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Organizational identification: Development and testing of a conceptually grounded measure

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There is continuing debate in the literature as to how organizational identification (OID) should be conceptualized and operationalized. We present a new six-item measure of OID that includes both cognitive and affective components and that integrates the main dimensions of OID found in the literature. The new measure comprises three main subcomponents: self-categorization and labelling, sharing of organizational goals and values, and a sense of organizational belonging and membership. The measure was tested on two separate samples of over 600 employees working in the UK National Health Service (NHS) using Confirmatory Factor Analysis. The results provided support for the proposed three-component conceptualization of OID. However, the three subcomponents were highly intercorrelated and showed low discriminant validity. We therefore propose a single overall measure of OID. This six-item aggregate scale has acceptable psychometric properties and provides a theoretically meaningful, but parsimonious, measure of OID for use in field research.

The notion of organizational identification (OID) has attracted increasing interest amongst organizational scholars in recent years. There are two related reasons for this heightened interest in the study of employee organizational identification. First, OID is seen as central to the analysis and understanding of the link between individuals and their employing organization (Ashforth & Mael, 1989; Dutton, Dukerich, & Harquail, 1994; van Dick, 2001; van Dick, Christ, Stellmacher, Wagner, Ahlswede, Grubba, et al., 2004). Second, employee identification with the organization is thought to have a number of potentially important benefits both for the organization and for employees themselves. Specifically, those who identify

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with their organization are presumed to be more likely to buy in to the organization's goals and activities and, therefore, be more motivated to work hard to achieve these goals (Ashforth & Mael, 1989; Cheney, 1983; Dutton et al., 1994). Organizations with high levels of employee identification, therefore, can be expected to benefit from a more cohesive work atmosphere and greater levels of cooperation and altruism, including greater levels of citizenship behaviour and support for the organization. Employees, on the other hand, can benefit from positive self-esteem and the satisfaction of the human need to belong (Ashforth & Mael, 1989; Rousseau, 1998).

Despite the growing interest in OID, however, there is still no clear consensus in the literature as to the precise meaning of the construct (Cheney & Tompkins, 1987; Dutton et al., 1994; Edwards, 2005; Meyer, Becker, & van Dick, 2006; Miller, Allen, Casey, & Johnson, 2000; Pratt, 1998; van Dick, 2001). This, perhaps, is not surprising given the complexity of the phenomenon involved and the range of psychological states that have been associated with it. As a result, there is still considerable disagreement as to the precise nature of OID, with different writers tending to emphasize different aspects of the phenomenon.

PROBLEMS OF CONCEPTUALIZATION

The conceptual confusion surrounding the notion of organizational identification is widely recognized in the literature (Edwards, 2005; Pratt, 1998; van Dick, 2001). As a number of writers have noted (Ashforth & Mael, 1989; Bergami & Bagozzi, 1996; Harquail, 1998), part of the reason for this confusion is the lack of clarity concerning the extent to which OID includes an affective and/or a cognitive component. Drawing on social identity theory (SIT), some researchers view OID in primarily cognitive terms, the focus in this case, is on the sharing of values and goals between the individual and the organization and on the extent to which individuals categorize themselves as being part of the organization as a social entity (Ashforth & Mael, 1989; Rousseau, 1998; van Knippenberg & van Schie, 2000) and/or see themselves as sharing key characteristics of the organization (Dutton et al., 1994). While recognizing the cognitive basis of identification, other researchers place more emphasis on an affective element linked to a sense of belonging to and membership of the organization (Edwards, 2005; Hall, Schneider, & Nygren, 1970; Harquail, 1998; Lee, 1969, 1971; Smidts, Pruyn, & van Riel, 2001; van Dick, 2001).

Additionally, there is confusion concerning the extent to which the concept overlaps with the notion of organizational commitment (OC) (Edwards, 2005; Pratt, 1998; Riketta, 2005; van Dick, 2001). In particular, there is disagreement about the extent to which OID includes overtly

behavioural components more typically associated with notions of commitment, such as various forms of behavioural involvement in the organization and/or intentions to act on behalf of the organization (van Dick, 2001). This potential conceptual confusion between OID and OC is reflected, for example, in the model of organizational identification recently proposed by van Dick, Wagner, Stellmacher, and Christ (2004; see also van Dick, 2001). These authors present an explicitly multidimensional model of OID consisting of four main subcomponents covering not only affective and cognitive psychological states commonly linked to OID such as emotional attachment to the group, but also evaluative and behavioural elements more commonly associated with aspects of OC, such as pride in the organization, active participation in organizational activities and elements linked to loyalty.

The conceptual confusion between identification and commitment is compounded by the fact that most of the main definitions of OC proposed in the literature (e.g., Cook & Wall, 1980; Meyer & Allen, 1991; Mowday, Steers, & Porter, 1979; O'Reilly & Chatman, 1986) include some element of identification. In the most widely used early conceptualization of organizational commitment, Mowday and his colleagues, for example, define OC as "the relative strength of an individual's *identification* with and involvement in an organization" (1979, p. 226, emphasis added). Specifically, they suggest that OC comprises three main factors: "(1) a strong belief in and acceptance of the organization's goals and values, (2) a willingness to exert considerable effort on behalf of the organization, and (3) a strong desire to maintain membership of the organization" (p. 226). Similarly, Cook and Wall (1980), in the most widely used British-based conceptualization of organizational commitment, view OC in terms of three related components. These include identification, involvement, and loyalty. Identification refers to "pride in the organization and the internalization of the organization's goals and values", while involvement refers to "a willingness to invest personal effort as a member of the organization, for the sake of the organization", and loyalty refers to "affection and attachment to the organization, a sense of belongingness manifesting as a wish to stay" (pp. 40–41). Later conceptualizations of OC by, for example, O'Reilly and Chatman (1986) also include notions of identification and internalization as key aspects of commitment. The same is true of the most widely used contemporary conceptualization of organizational commitment, namely Meyer and Allen's (1991) notion of affective commitment to the organization. As argued by Meyer and Allen, affective commitment refers to the psychological bond that ties the employee to the organization and is explicitly defined as the "employee's emotional attachment to, *identification* with, and involvement in the organization" (p. 67, emphasis added).

Most recently, Meyer et al. (2006) have contributed to the debate by presenting their perspective on how *commitment* (in a very broad sense) differs from *social identity*. Despite Meyer et al.'s contribution, the overlap between organizational identification and organizational commitment remains unclear, partly due to the all-encompassing nature of their conceptualization of commitment. They define commitment as "a force that binds an individual to a course of action" (p. 667) that includes for example, affective commitment, continuous commitment, normative commitment, and associated cognate constructs such as value congruence, maintenance of membership, collective goals, value congruence, and obligation amongst other factors. Additionally their analysis does not address directly the problem that organizational commitment and organizational identification are used and defined almost as the same concept. As noted by a number of researchers (Morrow, 1983), such conceptual overlaps are not uncommon in the OB literature. Until such overlaps are clarified in terms of OID and OC, however, problems of concept redundancy are bound to limit the theoretical usefulness of the notion of organizational identification and add to the uncertainty surrounding the concept itself (Ashforth & Mael, 1989; Edwards, 2005; Pratt, 1998; Riketta, 2005; van Dick, 2001). A need exists, therefore, to present a rigorous conceptualization that helps to clarify the boundaries between these two important constructs.

PROBLEMS OF OPERATIONALIZATION

As well as there being disagreement about the actual meaning of organizational identification, there is also uncertainty about how best to measure it. Early OID scales (e.g., Brown, 1969; Hall et al., 1970) suffered from a number of problems, chief of which was the fact that they exhibited only a weak link between how the notion was conceptualized and how it was operationalized in practice (Edwards, 2005). Similar problems also apply to later scales, including Cheney's (1982) 25-item Organizational Identification Questionnaire (OIQ). The Cheney measure, although widely used, has some fundamental problems. In particular, the 25 items cover a very wide range of themes, many of which (e.g., involvement, OCB, pride, loyalty, and desire to stay) are not clearly linked to Cheney's original conceptualization of the construct. The broad sweep of items included in the measure means that it is likely to be tapping constructs other than organizational identification and thus it will suffer from the problem of contamination (Edwards, 2005). Although recent research (Guatam, van Dick, & Wagner, 2004) tests whether the Cheney measure is distinct from organizational commitment, the OIQ still suffers from the problem that the items do not link with how Cheney conceptualized the construct in the first place and from the fact that

the scale itself "essentially provides a broad measure of commitment" (Miller et al., 2000, p. 648).

