

The concept of personal initiative: Operationalization, reliability and validity in two German samples

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Personal initiative is conceptualized as a behavioural syndrome made up of several factors. It is important for organizational effectiveness and is one aspect of 'contextual performance'. The construct validity of a set of interview- and questionnaire-based scales for measuring initiative was ascertained in interrelated studies (two waves from a longitudinal study in East Germany [$N = 543$] and a cross-sectional study in West Germany [$N = 160$]). As hypothesized, initiative correlated with partners' assessments, need for achievement, action orientation, problem-focused and passive emotion-focused coping, career planning and executing plans, but not with job satisfaction. Higher initiative existed in small-scale entrepreneurs in the East and in those unemployed who got a job more quickly.

In this article we want to introduce the concept of personal initiative. We shall first argue that it is practically and theoretically useful. Then we shall discuss the concept in somewhat more detail and distinguish it from other related concepts and finally we present the first validity findings.

Personal initiative is an important concept both for practical and theoretical reasons. Initiative has been used practically, for example in assessment centres. In the future, personal initiative will become more important, the more new forms of management (like lean production) are introduced because the surveillance function of supervisors is then decreased. Moreover, there will be fewer jobs (Rifkin, 1995) and initiative may play a role in finding or creating jobs by the unemployed. Companies are interested in initiative because it increases organizational effectiveness (cf. Motowidlo & Scotter, 1994, for a general argument on contextual performance). Since there are no perfect production or service systems, there is some need for initiative to uphold and to improve production or service (Katz, 1964; Organ, 1988).

Theoretically, there has been an increasing interest in performance concepts that are indirectly related to organizational effectiveness: intrapreneurship (Hisrich, 1990), organizational citizenship behaviour (Organ, 1988), organizational spontaneity (George & Brief, 1992; Katz, 1964), generic work behaviour (Hunt, Hansen & Paajanen, 1994), con-

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textual performance (Borman & Motowidlo, 1993) Our study of initiative is part of this general trend.

Given its importance, it is surprising that initiative has not been studied more in work and organizational psychology. While it is occasionally mentioned in passing as one of the important performance factors, it is not studied in its own right

The concept of personal initiative

'Personal initiative is a behaviour syndrome resulting in an individual's taking an active and self-starting approach to work and going beyond what is formally required in a given job. More specifically, personal initiative is characterized by the following aspects: (1) is consistent with the organization's mission, (2) has a long term focus, (3) is goal directed and action oriented, (4) is persistent in the face of barriers and setbacks, and (5) is self-starting and proactive' (Frese, Kring, Soose & Zempel, 1996, p. 38).

In this context, a syndrome is a set of co-occurring behaviours that together signify initiative. In our view this behaviour syndrome can best be explained within an action theoretical approach (Frese & Sabini, 1985; Frese & Zapf, 1994, Hacker, 1985). Actions are goal oriented and guided by the goal. At work, the goals are heavily influenced by the tasks given to an individual job holder. However, there is a translation process from the outside task into the goals—the redefinition process (Hackman, 1970). For example, a blue-collar worker may redefine his/her task to imply that a certain quality should be achieved, even though this quality is not mentioned in his/her contract or in the official task description. Thus, the worker's production goals would not just refer to producing a certain number of parts within a given time but would include the additional goal of how good the quality of these products should be This redefinition process allows the definition of *extra-role goals* (as shown by Staw & Boettger, 1990). Initiative, as used here, implies pro-company goals (in principle, one can also take initiative which is directed against the company, e.g. stealing from the company)

Goals may have different time frames. If a production worker is confronted with a breakdown of his or her machine, he or she may ask a repair person to fix the machine, the short-term goal of being able to continue work would be met. If he or she has a long-term orientation, however, he or she might consider whether the problem might re-occur in the future. In such a case, he or she would get advice from the repair person on how to prevent breakdowns or how to fix the breakdown him- or herself. In this case, the worker would not just react to what is needed now but reflect on future tasks and demands (Frese, Stewart & Hannover, 1987) This *longer time frame* with its long-term goals is a prerequisite of initiative

