCUSSION

The present section discusses the underlying meanings as well as the theoretical and practical significance of the three major findings of the present study: (i) the large prevalence of dissatisfaction with the quality of information services on campus, (ii) the association of poor information services with increased feelings of loneliness among students, and (iii) the protective role of informal student networks. A conclusion with implications for theory and research is also included.

FAILING TO GIVE STUDENT SATISFACTION ITS DUE VALUE

Nearly two-thirds of surveyed students (64.2%) found the quality of information services to be unsatisfactory. From an IHE management perspective, a properly functioning information service is probably one of the least challenging of tasks, especially when the IHE in question is very small. What is even more alarming is that the institution in question is an IHE, a "knowledge-based organization *par excellence*. Its raw material is information and its output is information." as Collier (1994, *p* 214) put it. For an organization of this nature, it is almost inconceivable that it should fail to properly inform its students. It is as if it is betraying its own nature and alienating itself. What might have gone wrong to lead to such a magnitude of dissatisfaction? What might prevent an IHE from providing and delivering basic and necessary information to its students? Three main explanations come to mind.

Probably the most obvious explanation of all is that the IHE under study holds a monopoly, so to speak. As mentioned in the introduction, it is the only non-vocational IHE in a stretch of land nearly twice the size of Belgium and the Netherlands put together. The vices associated with monopolies are quite numerous, but suffice it to mention the weak urge and poor incentive to produce high quality services, as well as the accompanying false belief that the institution is healthy, safe, and sustainable (Le Grand, 2009). Whether in addition to monopoly, public ownership is also a factor, is a debatable issue. It is true that private universities have been burgeoning in the country and are actually attracting many of the best students, but service quality cannot be accounted for by private ownership and market forces alone. There are government requirements and controls that may also be as effective and as stimulating as free market competition in pushing public IHEs to produce high quality services. No less consequential also are public expectations and the ensuing image and reputation of a public IHE.

The second possible culprit may be lack of a clear information strategy within the institution. Clots and/or constipations in the information systems of IHEs have been blamed more on organizational culture than on organization size. No doubt, information flow in IHEs has quite often been reported to represent a substantial management challenge in modular multi-campus universities, but closer inquiries have also shown that information flows can be problematic even in small IHEs (Dhillon, 2000). Regardless of size, when an IHE lacks a clear information strategy that defines the elements and relationships within the institution's information flow diagram (IFD) (Durugbu *et al*., 2013), it sooner or later ends up in a situation where there is little managerial control over which information the students need and which information is actually delivered to them—let alone control over the timing, accuracy, and consistency of the information delivered. Although the data from the present study refer mainly to availability of information as the major problem, sheer provision is not a convincing long-term solution. Information may be deficient in many ways, including quality and timing. To make sure all these problematic aspects are under control, a thorough information strategy is needed. Such a strategy should explicitly contain the following: (i) the different types of information the students need so as to be able to manage their studies successfully, (ii) the responsibility for the information (the source that generates the knowledge that later circulates in the form of information), (iii) the quality of the information (accuracy, consistency, and completeness), and (iv) the communication of the information (the timing and the different media used).

Third, it is quite likely that the IHE management is reproducing the power distance pattern in the larger society. Morocco has been found to score very high on Hofstede's Power Distance scale (Hofstede,

2001). Power distance is a cultural dimension that reflects a community or an organization's pattern of power distribution. Morocco's score of 70/100 suggests that Moroccans are aware of the power gap, accept it as a given, and adhere to it. Acting on the principle of accepted power distribution, the school management might engage in decisions and behaviors that reflect very little appreciation for the true concerns of students—the latter being almost powerless. Large power distance is also known to be associated with autocratic behavior on the part of the management (Khatri, 2009) and prevents it from giving due consideration to the interests of the institution's different stakeholders. Within this particular management mindset, students are unlikely to be considered as a major stakeholder toward whom the IHE is also accountable. Rather, students seem to be considered more as recipients of a "free" service and therefore do not have much of a say as to how the administration should handle their affairs. Managerial autocracy, even in its benevolent form (if it has one), is not sustainable. Repeated disregard for stakeholder rights undermines the proper IHE-student bond and alienates students.

Alienation, a Probably Richer Framework for the Study of Loneliness

In line with the expectations, lack of basic and necessary information is associated with increased feelings of loneliness among students. This can be readily explained within an alienation framework: student loneliness is not only the subjective expression of unmet *social* connection needs, but it is also a possible expression of the violation of the proper character of the IHE-student bond. Handling loneliness within an alienation framework unveils its possible association with variables that are not strictly social in character. Consequently, organizational variables such as information flow should not be discarded from employee and student loneliness studies on the grounds that loneliness is a symptom of unmet *social* connection needs. The present study, however modest, is proof that an increase in loneliness can be the result of any management deficiency that severs the organization-student bond.

It is also useful for IHE management to think of loneliness as an aspect of alienation. Looking at loneliness that way brings it closer to the management attention. When managers understand loneliness as a possible consequence of a dysfunctional institution-student relationship—which it really is—then they are very likely to interpret it as symptom of deficient management and would do their best to remedy the situation. They are also likely to start linking loneliness to other aspects of alienation such as disengagement, absenteeism, attrition, work disruptions, and acts of hostility (Leopold, 2018). An interesting future research direction is to explore the factor structure of alienation in an educational context using an exploratory factor analysis (EFA) to see how its different aspects are related.