Problems of slippage between conceptualization and operationalization have also been raised with Mael and Ashforth's (1992) six-item scale, which has become the main measurement tool (Edwards, 2005; Riketta, 2005) used by researchers in the area (e.g., Bamber & Iyer, 2000; Cole & Bruch, 2006; Herrbach, 2006; Moye & Bartol, 2001; van Knippenberg & Sleebos, 2006, van Knippenberg, van Knippenberg, Monden, & de Lima, 2002; van Knippenberg & van Schie, 2000; Weisenfeld, Raghuram, & Garud, 1998). In their conceptualization of OID, Ashforth and Mael (1989; and, subsequently, Mael & Ashforth, 1992) place a strong emphasis on the cognitive element of identification (e.g. self-categorization and the sharing of goals and values) and explicitly suggest that previous authors have "confused the concept . . . with affect" (1989, p. 23). However, the items in their 1992 scale do not seem to be cognitively oriented. As van Dick (2001) suggests, the cognitive element of Mael and Ashforth's scale "is totally neglected" (p. 271). In the main, the Mael and Ashforth (1992) scale seems to have an affective flavour. Furthermore, researchers have raised other problems with the Mael and Ashforth (1992) measure, Abrams and de Moura (2001), for example, argue that the scale is "predominantly concerned with public expressions of identification rather than its subjective meaning" (p. 137). This problem may be due to the fact that five of the six items in the scale originate from the "shared experiences" component of Mael and Tetrick's Identification with a Personal Group scale (1992, p. 816). Additional to this, the measure does not take into account the fact that there may be sub-dimensions to the notion of organizational identification (e.g., the sharing of the organizations values versus self-categorization and a sense of belonging). In summary, the Mael and Ashforth (1992) scale has its problems. First, the items do not relate closely to how Mael and Ashforth conceptualized the notion. Second, the items focus on the public expressions of identification. And, third, no attempt is made to cater for possible sub-dimensions of the measure.

Although the OIQ and Mael and Ashforth's (1992) scale are the main measures of organizational identification that have been used by researchers in the field, a number of researchers have used other measures of OID (e.g., Abrams & de Moura, 2001; Smidts et al., 2001). However, these measures have tended to be based on previous social identity scales and have not been specifically designed to measure OID linked to a careful conceptualization of the construct. In addition, these other measures have not explicitly taken into account the possible multifaceted nature of the construct.

Because of the problems associated with existing organizational identification scales, some researchers have recently attempted to develop alternative identification measures in a slightly different form. An interesting

addition to the area is a one-item graphical measure of OID (Bergami & Bagozzi, 2000; Dukerich, Golden, & Shortel, 2002; Shamir & Kark, 2004). Although interesting, it remains a one-item measure and as such is problematic due to potential limited reliability and validity. Shamir and Kark (2004) accept that there are problems with this measure and argue that it is "not superior to verbal scales of organizational identification" (p. 121), implying that further work is needed to ensure the development of a robust measure of OID.

In summary, existing conceptualizations and operationalizations of organizational identification are still being contested and further theoretical and empirical work is needed to help bring clarity to the area. The lack of a clear, agreed conceptualization and operationalization of OID can only hinder empirical progress in the field. This is highlighted by the results of Riketta's (2005) recent meta-analysis of organizational identification studies. These show that the expected correlates of OID differ significantly depending on the measure of OID used, thereby making it more difficult to make sense of the role that organizational identification plays in organizations. As the literature stands at the moment, therefore, there clearly is a need to develop a rigorous operationalization of OID, one that has a strong conceptual underpinning and that is explicitly linked to the way the notion is conceptualized in the first place.

The present study attempts to contribute to the area by presenting a more clearly articulated and integrated conceptualization and operationalization of organizational identification. The conceptualization used here is specifically designed to integrate some of the main dimensions or approaches to organizational identification found in the literature while, at the same time, explicitly differentiating this construct from the wider notion of commitment. A new scale for measuring OID is then presented and tested using confirmatory factor analysis on two separate samples of employees working in a UK National Health Service (NHS) Trust.

RECONCEPTUALIZATION OF ORGANIZATIONAL IDENTIFICATION

Based on a recent review of the organizational identification literature (Edwards, 2005), organizational identification is defined as: *a psychological linkage between the individual and the organization whereby the individual feels a deep, self-defining affective and cognitive bond with the organization as a social entity*. Specifically, OID can be said to comprise of three main subcomponents which, when taken together, define the strength or depth of individual's affective and cognitive bond with their employing organization. The first component relates to the categorization of the self and self-labelling. This aspect of OID refers to the process by which individuals

categorize themselves as members of the organization as a social category and, through this process, effectively label themselves as organizational members (Ashforth & Humphrey, 1997). The more individuals come to view and define themselves in terms of their organizational affiliation, therefore, the more strongly they can be said to identify with the organization. This element is in accordance with some of the tenets of social identity theory and has been discussed in relation to organizational identification by Ashforth and Mael (1989), Dutton et al. (1994), and van Dick (2001).

The second subcomponent involves the integration of goals and values. It refers to the extent to which employees share the values and goals of the organization and integrate them into their own belief system (Ashforth & Mael, 1989; Hall et al., 1970; Patchen, 1970; Pratt, 1998). The more individuals feel that they share key perceived organizational goals and values, therefore, the more strongly they can be said to identify with the organization. This aspect of identification has also been discussed previously by OID researchers. It is an important aspect of the conceptualization of OID proposed, for example, by Hall et al. (1970), Ashforth and Mael (1989), and Dutton et al. (1994, via shared characteristics), amongst others. Some debate exists concerning the process that leads to the sharing of values. Pratt (1998), for example, suggests that this sharing can occur through a process of affinity or of emulation, whereas Rousseau (1998) suggests that the sharing of values and the linking of the organization's identity with the individual's self would only occur in a state of deep structure identification. However, it is clear that central to most of the conceptualizations of OID proposed in the literature is the idea of employees sharing the organization's goals and values, which here we treat explicitly as one of the key defining characteristics of identification.

The third component of OID involves the affective attachment of the individual to the organization. Specifically, this refers to the extent to which employees experience a sense of attachment to, belonging and membership of the organization. The greater individuals' sense of attachment and belonging to their employing organization, the more strongly they can be said to identify with the organization. Again this element has been mentioned by previous authors in relation to organizational identification (Brown, 1969; Lee, 1969; Smidts et al., 2001; van Dick, 2001) and as we have seen is a central feature of some of the main conceptualizations of OID to be found in the literature (Hall et al., 1970; van Dick, 2001). Arguably, this element follows from tenets of social identity theory that individuals who identify with a social group can be expected to feel a sense of membership and a sense of belonging to the group in question. Affective attachment to the organization, therefore, can be seen as a defining characteristic of OID and is explicitly treated as such in the present conceptualization.

Two points should be noted about the present conceptualization. First, by emphasizing a sense of belonging and membership, as well as the sharing of values and goals and self categorization, the conceptualization explicitly emphasizes both affective and cognitive components of OID. Specifically, the feeling of belonging and membership taps the more affective component of identification, while the other two subcomponents represent the more cognitive aspects of OID.

Second, although the present conceptualization involves three subcomponents which, it is argued, make up the subjective state of identification, it deliberately limits the coverage of the notion to help distinguish OID from the broader concept of organizational commitment. Specifically, the subjective state of OID is explicitly assumed not to include individuals' evaluative reactions to the organization, such as pride (often associated with OC). Nor does it include intentions to act or actual behaviours, such as the intention to stay or putting oneself out on behalf of the organization. In contrast, organizational commitment is a much broader concept that, apart from covering aspects of identification, also includes secondary states such as pride, intentions to stay or intentions to engage in participative or citizenship behaviours (see, for example, Cook & Wall, 1980; Mowday et al., 1979). As such, OID can be considered as a specific subset of the wider notion of organizational commitment and, therefore, as a central component of the broader construct of OC as commonly conceptualized in the literature (Cook & Wall, 1980; Edwards, 2005; Meyer & Allen, 1990; Mowday, Steers & Porter, 1979).

In summary, therefore, the individual elements of the three-component conceptualization of identification presented here are not necessarily new. Taken together, however, they provide a comprehensive conceptualization of the construct that integrates key dimensions of organizational identification previously highlighted in the literature. In particular, this conceptualization is useful in that it helps to clarify the conceptual boundaries of organizational identification, at the same time highlighting the fact that OID is more specific than the much broader concept of organizational commitment and can be considered a distinct subcomponent of OC.

In line with the proposed conceptualization, specific scale items were developed for each of the three subcomponents of OID. In confirmatory factor analysis, the organizational identification construct can, in principle, take three possible forms. First, OID may consist of a unidimensional aggregate of the items used to tap each subcomponent. In this case OID would emerge as a unidimensional construct with all items loading onto a single common latent factor. Second, OID may consist of the three separate subdimensions. In this case the items for each subcomponent would be expected to load onto the three corresponding elements separately. And third, organizational identification may be a latent construct that operates at

a higher level of abstraction than the three subcomponents (see Law, Wong, & Mobley, 1989, for a discussion of different forms of multidimensional constructs). In this case the individual scale items would load onto the three subcomponents separately which, in turn, would load onto a single overall second order latent factor. In the analysis we tested which of these forms organizational identification took by comparing the fit of three alternative confirmatory factor analytic models, namely, a one-factor unidimensional model, a three-factor model consisting of the three subcomponents of self categorization and labelling, value and goal synergy, and feelings of belonging and membership, and a second order latent model of organizational identification.