Goals are translated into actions differentially Kuhl (1992) has extensively written about differences in how quickly people translate intentions (goals in our terminology) into actions. Some people may want to do something (have a certain goal) but still not do this particular action ('state orientation'), others will quickly put the intention into action ('action orientation'). Kuhl (1992) has argued that there are mediating thought processes in state orientation. State-oriented people think about bad things that have happened to them, good things that might happen, etc Thus, they are more occupied with their thoughts than with their actions Action-oriented people do not think about the

problems and advantages of their goals, rather they translate these goals quickly into actions. Thus, initiative implies that one *implements* one's goals and ideas.

Implementation of long-term goals often leads to new problems, barriers and setbacks. Since new suggestions for work improvement, new procedures to do things, etc., have not been tried before, one will experience difficulties. These difficulties may be of a social form, for example, the supervisor may not like the new idea or it may be part of the new action to be learned, such as a new procedure not working right in the beginning, or not finding a good solution to a problem immediately. If one does not overcome these difficulties, if one gives up quickly in face of barriers, there is no initiative. Initiative, therefore, implies that one will deal with these obstacles actively and *persistently* (cf. Gollwitzer, 1993, for a discussion of the factors that lead to persistence in goal pursuit).

Thus, personal initiative is a behaviour syndrome that is based on developing a fuller set of goals that goes beyond what is formally required in the job and by being *pro-active*. The latter implies that one thinks of long-range problems, develops long-term goals and implements one's ideas.

Personal initiative and other constructs

Personal initiative is related to but not identical with other constructs, such as entrepreneurship/intrapreneurship (Hisrich, 1990), organizational citizenship behaviour (Munene, 1995; Organ, 1990) and achievement motive (McClelland, 1987). Initiative and entrepreneurship both imply the use of productive, creative and active strategies and overcoming problems in case they occur. For this reason, we would expect that, empirically, entrepreneurs should show a higher degree of initiative.

In many ways, the concept of organizational citizenship behaviour (OCB) was the prime mover of taking contextual performance more seriously (Organ, 1988). Both OCB and initiative go beyond direct role requirements, OCB and initiative are seen to contribute indirectly to organizational effectiveness (Organ, 1988). However, there are also differences. Empirically, OCB is mainly made up of two factors, altruism and compliance. Compliance has a more passive connotation, e.g. conscientiousness in attendance ('does not take extra breaks'), adherence to rules, etc. In contrast, the concept of initiative often implies a certain rebellious element towards the supervisor. OCB takes the framework of the supervisor as the starting point—how helpful is the worker from the supervisor's perspective. However, supervisors often fail to support initiative and even punish active approaches. While both initiative and OCB are pro-organizational concepts, we think that the time perspective is different. A worker with high initiative contributes to long-range positive outcomes for the organization but in the short term, he or she may well be a nuisance factor to the boss because he or she is constantly pushing new ideas (cf. some graphic descriptions on this issue in Peters & Waterman, 1982). In contrast, OCB is more oriented towards a short-term positive social orientation at the work place; some even argue that OCB and ingratiation behaviours are similar (Eastman, 1994). Additionally, as George & Brief (1992) have pointed out, OCB includes role-prescribed behaviours while initiative does not.

Whilst we are generally interested in initiative, our work was also driven by our historical interest in the lack of initiative that exists in East Germany (Frese *et al.*, 1996).

This also led us to be less concerned with OCB. In East Germany, supervisors have been raised in the orientation that initiative is something bad that needs to be punished (cf. Schultz-Gambard & Altschuh, 1993, cf also Pearce, Branyicki & Bukacsi, 1994). Thus, asking supervisors about initiative would have been a flawed strategy. Most certainly the issue in East Germany is not to increase OCB (in the sense of helping along and conscientiousness) but to increase initiative, because OCB has probably been traditionally quite high.