Another crucial benefit of reframing loneliness relates to the common belief that lonely people are entirely to blame for their feelings of loneliness. The present study is proof that the incidence of loneliness is probably more a matter of interaction than of simple causality. Some students may be predisposed to loneliness, but the loneliness is felt only when it is triggered by environmental factors such as, in this case, lack of necessary information. Research on the treatment and prevention of loneliness is indeed very useful and can make students less vulnerable to management mishaps, but the availability of protective measures and techniques should not justify the continued mismanagement. It is good to have students who have managed to develop good social skills and who are capable of spinning a healthy social web with their fellow students, but it is equally important to have a management that challenges rather than frustrates its students.

How Does Lack of Necessary Information Translate into Feelings of Loneliness?

From a psychological point of view, feelings of rejection and neglect are probably the mechanism through which being poorly informed ends up translating into feelings of loneliness. Rejection is often defined as the perceived denial of expected attention, interest, approval, or affection. Feeling rejected is a quite common occurrence in the daily lives of people. Despite their prevalence, experiences of rejection are often painful. Many laboratory studies of rejection have consistently shown that the neurochemistry

(chemical reactions and processes in the brain) and neural circuitry (parts of the brain involved in the process) observed during feelings of neglect and rejection are the very same ones observed during the experience of physical pain (Eisenberger, 2011, for a review). There is also linguistic evidence for the association between the two feelings since people often use words of physical pain to describe feelings of rejection or neglect (Mac Donald & Leary, 2005).

In the case of students, situations do arise when information which is deemed necessary is not made available. The resulting feeling is most probably one of neglect or rejection. In turn, the experience of rejection triggers a set of adverse reactions such as loneliness, low self-esteem, aggression, and depression (Leary, 2015). It might be argued that the explanation given above is proof that the association between poverty of information services and students' feelings of loneliness is mediated and not direct, which should therefore lead to a disconfirmation of hypothesis 1. The argument is interesting, though not necessarily true. Mediation analyses are types of elaboration analyses (Aneshensel, 2012) that seek to detect the mechanisms underlying apparently direct relationships. With the data at hand, the hypothesis is strongly supported, but as a hint for future research, a mediation study may be carried out in which feelings of rejection and neglect are also measured and a mediation (full or partial) model is tested. Until then, the relationship remains direct and well-supported.

The Buffering Role of Student Networks

As expected, healthy student networks protect from the negative impact of poverty of information services while poor ones don't. One, however, needs to be careful about the limits and nature of the exact role of student networks. As mentioned in the introduction, students are unable to replace the official information services of the IHE. What they do, however, is that they create an environment in which information—or what is fished or leaked of it here and there—is shared. The sharing and the *knowledge* that there is a sharing taking place take away the feeling of being rejected, isolated or neglected and therefore protect against feelings of loneliness. In the absence of reliable sources of information, the students may still pay a price if the information they share is not accurate, but the price they pay is "technical" rather than psychological and social. Neuroscience research has also corroborated the regulating and protective role of support networks. Experiences of social pain, caused by either feeling of exclusion, rejection or neglect, have been found to be regulated by social support (Yanagisawa *et al*., 2011).

Despite cultural differences, some commonalities always emerge. Commenting on the degree of prevalence of loneliness in his college, a US student recently published a blog lucidly titled "If you're lonely at university, you're not alone." (Ward, November, 1st, 2018). The title is a pun that perfectly captures a problem and its solution and runs perfectly in line with the findings of the present study. Without failing to draw the attention of readers to the crucial difference between "lonely" and "alone", the section "you're not alone" means two things: loneliness is so prevalent among university students and there's *help* around. Speaking from personal experience, what the blogger mainly meant by help was student networks. The resemblance of the state of this student-blogger with that of the majority of the sample of the present study is quite striking. Despite the large cultural, educational, and management gap between the US and Moroccan settings, the loneliness experience looks quite the same. The causes of the students' loneliness may also differ across nations and cultures, but the salutary role of student networks seems to defy the boundaries. Maybe this should come as no surprise as the need to connect is so basic to what it means to be human (Maslow, 1943; Cacioppo & Patrick, 2008).

Conclusion and Implications for Theory and Research

The present research has shown that the provision of even the most basic and necessary information to students can ward off the danger of student loneliness, isolation, and disengagement. In other words, a modest investment in information pays off in the most rewarding of ways: facilitating student engagement and connectivity possibilities. Conversely, missing this investment opportunity hurts

both the students and the institution. For an IHE—a "knowledge-based organization"—to fail at such a rudimentary task as the satisfaction of the basic information needs of its students is highly symptomatic of major management deficiencies. Although healthy student networks do play a regulatory role and protect students against the morbid impact of poor information services, this fact is rather to the management's discredit. The present study is also one possible way loneliness research, when framed within an alienation, can serve a good educational management purpose. Loneliness is just one possible way students can respond to a violation of the IHE-student bond. Disengagement, meaninglessness, absenteeism, attrition, study disruption, and violence on campus are other possible responses rooted in other management dysfunctions. A promising future study would be the exploration of how different IHE services, not just information, relate to all facets of alienation. The result would be a highly informative predictive model of how particular service deficiencies are associated with particular student responses. Management-wise, such studies are important not because they suggest new management possibilities, but because they systematically lay bare some of the outcomes of poor management and allow managers to make a few informed predictions. IHEs genuinely intent on being good service providers invest on service-user satisfaction, engagement, and loyalty. Failing to meet students' needs, IHEs undermine their reputation, jeopardize their own sustainability, and turn an opportunity into a threat.

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