METHOD

Sample

As part of a larger project designed to investigate human resource practices and employee attitudes in an NHS mental health Trust in the south of England, two studies were carried out to test the psychometric properties of the new OID scale. The first included a sample of 676 respondents who participated in an anonymous questionnaire survey (attached to payslips) in the Trust. The sample, which comprised 36.5% of the employees in the organization (the total number of employees at the time of the first survey was 1850), covered a range of occupational groups including, for example, qualified and unqualified nurses, doctors, psychologists, physiotherapists, ancillary and maintenance workers, administrative and clerical employees, and managers. In total, 74% of the respondents were female and the average job tenure was 5.4 years. Scale testing was first carried out on this total sample. To check for consistency of results and ensure that there were no occupational effects, the analysis was then repeated with two separate occupational subsamples consisting of 359 nurses and 133 professionals (e.g., doctors, psychologists, and dentists), respectively. These two groups were chosen because they yielded big enough samples for confirmatory factor analysis.

The following year, a second study was carried out in the same (though slightly bigger) NHS Trust to cross-validate the analysis carried out with the initial sample. The sample for the second study consisted of 768 employees covering 32% of the people employed by the Trust (the number of employees in the Trust had increased to 2400 through acquiring a new health service geographical area). Seventy three per cent of respondents were female and the average job tenure of the sample was 5.6 years. As with Study 1, scale testing in the second study was first carried out on the total sample and then again separately on two

occupational subsamples of nurses ($n = 408$) and professionals ($n = 133$) respectively.

Missing data were not considered a particular problem in either sample since the number of missing responses for each item was limited. Nonresponses ranged from 6 to 14 cases for any one item in the primary sample, and from 2 to 14 for any one item in the subsequent sample. Given the limited amount of missing data, a listwise approach to the deletion of cases in the analysis was used.

Reoperationalization of organizational identification

Six questionnaire items were used to measure the three subcomponents of organizational identification discussed above, two items for each subcomponent.

Self-categorization and labelling. The items used to tap the extent to which individuals categorized themselves within the organization and effectively labelled and saw themselves as an exemplar of that category were: ''My employment in the NHS is a big part of who I am'' and ''I consider myself an NHS person''. The first of these items is central to the concept of OID in almost all conceptualizations presented over the years. A positive response to this item should indicate that the organization is firmly embedded in the employee's own sense of self; the same is true of the second item, although in this case the item is also designed to target the perception that the self is a part of the organization as a whole.

Sharing organizational goals and values. The two items used to measure the extent to which individuals perceived their values and goals as being the same as those of the organization were: ''What the NHS stands for is important to me'' and ''I share the goals and values of the NHS''. Again these questions are designed to tap a key component of organizational identification that has been emphasized by OID researchers over the years, namely the idea that the values of the organization, what it stands for and its goals, are shared by the individual.

Sense of attachment, belonging, and membership of the organization. The items used to measure the extent to which individuals felt a sense of attachment, membership and belonging to the organization were: ''My membership of the NHS is important to me'' and ''I feel strong ties with the NHS''. The first item provides a direct measure of what it means for someone to identify with the organization by assessing the importance that they attach to organizational membership. Similarly, feeling strong ties with

the organization is a distinct indicator of OID based on an assessment of the extent to which employees are attached to that organization.

It is worth noting that although the precise phrasing of most of the items outlined above is different from that of many other measures used previously, a number of the present items were adapted from existing scales. For example, the belonging and membership items are similar to some of the items in a social identification scale used by Abrams, Ando, and Hinkle (1998). Additionally, the two shared-values items are similar to items used by O'Reilly and Chatman (1986) to measure the identification component of their psychological commitment construct internalization. Importantly though, the six items used in the present study were all explicitly designed to reflect and measure the proposed reconceptualization of the OID construct presented here.

Additional variables

The specific analysis procedures used to examine the psychometric properties of the new OID scale are discussed in the relevant results section below. As part of the overall analysis, however, we used five variables to test for the discriminant validity of the three organizational identification subcomponents described above. Specifically, in both Study 1 and Study 2 we collected information on two potential antecedents of organizational identification, namely procedural justice and distributive justice (author removed for blind review). Following Price and Mueller (1986), distributive justice refers to "the degree to which rewards and punishments are related to performance inputs" (p. 127), while procedural justice, for the purpose of the present study, was defined as fairness in the way formal rules and policies concerning decisions that affect employees are made and applied (Rhoades & Eisenberger, 2002). These two variables were measured with three-item scales adapted from Neihoff and Moorman (1993) for procedural justice, and Price and Mueller (1986) for distributive justice.

In addition, three outcome variables often associated with OID (Riketta, 2005) were measured using, in each case, three-item scales. These included prosocial helping behaviour, organizational involvement, and intention to leave. The helping behaviour measure used is a form of prosocial helping behaviour, defined by Podsakoff, MacKenzie, Paine, and Bachrach (2000) as "voluntarily helping others with, or preventing the occurrence of, work related problems" (p. 516). The items used were adapted from Williams and Anderson (1991). The intention to leave the organization measure was adapted from Price, Mueller, and Currivan (1992). Finally, organizational involvement covers Cook and Wall's (1980) involvement subcomponent of organizational commitment and refers to the extent to which people feel like

they are making an effort not just for themselves but for the good of the organization as well.

Analyses

In Study 1, the psychometric properties of the six-item OID scale were tested using confirmatory factor analysis with Lisrel 8.80 (© 2006). A range of analyses were carried out with a number of specific datasets that were imported into Lisrel from SPSS. With each of the datasets, the data were treated as ordinal and polychoric correlation matrices with associated asymptotic covariance matrices were used as input in the analysis. In all cases a WLS approach was used in accordance with Joreskog's (2005) guidelines for the treatment of ordinal data.

As part of the analysis a number of models were first tested with the primary sample for Study 1. Specifically, three models were tested and compared using first the total sample, and then the two occupational subsamples of nurses and professionals. The first model was a one-factor model where all six items were assumed to load onto a single unidimensional construct. The second was a three-factor model where relevant items from the scale were assumed to load onto three separate dimensions corresponding to the self-categorization and labelling, values and goal synergy, and belonging and membership components of OID. The third model was a second order model where the six individual items were assumed to load onto three separate subcomponents, but where the subcomponents were, in turn, assumed to combine to form a higher order latent construct of organizational identification. The same analysis procedures were applied to the data from Study 2, with the three models being tested first with the total sample and then separately with the subsamples of nurses and professionals.

In addition to the main CFA, further tests were carried out to ensure that the OID construct was distinct from two other key constructs that researchers have often suggested are part of the wider concept of organizational commitment. The two constructs in question include organizational involvement and loyalty (intention to stay) which, as we have seen, along with identification are often argued as combining to make up the broader notion of OC (Cook & Wall, 1980; Mowday et al., 1979). In terms of the present conceptualization, involvement and loyalty are presumed to be potential outcomes of the central subjective state of identification (Edwards, 2005) and, hence, to be separate and distinct from the proposed OID construct. To test whether involvement and loyalty are conceptually distinct from OID, separate confirmatory factor analysis was carried out including the six OID items together with the six other questionnaire items described above designed to measure involvement and

intention to leave (reversed loyalty) respectively. The specific analyses involved are discussed more fully in the relevant results section below.

In order to test the adequacy of the confirmatory models, a number of key model fit indices were examined as part of the analysis. Table 3 sets out the range of indices used here. First, the χ^2 and degrees of freedom are presented along with the corresponding χ^2/df ratio. In line with the recommendations of Hu and Bentler (1999) and Joreskog (2005), the chi square statistic used here is the Satorra-Bentler Scaled χ^2 which adjusts for non-normality with ordinal data. In terms of the χ^2/df ratio we follow the recommendations of Bollen (1989) and Kelloway (1998) and consider a ratio below 2 as indicative of a good fitting model, a ratio between 2 and 3 as indicative of an acceptable fit, and a ratio of between 3 and 5 as approaching an acceptable fit.[1] Also presented in Table 3 are RMSEA and SRMR indicators. Following Hu and Bentler (1999) and Steiger (2000) we will use a cutoff of 0.05 for the RMSEA, in conjunction with 0.05 for the SRMR, for good fitting models. Values between 0.05 and 0.08 for both these indices will be considered acceptable and between 0.08 and 0.10 as approaching acceptability.[2] In conjunction with the above fit indices, a combination of the Tucker Lewis Index (TLI) and the Comparative Fit Index (CFI) will be used both with cutoff values >0.95. This is quite a robust cutoff as many authors, including Bollen (1989) and Marsh, Hau, and Wen (2004), suggest <0.90 as a rejection threshold. It is important to note that where overly stringent cutoffs are used with all these indices in combination there is a risk of overrejection (Hu & Bentler, 1999; Marsh et al., 2004). Finally the ECVI is also presented (testing for badness of fit). Generally speaking, when comparing models, smaller values of the ECVI indicate better fit to the data (Kelloway, 1998; Mueller, 1996).[3]

[1]In selecting these cutoff points we recognize that there is some debate in the literature about what constitutes a reasonable χ^2/df ratio to identify a good fitting model (Bollen, 1989; Kelloway, 1998; Marsh & Hocevar, 1985; Mueller, 1996). Bollen (1989, p. 278), for example, notes that "there is no consensus on what represents a 'good' fit, with recommendations ranging from ratios of 3, 2 or less... to as high as 5", and Kelloway (1998) suggests that finding an absolute cutoff value for this indicator is problematic as ratios below 2 could indicate an overfitting model (p. 28).