McClelland's (1987) concept of need for achievement has a large overlap with our definition of initiative as consequences of need for achievement are persistence, responding to moderate challenges, personal responsibility for performance, and innovativeness. Obviously, the need for achievement should be one of the motives (antecedents) to show the behaviour of initiative. McClelland (1986) has also differentiated between initiative and the achievement motive (as antecedents of successful entrepreneurship, cf. also Spencer & Spencer, 1993). In line with this differentiation, we think that an additional difference is that achievement motive does not imply the self-starting (and extra-role behaviour) nature of initiative. High achievers do not necessarily show self-starting behaviour, but may show their achievement strivings completely within the realms of what is demanded in the job (although they will have a tendency to increase the efficiency of their work). Thus, the achievement motive should be an antecedent of initiative behaviour but it is not the same as initiative.

Measuring initiative

Initiative should not only be measured with questionnaire measures. There were three types of arguments important for us. First, the special situation in East Germany meant that the problem of initiative was discussed in the popular press. Thus, there is some pressure to respond in a socially desirable way. Social desirability is difficult to control for. Different scales of social desirability are unrelated (Mummendey, 1981). Further, it was demonstrated that the need to give socially desirable answers is context specific (Dickenberger, Holtz & Gniech, 1978).

Second, McClelland (1987) and Spencer & Spencer (1993) argue that questionnaires tend to measure self-concepts or espoused theories (what the person says) and do not necessarily reflect real behaviour. McClelland has additionally argued that questionnaire measures of the achievement motive only measure the importance that is assigned to the motive but not the extent of the motive. We think that these arguments hold true also for initiative.

Third, method biases exist when only one measurement method is used. Therefore, for reasons of triangulation (Webb, Campbell, Schwartz & Sechrest, 1966), it is more convincing if both interview- and questionnaire-based measures lead to similar results. Therefore, we have developed a questionnaire-based initiative scale in one of the waves of our longitudinal study.

To study all of the aspects of the behaviour syndrome personal initiative, the following scales were developed.

First, *general initiative at work*. This refers directly to those actions at work that go beyond what is formally required in a given job. Questions on past initiative were asked, for example, whether in the last two years the participants had looked into some work

problem to find out why things were not working out. If the answer was yes, the interviewer probed whether it went beyond what other workers in the same context were doing. Both qualitative and quantitative forms of personal initiative were coded. If the activity was something that mainly required additional energy, it was quantitative initiative. If it included completely new problems, ideas, goals and strategies that went way beyond what was expected from a person in this particular job (for example, looking into a complicated production problem by a blue-collar worker or an attempt to reorganize the work structure by a low-level supervisor, etc.), it was deemed to be qualitative initiative. An example might explain this point. A pay-roll accountant receives the figures needed to calculate the salaries much too late (without being responsible for this). She, therefore, does overtime to finish the salary calculation in time to pay out the salaries. Is this initiative? Since she has not been told to do it, she shows extra-role and self-starting behaviour. She takes a certain long-term perspective because she thinks of people not receiving their paycheck on time and the 'nasty' situation this would produce for her department. She is action oriented and persistent. Thus, all criteria of initiative apply. Still, we would call this only quantitative initiative: the amount of work is increased but she does not go way beyond her normal work. If she would make sure, however, that such a situation (of getting the figures too late) does not happen again in the future, we would conceptualize this to be qualitative initiative. For reasons of economy, both qualitative and quantitative were included in the scale general initiative at work.

Second, *overcoming barriers*: Overcoming barriers looks at persistence in spite of barriers and setbacks and measures a person's tenacity when confronted with difficult situations in the pursuit of a goal. Our measure was inspired by the situational interview (Latham & Saari, 1984). The interviewer presented some problems; for example, what would the participant do if a colleague's work was always sloppy, necessitating additional work by the participant to correct it. After the participant had given a response, the interviewer would give a reason why this particular strategy (e.g. involving the supervisor) would not work; for example, the supervisor would not want to become involved in this case (this constituted a barrier). In this way, a number of barriers were put forth and the number overcome recorded. Note that this measure is a performance measure within the interview setting. As any performance measure, both ability and motivation play a role here. The ability is probably related to creativity and must be complemented by an intention to overcome the barriers (Gollwitzer, 1993)

Third, *active approach*: Pro-activity was measured as whether people actually used an active approach in their overcoming of barriers and kept the initiative themselves or if they just delegated the solutions to somebody else (for example, the supervisor).