[2]Once again, there is debate in the literature about what are reasonable RMSEA and SRMR cutoffs for good fitting models (Hu & Bentler, 1999; Steiger, 2000). Robust cutoffs of 0.05 for the RMSEA combined with 0.06 for the SRMR have been suggested; these cutoffs however, sometimes risk rejecting models unnecessarily, so other combinations have been suggested (0.06 for RMSEA and 0.09 for SRMR) to reduce type II errors (Hu & Bentler, 1999). Indeed Steiger (2000) suggests that using an absolute cutoff of 0.05 risks being overly stringent.

[3]It has been suggested that when there are very small differences in the ECVI for two different models (for example a difference of around 0.04) then it might not be sensible to reject the worst performing model purely on the basis of this indicator, especially if other fit indices suggest good performance and this model is more parsimonious (Mueller, 1996).

RESULTS

Confirmatory analyses of the six-item organizational identification scale

Descriptive statistics and correlations for all variables used in Study 1 and 2 are shown in Tables 1 and 2 respectively. The results of the confirmatory factor analyses for both Study 1 and Study 2 are shown in Table 3.

Study 1 confirmatory results

As can be seen from Table 3, for Study 1 the one-factor model provided quite a good fit to the data. This applied for the total sample, as well as for each of the two occupational subsamples. For the total sample, several of the fit indices for the one-factor model were within acceptable limits with the chi square over degrees of freedom ratio at 3.82, the SRMR at 0.036, the RMSEA at 0.063, the CFI at 0.99 and the TLI at 0.99. A similar pattern of results obtained for both the subsample of nurses ($\chi^2/df = 4.60$, SRMR = 0.048, RMSEA = 0.10, CFI = 0.99, TLI = 0.98) and of professionals ($\chi^2/df = 1.59$, SRMR = 0.051, RMSEA = 0.067, CFI = 0.99, TLI = 0.99). The fit indices therefore tend to show at least acceptable levels of fit and sometimes good levels, apart from the nurse group which seemed to show a rather high χ^2/df ratio of 4.60 (approaching reasonable fit) and an RMSEA of 0.1 (at the threshold of approaching acceptable levels of fit).

The second-order model provided a good fit to the data and, on all criteria, outperformed the one-factor model in Study 1. For the sample as a whole, the fit indices of the second-order model were all within good limits (SRMR = 0.046, RMSEA = 0.040, CFI = 0.99, TLI = 1.00). With this model the χ^2/df ratio of 2.08 was marginally above cutoff for a good fitting model. Given how close it is to the threshold and how well the other indices perform, it is safe to say that this second-order factor is a good fitting model. With the marginal exception of the SRMR results (for nurses), all the fit statistics for this model also exhibited a good level of fit for both the nurse subsample ($\chi^2/df = 0.95$, SRMR = 0.064, RMSEA = 0.000, CFI = 1.00, TLI = 1.00) and the professional subsample ($\chi^2/df = 1.2$, SRMR = 0.050, RMSEA = 0.000, CFI = 1.00, TLI = 1.00).

For Study 1, however, the three-factor model emerged as the best fitting model in the analysis. As Table 3 shows, the three-factor model outperformed both the one-factor model and the second-order model on all criteria. This was the case for the sample as a whole, as well as for both occupational subsamples. All the fit statistics for the three-factor model were well within good limits for the total sample ($\chi^2/df = 1.02$, SRMR = 0.012, RMSEA = 0.005, CFI = 1.0, TLI = 0.99), as well as for the nurse subsample ($\chi^2/df = 0.20$, SRMR = 0.006, RMSEA = 0.000, CFI = 1.0, TLI = 1.0) and

TABLE 1
Study 1 total sample, descriptive statistics, and correlations for the three subcomponents of OID, the overall six-item scale, and selected antecedent and outcome variables

	Correlations									
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*Mean*	*SD*
1. Self-categorization & labelling									3.21	0.97
2. Value & goal sharing	0.61***								3.51	0.71
3. Belonging & membership	0.74***	0.69***							3.25	0.90
4. Full NHS OID	0.90***	0.84***	0.92***						3.32	0.76
5. Distributive justice	0.28***	0.18***	0.22***	0.26***					2.58	1.04
6. Procedural justice	0.24***	0.23***	0.22***	0.26***	0.39***				2.82	0.67
7. Turnover intentions	−0.41***	−0.37***	−0.47***	−0.47***	−0.35***	−0.30***			2.42	1.06
8. Helping behaviour	0.13**	0.10*	0.14**	0.14**	−0.01	−0.03	−0.04		3.89	0.83
9. Involvement	0.51***	0.51***	0.55***	0.59***	0.16***	0.16***	−0.30***	0.15***	3.74	0.68

$N = 621$.
*$p < .05$, **$p < .01$, ***$p < .001$.

TABLE 2
Study 2 total sample, descriptive statistics, and correlations for the three subcomponents of OID, the overall six-item scale, and selected antecedent and outcome variables

	Correlations									
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*Mean*	*SD*
1. Self-categorization & labelling									3.40	0.94
2. Value & goal sharing	0.71***								3.63	0.86
3. Belonging & membership	0.81***	0.78***							3.44	0.95
4. Full NHS OID	0.92***	0.90***	0.95***						3.49	0.84
5. Distributive justice	0.19***	0.18***	0.16***	0.19***					2.66	1.05
6. Procedural justice	0.18***	0.18***	0.16***	0.19***	0.40***				2.77	0.80
7. Turnover intentions	−0.46***	−0.45***	−0.50***	−0.51***	−0.24***	−0.25***			2.31	1.01
8. Helping behaviour	0.16***	0.10**	0.16***	0.15***	−0.05	0.03	−0.10**		3.90	0.77
9. Involvement	0.52***	0.56***	0.58***	0.61***	0.14***	0.15***	−0.37***	0.17**	3.82	0.68

$N = 719$.
$^{**}p < .01$, $^{***}p < .001$.

TABLE 3
Fit statistics for one-factor, three-factor, and second-order models

NHS Organizational Identification Measurement Models	*df*	χ^2	χ^2/df	*SRMR*	*RMSEA*	*RMSEA 90% C I (;)*	*CFI*	*TLI*	*ECVI*
Study 1: Primary sample									
Total sample ($N = 676$)									
Null model	15	4397							
One-factor model	9	33.34	3.82	0.036	0.063	0.04;0.09	0.99	0.99	0.085
Three-factor model	6	6.12	1.02	0.012	0.005	0.00;0.05	1.00	0.99	0.054
Second-order model	8	16.60	2.08	0.046	0.040	0.01;0.07	0.99	1.00	0.063
Nurse subsample ($n = 359$)									
Null model	15	2406							
One-factor model	9	41.41	4.60	0.048	0.10	0.07;0.13	0.99	0.98	0.180
Three-factor model	6	1.17	0.20	0.006	0.00	0.00;0.00	1.00	1.00	0.100
Second-order model	8	7.6	0.95	0.064	0.00	0.00;0.06	1.00	1.00	0.095
Professionals subsample ($n = 132$)									
Null model	15	759							
One-factor model	9	14.34	1.59	0.051	0.067	0.00;0.13	0.99	0.99	0.29
Three-factor model	6	5.75	0.96	0.033	0.00	0.00;0.11	1.00	1.00	0.27
Second-order model	8	7.86	1.20	0.050	0.00	0.00;0.10	1.00	1.00	0.26

(*continued overleaf*)

TABLE 3
(*Continued*)