Fourth, *interviewer evaluation*: This was a general subjective impression given by the interviewers after the interview. It is related to all aspects of initiative (semantic differential).

Fifth, *education initiative*: Education initiative was an interview-based scale related to one specific area (continuing education—an important area in East Germany). Here the tight relationship between goals and actions, the persistence of ideas in spite of setbacks, and the long-term focus were ascertained.

Sixth, *self-reported initiative*: Finally, a questionnaire filled out by the participants was developed for one of the waves in East Germany. This measure is similar to Bateman & Crant's (1993) pro-active behaviour; however, the questions were a bit more behavioural.

Seventh, *spouse-reported initiative*: The same measure was also filled out by the spouse for a reduced sample. This scale was used as a validity check.

We think that the combination of these measures constitutes a fair description of the person's tendency to take charge at work and initiative. The first two ascertain initiative retrospectively; continuing education initiative is current but is restricted to one area, overcoming barriers is a performance scale that combines the assessment of tenacity in pursuing a goal, active approach is related to how much the participant was perceived to be active while answering the 'barrier' questions; interviewer evaluation represents a global estimate by the interviewer. Finally, self-reported initiative is based on a different type of information—the participants' concepts of their initiative

Construct validation of initiative

To establish construct validation it is important to show that there are meaningful correlations with other constructs and that there are no correlations with variables that a scale should not correlate with (Campbell & Fiske, 1959). In our case, we have used different methods to ascertain initiative in the sense of multiplism (Cook, 1985) but we did not develop a full multitrait-multimethod matrix.

Within-construct correlations

We developed several scales on initiative using different methods and slightly different areas in which initiative may play a role (e.g. workplace initiative and continuing education initiative). Thus, a first prerequisite is that these different methods should correlate adequately. These correlations should be similar in East and West Germany if there is a general validity to our scales.

Hypothesis 1: The various measures of initiative show medium-sized correlations, both in East and West Germany

The second hypothesis follows from the first. Since we assume that all of the interview-based scales measure initiative, they should also all load on one factor.

Hypothesis 2: A one-factor solution appears in a second order principal component analysis

A good test of a scale's validity is to ask peers (Frese *et al.*, 1987). A good judge of a person's activities is certainly the spouse or partner. We therefore asked a subsample of husbands and wives to fill out a questionnaire on their spouse's initiative (done only in the East). We assume that given the situation in East Germany, there is still a problem of social desirability with this measure because spouses want their husbands or wives to appear in a favourable light and even the answers by another person will reflect their spouses' degree of attempting to look good. Therefore, we assume that the spouses' judgments are not as highly correlated with our performance scales (e.g. overcoming barriers or education initiative) but more highly with self-described initiative

Hypothesis 3: There are moderately high correlations of spouse's estimate of initiative with self-reported own initiative and low but significant correlations with the other initiative scales

Correlations with other constructs

An obvious correlate of initiative is *need for achievement* (McClelland, 1987) (cf. our above-mentioned arguments). Although McClelland (1987) warns against using a questionnaire measure for need for achievement, for reasons of research economy we used a self-report scale by Modick (1977, 1978), which is based on a scale by Hermans (1970) and is supposed to be one of the better questionnaire measures of need for achievement (Heckhausen, 1980). It is a fair statement that this scale does not get at the heart of the construct of need for achievement but measures more achievement values (Modick, 1977; McClelland, 1987).

Hypothesis 4: There are moderate relationships between initiative and the achievement measure.

Our concept of initiative implies some degree of action orientation. Showing initiative requires that a person is not 'lost in thought' but is implementation oriented. Kuhl (1982) has developed scales to measure action orientation, implying that one takes an action quickly after forming an intention to act. Action orientation should correlate with our measures of initiative. However, the measures developed by Kuhl (1982) are thought to be personality variables and they are measured generally, not in a work-oriented context. Since they are general, we assume that they do not correlate highly with our specific work-related initiative scales (particularly not with the interview-based scales). Moreover, action orientation is not a measure that is specifically oriented towards initiative but to general intention-action relationships. This leads to an asymmetric relationship between initiative and action orientation. One can show high action orientation and low initiative, however, initiative always implies a certain degree of action orientation.

Hypothesis 5: There are moderate relationships between initiative and the action orientation.

Initiative should be related to *coping strategies*. Initiative means that one is pro-active; thus, there should be some overlap with a problem-solving coping strategy implying that one attempts to actively do something to change the stress situation (Lazarus & Folkman, 1984). Similarly, there should be a negative relationship with a more passive sort of emotional coping which implies both distancing oneself from the problem and having escape and avoidance fantasies. For methodological reasons (common method variance), there should be a higher correlation with self-reported initiative than with the interview-based scales.

Hypothesis 6: There is a positive relationship between initiative and problem-focused coping and a negative correlation with passive emotion-focused coping. These correlations are higher with self-reported initiative.

One clear difference between the concept of OCB and initiative is their differential relationships with *job satisfaction*. Organ (1980) developed OCB to show that there was a relationship between a performance factor and job satisfaction and he, therefore, rightly maintains that OCB should be related to job satisfaction. This should not be the case for personal initiative. The following reasons are important. First, OCB measures the helpfulness from the supervisors' perspective. If one is dissatisfied with the supervisor, then one will probably not show OCB. This is not so for initiative. Initiative is often taken against the resistance of the supervisor. Second, initiative should not be related to job satisfaction because, theoretically, there are three opposing relationships between job

satisfaction and initiative that may work for different people at the same time. (a) A negative relationship: people with high initiative might be more dissatisfied with their job situation because of their higher aspirations and longer term orientation. This type of dissatisfaction may actually contribute to initiative at the workplace. (b) However, one could also hypothesize a positive relationship: those people who have high aspirations and feel good in their job may have an added motivation to help the company and, therefore, show initiative. (c) Finally, a different type of negative relationship is possible: some people are satisfied but this satisfaction is the result of having reduced one's aspiration level towards work (called 'resigned job satisfaction', Bruggemann, 1974,¹ cf. also Locke, 1976) Those people with low aspirations should have low goals and should, therefore, show no initiative. When developing our measures of initiative, our emphasis was not on its relationship to job satisfaction and we have, therefore, measured neither OCB nor Bruggemann's theory, although we included a general scale of job satisfaction.

Hypothesis 7. There is no relationship of initiative with job satisfaction.

It follows from our concept that personal initiative should be related to one's long-term future perspective. Thus, people with high initiative should have a clearer *career plan* than people with low initiative. Moreover, there should be a higher degree of actually transforming this plan into action. Our concept implied that there should be a tight relationship between goals and actions. Therefore, initiative should also be related to *executing* this career plan.

Hypothesis 8a. Initiative is related to developing a long-range career plan. Hypothesis 8b. Initiative is related to executing this career plan.

Initiative is of particular importance for people who have no superior who tells them to do things and who have to self-start their actions in most cases. Therefore, there should be a higher degree of initiative in *self-employed entrepreneurs*² (Frese, 1995). Intentions and behaviours are correlated (Fishbein & Ajzen, 1975) and, therefore, there should be a similar relationship for the intention to become self-employed as there is for actually being self-employed. Since becoming an entrepreneur necessitated more self-starting activities in East Germany because there were no role models, no friends who had done the same things, no parents who could help or from whom one could inherit a business, this relationship should appear in East Germany.

Hypothesis 9: Small-scale entrepreneurs show a higher degree of initiative than employed participants in East Germany. This should also be true for those who intend to become small-scale entrepreneurs

¹Bruggemann (1974) developed a sophisticated theory of job satisfaction which unfortunately is not known in the English-speaking world (cf. Bussing, 1992). Among other things, she argues that there is a form of resigned job satisfaction which is characterized by low aspirations (that are reduced in time) but positive affect.