NHS Organizational Identification Measurement Models	*df*	χ^2	χ^2/df	*SRMR*	*RMSEA*	*RMSEA 90% C I (;)*	*CFI*	*TLI*	*ECVI*
Study 2: Cross-validation sample									
Total sample ($N = 768$)									
Null model	15	6734							
One-factor model	9	59.89	6.65	0.038	0.086	0.07;0.11	0.99	0.99	0.110
Three-factor model	6	6.99	1.17	0.009	0.015	0.00;0.05	1.00	1.00	0.048
Second-order model	8	22.83	2.85	0.071	0.049	0.03;0.07	1.00	1.00	0.064
Nurse sample ($n = 408$)									
Null model	15	3683							
One-factor model	9	26.40	2.93	0.033	0.069	0.04;0.10	1.00	0.99	0.120
Three-factor model	6	4.20	0.70	0.010	0.00	0.00;0.05	1.00	1.00	0.088
Second-order model	8	10.49	1.31	0.064	0.028	0.00;0.07	1.00	1.00	0.090
Professional sample ($n = 133$)									
Null model	15	1052							
One-factor model	9	17.59	1.99	0.044	0.085	0.02;0.14	0.99	0.99	0.32
Three-factor model	6	6.66	1.11	0.020	0.029	0.00;0.12	1.00	1.00	0.28
Second-order model	8	12.40	1.55	0.080	0.065	0.00;0.13	1.00	1.00	0.29

the professional subsample ($\chi^2/df = 0.96$, SRMR = 0.033, RMSEA = 0.000, CFI = 1.00, TLI = 1.00). In line with the fit indices, for the overall sample in Study 1, the ECVI indicates that the three-factor model fits the data best, followed by the second-order model and the one-factor model, respectively. However, in the occupational subsamples, the second-order model fits the data best followed by the three-factor and the one-factor models respectively.

Study 2 confirmatory results

As can be seen from Table 3, with some variations, the results for the Study 2 cross-validation sample were similar to those obtained in Study 1. The one-factor model in Study 2 provided a reasonable, but somewhat uneven fit to the data. Several of the one-factor model fit statistics for the total sample in Study 2 were within acceptable limits (SRMR = 0.038, CFI = 0.99, TLI = 0.99). However, the chi square over degrees of freedom ratio (6.65) in Study 2 is above the acceptable threshold. Additionally, the RMSEA of 0.086 is slightly beyond acceptable limits. With the nurse subsample the one factor model can be considered acceptable ($\chi^2/df = 2.93$, SRMR = 0.033, RMSEA = 0.069, CFI = 1.00, TLI = 0.99) as can the professional subsample ($\chi^2/df = 1.99$, SRMR = 0.044, CFI = 0.99, TLI = 0.99), although the RMSEA of 0.085 is rather high for this subsample in Study 2.

In contrast, the second-order model provided at least an acceptable fit to the data in Study 2, although unlike in Study 1, this model did not consistently outperform the one-factor model on all indices. For the total sample in Study 2, the fit indices for the second-order model were within acceptable to good limits ($\chi^2/df = 2.85$, SRMR = 0.071, RMSEA = 0.049, CFI = 1.00, TLI = 1.00). The fit statistics proved acceptable for both the nurse subsample ($\chi^2/df = 1.31$, SRMR = 0.064, RMSEA = 0.028, CFI = 1.00, TLI = 1.00), and the professional subsample ($\chi^2/df = 1.55$, SRMR = 0.080, RMSEA = 0.065, CFI = 1.00, TLI = 1.00).

In Study 2, as in Study 1, the three-factor model once again proved to be the best fitting model. As Table 3 shows, the three-factor model in Study 2 not only provided a consistently good fit to the data, but also systematically outperformed both the one-factor model and the second-order model on all criteria. For the sample as a whole, the fit statistics of the three-factor model were all well within good fitting limits ($\chi^2/df = 1.17$, SRMR = 0.009, RMSEA = 0.015, CFI = 1.00, TLI = 1.00). The same was true for the nurse subsample ($\chi^2/df = 0.70$, SRMR = 0.010, RMSEA = 0.000, CFI = 1.00, TLI = 1.00) and also for the professional subsample in Study 2 ($\chi^2/df = 1.11$, SRMR = 0.020, RMSEA = 0.029, CFI = 1.00, TLI = 1.00). In all cases, the ECVI values for Study 2 indicate that the best fitting model was

the three-factor model, once again followed by the second-order model and then finally by the one-factor model.

Individual factor loadings

Table 4 shows the individual factor loadings for the six scale items for the best fitting three-factor model for the total sample for Study 1 and Study 2 respectively. As can be seen, in both cases all items exhibited acceptable loadings (all factor loadings were highly significant, $p < .001$). Similarly, the individual factor loadings were also acceptable for the three-factor model across both occupational subsamples in both studies. The only exception in this respect was the loading for item 4 in the professional subsample in Study 1, which was relatively low (Lambda X = 0.49). It is also worth noting that the individual factor loadings for the one-factor model were also acceptable (see Table 5), although again item 4 was slightly low in the professional subsample in Study 1 (Lambda X = 0.39), with all loadings $p < .001$.

Discriminant validity of the three subfactors

The results of the confirmatory analyses indicated that the three-factor model was superior to both the one-factor model and the higher-order latent model. In other words, despite the fact that the latter two models showed reasonable fit statistics, the analysis suggested that OID has three distinct subcomponents. When the individual items were combined to form three separate scales representing the three subfactors, all three subscales showed acceptable levels of internal reliability. The α coefficients for the self-categorization and labelling, the value and goal synergy and the belonging and membership subscales were 0.82, 0.69, and 0.89, respectively, for Study 1, and 0.84, 0.87, and 0.92, respectively, for Study 2. With the exception of the α coefficient for the values and goals subscale of the professional sample in Study 1 (.53), the α coefficients for the remaining subscales of the occupational samples in both Study 1 and Study 2 were all above .70 (see Table 4). As might be expected, the α coefficients for the overall scale combining all six items were very high (in all samples the α coefficients of the six-item scale were as high or higher than those of the subscales). This was the case for the full samples (.89 for Study 1 and .93 for Study 2), as well as for the two occupational subsamples (alphas ranged from .87 to .94 across the two studies).

As Tables 1 and 2 show, the average intercorrelation between the three subscales was very high (.68 for Study 1 and .77 for Study 2). Specifically, for the Study 1 total sample the correlation between the self-categorization and labelling scale on the one hand, and the value and goal synergy, and the

TABLE 4
Item loadings and Cronbach alphas for the three-factor models

	Full sample				*Nurse sample*				*Professional sample*			
Item (Subcomponent)	*Lambda X F1*	*F2*	*F3*	R^2	*Lam X F1*	*F2*	*F3*	R^2	*Lam X F1*	*F2*	*F3*	R^2
Study 1												
1. My employment in the NHS is a big part of who I am (Self-cat. & label.)	0.84			0.71	0.84			0.71	0.83			0.69
2. I consider myself an NHS person (Self-cat. & label.)	0.91			0.82	0.93			0.86	0.89			0.78
3. What the NHS stands for is important to me (Values & Goals)		0.92		0.85		0.93		0.87		0.93		0.87
4. I share the goals and values of the NHS (Values & Goals)		0.65		0.42		0.67		0.44		0.49		0.24
5. My membership of the NHS is important to me (Belong. & Mem.)			0.91	0.83			0.95	0.90			0.91	0.82
6. I feel strong ties with the NHS (Belong. & Mem.)			0.90	0.82			0.93	0.86			0.94	0.88
Cronbach α for each factor	*0.82*	*0.69*	*0.89*		*0.83*	*0.71*	*0.89*		*0.80*	*0.53*	*0.87*	

(*continued overleaf*)

TABLE 4
(*Continued*)

	Full sample				*Nurse sample*				*Professional sample*			
Item (Subcomponent)	*Lambda X F1*	*F2*	*F3*	R^2	*Lam X F1*	*F2*	*F3*	R^2	*Lam X F1*	*F2*	*F3*	R^2
Study 2												
1. My employment in the NHS is a big part of who I am (Self-cat. & label.)	0.84			0.70	0.83			0.69	0.80			0.64
2. I consider myself an NHS person (Self-cat. & label.)	0.93			0.87	0.94			0.88	0.88			0.78
3. What the NHS stands for is important to me (Values & Goals)		0.91		0.83		0.92		0.84		0.88		0.78
4. I share the goals and values of the NHS (Values & Goals)		0.90		0.81		0.88		0.78		0.90		0.80
5. My membership of the NHS is important to me (Belong. & Mem.)			0.97	0.94			0.97	0.95			0.95	0.91
6. I feel strong ties with the NHS (Belong. & Mem.)			0.95	0.90			0.95	0.91			0.94	0.88
Cronbach α for each factor	*0.84*	*0.87*	*0.92*		*0.84*	*0.86*	*0.93*		*0.77*	*0.84*	*0.91*	

TABLE 5
Item loadings and Cronbach alphas for the one-factor models

	Study 1			*Study 2*		
Item	*Full sample Lambda X*	*Nurse sample Lambda X*	*Professional sample Lambda X*	*Full sample Lambda X*	*Nurse sample Lambda X*	*Professional sample Lambda X*
1. My employment in the NHS is a big part of who I am	0.79	0.74	0.80	0.79	0.78	0.78
2. I consider myself an NHS person	0.84	0.81	0.85	0.87	0.87	0.87
3. What the NHS stands for is important to me	0.82	0.83	0.74	0.83	0.86	0.86
4. I share the goals and values of the NHS	0.60	0.61	0.39	0.82	0.83	0.83
5. My membership of the NHS is important to me	0.90	0.93	0.90	0.96	0.96	0.96
6. I feel strong ties with the NHS	0.89	0.92	0.92	0.95	0.95	0.95
Cronbach α	*0.89*	*0.90*	*0.87*	*0.93*	*0.94*	*0.92*

belonging and membership scales on the other, was .61 and .74 respectively; while the correlation between the belonging and membership and the value and goal synergy scales was 0.69. The corresponding Study 2 total sample correlations were 0.71, 0.81, and 0.78. In other words, the three subscales were highly interrelated and, therefore, are likely to exhibit low discriminant validity. A similarly high pattern of intercorrelations was obtained for the two occupational subsamples in both studies (results available from the authors).