²In the editorial review process it was argued that we are here transgressing our definition of initiative. Since the small-scale entrepreneur does not have a fixed set of roles (except to keep his or her firm alive and growing), there can be no extra-role behaviour per definition. We tend to disagree. An extreme example might explain this. If a supervisor tells his employees to show a high degree of initiative, without prescribing what he or she means in detail, initiative is still extra-role behaviour. One reason is that there might be a consensus of the workers on what constitutes 'normal role behaviour'. Another reason is that a situation without clear role prescriptions does not automatically exclude the possibility to show initiative. Without clear role prescriptions, there may actually be an additional need for self-starting activities. When there is no clear role, a self-starting activity is outside the role if it goes beyond comparable groups of people. In the case of entrepreneurs, comparable groups are managers who have as many subordinates as the entrepreneur has employees. Further, even entrepreneurs have some implicit role prescriptions that can be transcended. In this way, entrepreneurs can show initiative compared with other entrepreneurs.

Finally, initiative should have positive effects on the unemployed *finding a job*. Since highly initiating people will not give up when confronted with negative experiences and since they have long-range goals and a higher activity level and since they scan the environment more actively for action cues, they should follow up more leads and therefore find a job sooner than low initiating people. Moreover, they should also be more *employable* because a person talking to them would perceive them to have a higher energy level.

Hypothesis 10*a*. Unemployed people with high initiative find a job faster than unemployed people with low initiative. Hypothesis 10*b*. Interviewers perceive the employability of the high initiative participants to be high.

East and West German samples

These hypotheses were tested in interrelated studies. One is based on a sample from West Germany, the other one on different waves of a longitudinal study in East Germany. Not all scales were ascertained in each wave or sample (details in Table 1). To argue that initiative is the same construct in both countries (and possibly universally), it should show similar correlations and the hypotheses should similarly apply to both parts of the country (except for hypothesis 9). Thus, lawful relationships should be the same, although we found significant mean differences between East and West Germany for initiative (Frese *et al.*, 1996).

Cross-sectional analyses are sufficient for validity purposes within the design of this study. Therefore, we report cross-sectional relationships except when looking at the stabilities of the scales and the analysis of the unemployed, which necessitate a longitudinal approach.

Method

Sample

Two representative samples were drawn from two cities. One was Dresden, a large city in the south of East Germany, it is the capital of Saxonia, houses a large Technical University and is relatively well off (compared, for example, with cities in the north of East Germany). The sampling was done by randomly selecting streets, selecting every third house and in each house, every fourth apartment (in smaller houses every third one). People between the ages of 18 and 65 with full-time employment at t1 participated (thus, we sometimes had more than one person per family). The refusal rate of 33 per cent was quite low for a study of this kind. Confidentiality was assured, if participants preferred anonymity, this was done with the help of a personal code word.

In wave 1, 463 people participated in Dresden. At t2 202 additional people were asked to participate.³ At t3, *N* was 543 in the East and at t4, *N* was 506. Experimental mortality in the East did not prove to change the make-up of the sample. There were no significant differences in the initiative variables between drop-outs from t1 and t3 and full participants. The sample is representative of the Dresden population on the relevant parameters (for example, for age, social class, male/female percentage at work).

For comparison we chose the city of Mainz in the West—a smaller city than Dresden but with similar features. It also houses a university, a state government, is relatively conservative, and there are relatively few foreigners. The selection procedure was the same as in the East.

³Additional people were added to ascertain whether repeated participation had an influence on initiative. This was not the case.

We restricted the analyses to t_3 and t_4 (wave 3 was done 1991, wave 4 in 1992) This was necessary because we only had West and East German data at t_3 and we wanted to look at validity issues both in East and West Germany at comparable times⁴

The N varies across the analyses There are missing data and certain questions were only presented to certain people (for example, probing deeper into questions related to continuing education) When using correlation-based analyses, pairwise deletion of missing data was used, which has been demonstrated to be the best procedure for handling missing data (Roth, Switzer, Campion & Jones, 1994)

Interview procedures

Structured interviews were used to measure personal initiative, with additional prompts adapted by the interviewer to the particular answers provided The interviews were carried out by trained psychology and business students from Munich, Giessen and Dresden Interviewers took part in a two-day course, training in every step of the interview with a role-playing procedure, particularly how to use prompts Thereafter, the first interview of each newly trained interviewer was done together with an experienced interviewer, which provided additional learning for the interviewers

Participants' answers were written down by the interviewers in a short form that was later typed⁵ and used as the basis for a numerical coding system After the short transcripts of the interviews had been typed, they were coded by the interviewer him- or herself and by a second coder The coding system was either factual (for example, participant is unemployed or not—a dichotomous variable), or it involved some kind of judgment (for example, to what extent does a certain answer constitute initiative, usually a five-point scale was used in these cases) Examples were provided for the end-points as anchors of the scales The use of the coding system was also practised in the course

The means of the scale values of both raters were computed and used in the calculations From the third wave onwards the codings were culturally cross-checked, both in the East and in the West, interviews done by interviewers from East Germany were recoded by interviewers from the West and vice versa Inter-rater agreements were adequate and are presented below

After the interview, the participants were given the questionnaires to fill them out at their leisure (usually they were picked up after one or two weeks) Immediately following the interview, the interviewer rated the participant on a number of dimensions—this was deliberately used as a subjective interviewer's response to the interviewee in question For this reason, no inter-rater reliability was calculated here

Operationalization of the variables

Table 1 presents the scales, sample items, Cronbach's alphas, means and standard deviations, East and West collapsed (t_3 data), an Appendix lists the items for those two scales that have been developed anew for this study and have not been reported in the literature before

Quantitative and qualitative initiative at work Direct questions on past initiative were asked The interviewer probed into the nature of the problem and activity Qualitative and quantitative forms of initiative were first differentiated, but are usually combined into one scale because of their high intercorrelations However, in some analyses we used quantitative and qualitative initiative separately (e.g. intercorrelations or scales and factor analysis) Quantitative initiative implies that a similar type of behaviour is shown that is also done in the job (e.g. volunteering to help a co-worker who has a problem with getting his or her job done), qualita-

⁴There was one scale—need for achievement—which we only ascertained at t_5 While this wave has not been analysed yet, this variable seemed to be important enough to include it in the analyses reported here It is a typical problem of longitudinal studies that one adds certain measures that have appeared to be important for construct validation purposes at later dates

⁵For reasons of research economy, we did not use verbatim transcriptions of the interviews This was not necessary because the coding system was developed beforehand and the interviewers knew which answers had to be written down to make coding possible However, the interviewers were also trained to write down the relevant responses verbatim as much as possible, therefore, real coding had to be done (the records were not just a shorthand for coding)

Table 1. Scales and scale characteristics and stabilities

	N items	Wave used	N	Range	Alpha	Stability	M	SD
<i>Initiative variables</i>								
Work/quantitative and qualitative	8	t3	651	1-5	.74	.41**	2.15	.78
Education	5	t3	689	0-5	— ^a	.55**	2.12	1.64
Interviewer evaluation	11	t3	688	1-5	.93	.45**	3.75	.85
<i>Overcoming barriers</i>								
East	4	t3	525	1-7	.60	.33**	2.95	.75
<i>Overcoming barriers West^b</i>								
West ^b	4	t3	150	1-7	.58	—	3.16	.66
Active approach	4	t3	687	1-5	.70	.32**	3.57	.78
Self-reported	7	t4	497	1-5	.84	.69**	3.56	.52
<i>Other variables</i>								
<i>Spouse-reported</i>								
initiative	7	t4	220	1-5	.80	—	3.82	.61
Need for achievement	7	t5	469	1-6	.84	—	3.97	.75
Action orientation	23	t3	694	1-2	.82	.76**	1.61	.20
<i>Problem-focused coping</i>								
Passive emotion-focused coping	5	t3	684	1-4	.77	.42**	2.49	.76
Passivity	7	t3	686	1-4	.64	.39**	1.67	.52
Passivity	7	t3	532	1-5	.87	.52**	2.63	.94
Job satisfaction	8	t3	586	1-5	.78	.50**	3.27	.69