The discriminant validity of the three organizational identification subscales was formally explored by looking at the relationship between each of the three scales and five separate variables that have been suggested in the literature as important antecedents and consequences of organizational identification (Edwards, 2005; Riketta, 2005). The antecedents included distributive justice and procedural justice, while the outcomes consisted of organizational involvement, intention to leave the organization and prosocial helping behaviours. All relevant scales for the antecedents and outcomes exhibited acceptable levels of internal reliability in both studies. For Study 1, α coefficients for the total sample ranged

from .82 for prosocial helping behaviour to .95 for turnover intention. For Study 2, α coefficients ranged from .78 for organizational involvement to .95 for turnover intention. The correlations between the five antecedent and outcome variables and each of the three organizational identification subscales are shown in Table 1 for Study 1 and Table 2 for Study 2.

As the CFA gave support for the existence of three separate subcomponents, it may be reasonable to expect certain differences in the relationships with the antecedent and outcome measures across the three OID subcomponents. For example, organizational involvement might be expected to have a stronger relationship with value and goal sharing than with the other two subcomponents. If individuals do indeed share the goals of the organization, they should definitely be more willing to put themselves out for the good of the organization since the organization's goals are also their own. It would also be reasonable to expect the belonging and membership subcomponent of OID to have a stronger relationship with helping behaviours than the other two subcomponents since the more people feel part of a group, the more likely they are to be willing to help other members of the group. Similarly, the extent to which people feel that the organization is acting in a just way (either distributively or procedurally) can be expected to be more strongly positively related to the self-categorization and labelling dimension of OID than to the other two components because linking one's self-concept to an organization that one feels is not being just may cause psychological tension. Furthermore, because it is possible for people to share the goals of the NHS without working for it (or being a member), the relationship between the intention to leave the NHS and value and goal sharing can be expected to be less pronounced that the relationship between intention to leave and either the self-categorization and labelling or the belonging and membership dimensions of OID. As such, the five antecedent and outcome variables outlined above should provide a useful test of the discriminant validity of the three OID subfactors.

As can be seen from the correlation results presented in Tables 1 and 2, the discriminant validity of the three organizational identification subscales was low in both studies. Detailed comparisons of all relevant pairs of correlations (Fisher, 1921) revealed that only in one case was there a significant difference between any of the coefficients for the antecedent and outcome variables across the three subcomponents of OID. The only pair of coefficients that showed a significant difference were those for the correlations between turnover intention and the value and goal sharing subcomponent on the one hand ($r = -.37$), and turnover intentions and the belonging and membership dimension on the other ($r = -.47$) in Study 1. A similar pattern of results (available from the authors) was also obtained for the two occupational subsamples in both studies. Overall, therefore, for all five antecedent and outcome variables examined, virtually no differences

were found in correlations across the three subscales in either study, indicating a lack of discriminant validity between the three subcomponents of organizational identification.

SUPPLEMENTARY CONFIRMATORY ANALYSIS

As can be seen from Tables 1 and 2, both intention to stay and involvement have quite high zero order correlations with OID (close to .50 in both studies). In order to determine whether these two dimensions, that are often associated with OC, are distinct from the OID measure, we tested a number of additional confirmatory analytic models. The models included the six OID items together with the three involvement items and the three intention to leave items (used here as a reverse loyalty measure). Two models were tested and compared. The first was a one-factor model where all identification, involvement, and intention to leave items were made to load on a single common factor. The second was a three-factor model where the identification, involvement, and intention to leave items were made to load on three separate factors. The results of this analysis for both Study 1 and Study 2 are shown in Table 6.

As can be seen from Table 6, the one-factor model where all 12 items were made to load on a single factor does not fit the data well, either with the Study 1 sample ($\chi^2/df = 18.38$, SRMR = 0.13, RMSEA = 0.16, CFI = 0.92, TLI = 0.91) or with the Study 2 sample ($\chi^2/df = 18.03$, SRMR = 0.13,

TABLE 6
Fit statistics comparing a one-factor versus three-factor model of organizational identification, organizational involvement, and organizational loyalty

NHS Organizational Identification Measurement Models	*df*	χ^2	χ^2/df	*SRMR*	*RMSEA*	*RMSEA 90% C I (;)*	*CFI*	*TLI*	*ECVI*
Study 1: Primary sample									
Total sample ($N = 676$)									
Null model	66	12680							
One-factor model	54	992.67	18.38	0.13	0.16	0.15;0.17	0.92	0.91	1.54
Three-factor model	51	105.74	2.07	0.040	0.040	0.03;0.05	1.00	0.99	0.24
Study 2: Cross-validation sample									
Total sample ($N = 768$)									
Null model	66	17151							
One-factor model	54	973.52	18.03	0.13	0.15	0.14;0.16	0.95	0.93	1.33
Three-factor model	51	169.44	3.32	0.040	0.055	0.05;0.06	0.99	0.99	0.29

RMSEA = 0.15, CFI = 0.95, TLI = 0.93). In contrast, the three factor model where the items were made to load on three respective OID, involvement and loyalty (reversed) dimensions, provided a good/acceptable fit to the data in both studies. The Study 1 sample has a χ^2/df ratio only 0.07 above the good fitting threshold and a range of good fitting indices ($\chi^2/df = 2.07$, SRMR = 0.040, RMSEA = 0.040, CFI = 1.00, TLI = 0.99). A similar pattern of results hold for the Study 2 sample, with good fitting thresholds met for the SRMR (0.040), the CFI (0.99), and the TLI (0.99), and with acceptable thresholds reached for the RMSEA (0.055) and the χ^2/df ratio (3.32). Taken together, these results suggest that the two OC related constructs, involvement and intention to stay, are conceptually distinct from each other. More importantly from the present point of view, they also suggest that the current measure of organizational identification is, conceptually separate and distinct from both the involvement and loyalty dimensions of OC.

DISCUSSION

Building on key approaches to the analysis of organizational identification (Ashforth & Mael, 1989; Brown, 1969; Dutton et al., 1994; Hall et al., 1970; Lee, 1969; Patchen, 1970; Pratt, 1998; van Dick, 2001), in the present study we first outlined a new three-component conceptualization of OID focusing on the extent to which individuals categorize and label themselves as members of the organization, have a sense of attachment and belonging to the organization, and share the goals and values of the organization. We then proposed a new six-item measure explicitly designed to tap the three hypothesized dimensions of OID, which we tested using data from two samples of health workers in the UK.

The results of the confirmatory factor analyses conducted on both the Study 1 and Study 2 data provided clear support for the idea that OID is a multidimensional construct comprising three distinct but related components linked to the hypothesized elements of self-categorization and labelling, value and goal synergy, and belonging and membership. In all analyses the three-factor model reflecting the three-component conceptualization of OID emerged as the best fitting model across both studies. Specifically, the three-factor model consistently outperformed the unidimensional model and the higher order model on all criteria in the analyses. At the same time, the three-factor model also provided a good fit to the data not only for the total sample in both studies, but also for the two subsamples of nurses and professionals.

It is important to note, however, that although analytically and empirically distinct, the three hypothesized subcomponents of OID were found to be strongly interrelated. In both Study 1 and Study 2 the

intercorrelations between the three subcomponents were consistently high, ranging from .61 to .81. Not surprisingly, the three subcomponents also showed very low discriminant validity. The pattern of correlations between each of the three subcomponents and a range of important antecedents and outcomes commonly associated with OID, including distributive justice, procedural justice, helping behaviours, organizational involvement, and turnover intention, was virtually the same across all subcomponents. Importantly, this pattern of results, indicating a lack of discriminant validity between the three subcomponents of OID, was found to reproduce across all analyses and to hold not only for the total samples, but also for the two occupational subsamples of nurses and professionals in both studies.

Overall, therefore, the results of our analysis provide clear support for the proposed three-component reconceptualization and operationalization of organizational identification. But at the same time, the results also indicate that although OID can usefully be conceptualized as involving three distinct dimensions, these three subcomponents are highly intercorrelated. In practice, therefore, it may not be sensible and/or meaningful to treat the three subcomponents as completely separate constructs and use them as distinct variables in analysis. Rather, it may be preferable to combine the three subdimensions into an aggregate measure and use the proposed six-item operationalization as a single overall scale of OID. This choice is supported by a number of considerations. First, there is little evidence for the discriminant validity of the three subcomponents of OID. Second, although there is strong support for the three-factor model in all the analyses, the second-order model in both studies often fit the data well. More generally, the fit indices of the second-order model suggest that the three distinct subcomponents of OID can reasonably be treated as related constructs that make up a higher order latent construct of organizational identification. Finally, it is important to note that although the one-factor model did not perform as well as the three-factor model, and in some cases also not as well as the second order model, in most of the analyses the one-factor model showed a satisfactory fit in its own right.

Aside from the results of the confirmatory analysis showing that the one-factor model does have a satisfactory fit with the data, as noted above, all individual items showed acceptable factor loadings for the one-factor model in both studies. This applied for the total samples, as well as for the two occupational subsamples of nurses and professionals. In addition, when scaled together, the six items exhibited a high level of internal consistency reliability ranging from .87 to .93 across all analyses (see Table 5). In light of the above considerations, and given also the importance of having parsimonious measures of key constructs for use in field research, we suggest

that the short six-item aggregate scale of organizational identification presented above provides a theoretically meaningful and psychometrically robust measure of OID for use in future research in the area.

More generally and fundamentally, a clear implication of our results is that, when measuring OID, it is important to tap all three component dimensions of the construct, otherwise the measure will have only limited validity since it will not cover important facets of the phenomenon of interest. In addition, on the assumption that all three components of OID are equally important, our findings suggest that measures of the construct that are internally unbalanced, in the sense of not giving equal weight to the three dimensions, are likely to have lower validity. Judged from this point of view, and in terms of construct validity more generally, the proposed new six-item measure of OID compares favourably with other OID scales, including the two most commonly used measures in the area reviewed above, namely Cheney's (1982) OIQ and Mael and Ashforth's (1992) six-item instrument. First, our measure is based on a multidimensional conceptualization of OID that explicitly builds on and attempts to integrate the main ways in which this phenomenon has been conceptualized by researchers over the past 40 years. Second, our measure was explicitly designed to tap the three hypothesized constituent dimensions of organizational identification and, therefore, benefits from a strong and clear link between conceptualization and operationalization. And finally, because of the explicit link between conceptualization and operationalization, the present measure is better balanced internally than existing OID scales. Taken together the above factors suggest that the proposed new measure of OID has good construct validity, particularly when compared to existing scales in the area.

A final key point to emerge from the analysis concerns the failure of the six OID items to factor analyse together with the items measuring involvement and intention to leave. This suggests that despite the relatively strong correlations found between OID and both involvement and intention to leave, the OID scale measures a separate construct from those of the other two scales. In other words, organizational identification, conceptualized and operationalized as a psychological bond between the individual and the organization based on self-categorization, the sharing of organizational goals and values, and a sense of belonging and attachment to the organization, would appear to be conceptually distinct from the more behaviourally oriented aspects of organizational commitment reflected in measures of involvement and intention to leave. More generally, therefore, our results suggests that although a sense of identification may well be part of a broader notion of organizational commitment that also includes such elements as involvement and loyalty, OID, as measured by the present scale, is a separate and identifiable construct in its own right.

Limitations and future research

There are a number of potential limitations of the present study that should be noted. First, although the six-item organizational identification scale presented here exhibited adequate psychometric properties across different occupational samples, the variance in the organizational referent used in this study is necessarily limited since all respondents came from the same organization, namely the NHS Trust. This, in turn, may have limited the variance in the measure of OID used in the study. Further research is clearly required, therefore, to test the generalizability of the present findings, including the robustness and stability of the proposed six-item OID scale across different types of organizations and occupations. Future research should also explore the advisability of extending the scale to include a minimum of three items for each subdimension of identification since only having two items per subcomponent tends to limit the validity of the scale and could, therefore, be considered to be conceptually too restrictive. Any extension of this measure should, however, give due consideration to issues about the balance between parsimony and validity in scale construction.

A further limitation of the study is that, for reasons of space linked to the overall coverage of the project in the participating NHS Trust, we were not able to include other measures of OID in the research, such as Mael and Ashforth's (1992) scale. As argued above, quite apart from exhibiting adequate psychometric properties, we believe that the new OID measure has good construct validity and provides a more carefully balanced and, therefore, satisfactory multidimensional operationalization of OID than existing scales in the area. Clearly, though, the inclusion of other OID scales would have allowed for a more thorough comparison of measures. In particular, it would have allowed for a systematic exploration of the discriminant and convergent validity of the new scale and of its relative performance compared to existing measures. Future research should, therefore, give priority to such comparative scale testing since a true test of the present measure will only come with further investigations of this kind.

A related limitation of the present study is that, again for reasons of space, we were only able to include measures of the more behaviourally oriented aspects of organizational commitment in the survey questionnaire. As we have seen, the results indicate that organizational identification, measured with the new six-item OID scale, is conceptually distinct from both organizational involvement and intention to leave. Conceptually, however, it would have been useful to be able to compare OID with more cognate affective and psychologically based aspects of OC, as captured, for instance, by Meyer and Allen's (1991) affective commitment (AC) scale. Given the importance of the affective commitment construct within the OB

field, future research should explicitly seek to compare the new OID measure to Meyer and Allen's AC scale in order systematically to explore potential overlaps between these two constructs.

A final limitation of the study concerns potential problems of common method variance. All the variables used in the analysis were based on information collected from the same set of respondents, thereby increasing the risk that observed relationships in the data might be artificially inflated (or deflated) because of common method bias (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003). Common method bias is not necessarily a problem when looking at the relationship between various subcomponents of OID. It can, however, be more of a problem when testing for the discriminant validity of the various subcomponents or, even more importantly, when testing causal models of the antecedents and consequences of organizational identification. Future research should accord due weight to these issues and, whenever possible, seek to obtain independent objective measures of key causal variables of interest.

CONCLUSION

The key contribution of the present study has been the development and testing of a new short six-item measure of organizational identification that can be used in field research. This new measure parsimoniously taps the notion of organizational identification conceptualized in terms of three core subcomponents. The definition of organizational identification used as the basis of the present operationalization integrates the main ways that researchers have conceptualized the notion over the years and incorporates both cognitive and affective aspects of the phenomenon. Importantly, the new measure presented here is theoretically rooted and is explicitly and directly linked to the new proposed reconceptualization of the OID construct. Given the good psychometric properties of the new measure and its robustness across different samples in two different studies, it is hoped that it will provide a useful and meaningful tool for assessing the extent to which employees identify with the organization for which they work.

REFERENCES

Abrams, D., Ando, K., & Hinkle, S. (1998). Psychological attachment to the group: Cross-cultural differences in organizational identification and subjective norms as predictors of workers' turnover intentions. *Personality and Social Psychology Bulletin*, *24*, 1027–1039.

Abrams, D., & de Moura, R. (2001). Organizational identification: Psychological anchorage and turnover. In M. A. Hogg & D. J. Terry (Eds.), *Social identity processes in organizational contexts* (pp. 131–148). Philadelphia: Psychology Press.

Ashforth, B. E., & Humphrey, R. H. (1997). The ubiquity and potency of labels in organizations. *Organization Science*, *8*, 43–58.

Ashforth, B. E., & Mael, F. A. (1989). Social identity theory and the organization. *Academy of Management Review*, *14*, 20–39.

Bamber, E. M., & Iyer, V. (2002). Big 5 auditors' professional and organizational identification: Consistency or conflict? *Auditing Journal of Practice and Theory*, *21*(2). Retrieved from http://accounting.rutgers.edu/raw/aaa/audit/ajpt.htm

Bergami, M., & Bagozzi, R. P. (1996). *Organizational identification: conceptualization measurement, and nomological validity*. Working paper (Issue Brief No. 9608-10), University of Michigan Business School, MI, USA.

Bergami, M., & Bagozzi, R. P. (2000). Self categorization, affective commitment and group self-esteem as distinct aspects of social identity in the organization. *British Journal of Social Psychology*, *39*, 555–577.

Bollen, K. A. (1989). *Structural equations with latent variables*. New York: Wiley.

Brown, M. E. (1969). Identification and some conditions of organizational involvement. *Administrative Science Quarterly*, *14*, 346–355.

Cheney, G. (1982). *Organizational identification as a process and product: A field study*. Unpublished master's thesis, Purdue University, West Lafayette, IN, USA.

Cheney, G. (1983). The rhetoric of identification and the study of organizational communication. *Quarterly Journal of Speech*, *69*, 143–158.

Cheney, G., & Tompkins, P. K. (1987). Coming to terms with organizational identification and commitment. *Central States Speech Journal*, *38*, 1–15.

Cole, M. S., & Bruch, H. (2006). Organizational identity strength, identification, and commitment and their relationships to turnover intention: Does organizational hierarchy matter? *Journal of Organizational Behavior*, *27*, 585–605.

Cook, J., & Wall, T. (1980). New work attitude measures of trust, organizational commitment and personal need fulfillment. *Journal of Occupational Psychology*, *53*, 39–52.

Dukerich, J. M., Golden, B. R., & Shortell, S. M. (2002). Beauty is in the eye of the beholder: The impact of organizational identification, identity, and image on the cooperative behaviors of physicians. *Administrative Science Quarterly*, *47*, 507–533.

Dutton, J. E., Dukerich, J. M., & Harquail, C. V. (1994). Organizational images and member identification. *Administration Science Quarterly*, *39*, 239–263.

Edwards, M. R. (2005). Organizational identification: A conceptual and operational review. *International Journal of Management Reviews*, *7*(4), 207–230.

Fisher, R. A. (1921). On the probable error of a coefficient of correlation deduced from a small sample. *Metron*, *1*, 3–32.

Guatam, T., van Dick, R., & Wagner, U. (2004). Organizational identification and organizational commitment: Distinct aspects of two related concepts. *Asian Journal of Social Psychology*, *7*, 301–315.

Hall, D. T., Schneider, B., & Nygren, H. T. (1970). Personal factors in organizational identification. *Administrative Science Quarterly*, *15*, 176–190.

Harquail, C. V. (1998). Organizational identification and the "whole person": Integrating affect, behavior, and cognition. In D. A. Whetten & P. C. Godfrey (Eds.), *Identity in organizations: Building theory through conversations* (pp. 223–231) London: Sage.

Herrbach, O. (2006). A matter of feeling? The affective tone of organizational commitment and identification. *Journal of Organizational Behavior*, *27*, 629–643.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives, *Structural Equation Modeling*, *6*(1), 1–55.

Joreskog, K. G. (2005). *Structural Equation Modeling with ordinal variables using LISREL*. Scientific Software International Inc. (SSI). Retrieved September, 2006, from http://www.ssicentral.com/lisrel/techdocs/ordinal.pdf

Kelloway, K. E. (1998). *Using LISREL for structural equation modeling: A researcher's guide*. Thousand Oaks, CA: Sage Publications.

Law, K. S., Wong, C., & Mobley, W. H. (1989). Toward a taxonomy of multidimensional constructs. *Academy of Management Review*, *23*, 741–755.

Lee, S. M. (1969). Organisational identification of scientists. *Academy of Management Journal*, *12*, 327–337.

Lee, S. M. (1971). An empirical analysis of organisational identification. *Academy of Management Journal*, *14*, 213–226.

Mael, F. A., & Ashforth, B. E. (1992). Alumni and their alma mater: A partial test of a reformulated model of organizational identification. *Journal of Organizational Behavior*, *13*, 103–123.

Mael, F. A., & Tetrick, L. E. (1992). Identifying organizational identification. *Educational and Psychological Measurement*, *52*, 813–824.

Marsh, H. W., Hau, K., & Wen, Z. (2004). In search of golden rules: Comment in hypothesis testing approaches to setting cutoff values for fit indexes and dangers in over-generalizing Hu and Bentler's (1999) findings. *Structural Equation Modeling*, *11*, 320–341.

Marsh, H. W., & Hocevar, D. (1985). Application of confirmatory factor analysis to the study of self-concept: First- and second-order factor models and their invariance across groups. *Psychological Bulletin*, *97*, 562–582.

Meyer, J., & Allen, N. (1991). A three component conceptualisation of organisational commitment. *Human Resource Management Review*, *1*, 61–89.

Meyer, J. P., Becker, T. E., & van Dick, R. (2006). Social identities and commitments at work: Toward an integrative model. *Journal of Organizational Behavior*, *27*, 665–683.

Miller, V. D., Allen, M., Casey, M. K., & Johnson, J. R. (2000). Reconsidering the organizational identification questionnaire. *Management Communication Quarterly*, *13*, 626–658.

Morrow, P. C. (1983). Concept redundancy in organizational research: The case of work commitment. *Academy of Management Review*, *8*, 486–500.

Mowday, R., Steers, R., & Porter, L. (1979). The measurement of organisational commitment. *Journal of Vocational Behaviour*, *14*, 224–247.

Moye, N. A., & Bartol, K. M. (2001). *Re-framing the psychological contract: Social exchange-based dimensions and their relationship to organizational identification and performance*. Paper presented at the annual conference of the Society for Industrial and Organizational Psychology, San Diego, CA, USA.

Mueller, R. O. (1996). *Basic Principles of Structural Equation Modelling: An Introduction to LISREL and EQS*. New York: Springer.

Niehoff, B. P., & Moorman, R. H. (1993). Justice as a mediator of the relationship between methods of monitoring and organizational citizenship behavior. *Academy of Management Journal*, *36*, 527–556.

O'Reilly, C., & Chatman, J. (1986). Organizational commitment and psychological adjustment: The effects of compliance, identification, and internalization on pro-social behavior. *Journal of Applied Psychology*, *71*, 492–499.

Patchen, M. (1970). *Participation, achievement and involvement in the job*. Englewood Cliffs, NJ: Prentice Hall.

Podsakoff, P. M., MacKenzie, S. B., Lee, J., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of literature and recommended remedies. *Journal of Applied Psychology*, *88*, 879–903.

Podsakoff, P. M., MacKenzie, S. B., Paine, J. B., & Bachrach, D. G. (2000). Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management*, *26*(3), 513–563.

Pratt, M. G. (1998). To be or not to be? Central questions in organizational identification. In D. A. Whetten & P. C. Godfrey (Eds.), *Identity in organizations: Building theory through conversations* (pp. 171–207), London: Sage.

Price, J. L., & Mueller, C. W. (1986). *Handbook of organisational measurement*. Marshfield, MA: Pittman.

Price, J. L., Mueller, C. W., & Currivan, D. B. (1992). *Study of teacher turnover in the Chicago public schools*. Working paper, University of Iowa, USA.

Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: A review of the literature. *Journal of Applied Psychology*, *87*, 698–714.

Riketta, M. (2005). Organizational identification: A meta-analysis. *Journal of Vocational Behavior*, *66*, 358–384.

Rousseau, D. M. (1998). Why workers still identify with organizations. *Journal of Organizational Behavior*, *19*, 217–233.

Shamir, B., & Kark, R. (2004). A single item graphic scale for the measurement of organizational identification. *Journal of Occupational and Organizational Psychology*, *77*, 115–123.

Smidts, A., Pruyn, A. T. H., & van Riel, C. B. M. (2001). The impact of employee communication and perceived external prestige on organizational identification. *Academy of Management Journal*, *49*(5), 1051–1062.

Steiger, J. H. (2000). Point estimation, hypothesis testing, and interval estimation using RMSEA: Some comments and a reply to Hayduk and Glaser. *Structural Equation Modeling*, *7*, 149–162.

Van Dick, R. (2001). Identification in organizational contexts: Linking theory and research from social and organization psychology. *International Journal of Management Reviews*, *3*(4), 265–283.

Van Dick, R., Christ, O., Stellmacher, J., Wagner, U., Ahlswede, O., Grubba, C., et al. (2004). Should I stay or should I go? Explaining turnover intentions with organizational identification and job satisfaction. *British Journal of Management*, *15*, 351–360.

Van Dick, R., Wagner, U., Stellmacher, J., & Christ, O. (2004). The utility of a broader conceptualization of organizational identification: Which aspects really matter? *Journal of Occupational and Organizational Psychology*, *77*, 171–191.

Van Knippenberg, D., & Sleebos, E. (2006). Organizational identification versus organizational commitment: Self-definition, social exchange, and job attitudes. *Journal of Organizational Behavior*, *27*, 571–584.

Van Knippenberg, D., van Knippenberg, B., Monden, L., & de Lima, F. (2002). Organizational identification after a merger: A social identity perspective. *British Journal of Social Psychology*, *41*, 233–252.

Van Knippenberg, D., & van Schie, E. C. M. (2000). Foci and correlates of organizational identification. *Journal of Occupational and Organizational Psychology*, *73*, 137–147.

Wiesenfeld, B. M., Raghuram, S., & Garud, R. (1998). Communication patterns as determinants of organizational identification in a virtual organization. *Journal of Computer-Mediated Communication, 3*(4). Retrieved from http://jcmc.indiana.edu/

Williams, L. J., & Anderson, S. E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of Management*, *17*, 601–617.

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