Note t3 data used whenever possible and not otherwise noted, West and East combined, stabilities calculated from t3 to t4 (only East)

^aNo alpha calculated because it is an index

^bSlightly different versions between East and West

initiative implies that there is a large difference between the job content and the content of one's initiative (e.g. a blue-collar worker suggesting changes in the set-up of the assembly line). Inter-rater correlations of quantitative and qualitative initiative were $r = .84$ in the East and $r = .89$ in the West.

Overcoming barriers Overcoming barriers is a behavioural measure of a person's tenacity *vis-à-vis* a problem situation. The interviewer presented some problems, for example, what the participant would do if he or she was a production worker and the machine breaks down. After each response the interviewer would say that it is not possible to solve the problem in this way, for example, the supervisor cannot be reached (this then constitutes a barrier). The interviewer stopped after presenting the third barrier (the question itself constituted the first one). At this point, the participant was asked whether he or she could still think of additional strategies. We counted how many barriers the participant was able to overcome, including the additional ideas (inter-rater agreement was $r = .80$ in the East and $r = .86$ in the West).

Active approach Overcoming barriers may be done in different ways, for example, by delegating the solutions to somebody else (for example supervisor) or by actively doing things oneself. To get at this issue, the interviewees were asked to rate how active the person was in his or her propositions for overcoming the barriers. This rating was done across the four items (no rerating was done here because it is based on a subjective impression).

Interviewer evaluation Here the interviewers were asked for their subjective impression of the participant by filling out a type of semantic differential on their general subjective impression of how active, initiating, plan- and goal-oriented the participants were (no rerating was done here)

Education initiative. Education initiative was an index consisting of interview items like 'Does the participant intend to take part in some continuing work-related education⁶ in the future?' The coding was based on what the participants had planned and how concrete or abstract these plans were (for example, did the person already know which course he or she would take, did he or she register for the course, etc.) The inter-rater agreement was $r = .88$ in the East and $r = .92$ in the West

All the interview-based initiative variables are described in more detail in Frese *et al.* (1996)

Self-reported initiative at work was based on items in the questionnaire at t4 which was developed for this study (cf. Appendix)

Spouse-reported initiative at work was the same scale as self-reported initiative. Its alpha was .83

Need for achievement is a reduced German questionnaire scale of the factor future-oriented achievement motivation by Modick (1977, 1978)

Action orientation was measured with Kuhl's (1982) scales. The questionnaire differentiates between three different aspects of action orientation—action orientation in action planning, after failure and after success. Since we did not have any differential predictions with regard to these three aspects and since their inter-correlations were substantial (mean $r = .43$ in the East and $.40$ in the West), we combined all three aspects into one scale. This also increased reliability of the full scale (cf. Table 1)

Problem-focused and passive emotion-focused coping were operationalized with the measure by Folkman & Lazarus (1980) and Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen (1986). However, our factor solution was not entirely consistent with the ones by Folkman *et al.* Problem-focused coping was nearly equivalent but passive emotion-focused coping consists of items from both factors 'distancing' and 'escape-avoidance' in Folkman *et al.* We used one concrete stressor that had happened during the last week as a stimulus in the vignette (this was determined in the interview and written into the questionnaire)

In addition, we operationalized one specific aspect of *passivity* in a general questionnaire (cf. the Appendix), namely that one does not attempt to actively influence one's career. There is some overlap between passivity and passive emotion-focused coping but this overlap is moderate as the correlation between these two variables shows ($r = .17, p < .001, N = 523$)

Job satisfaction was measured with a scale modelled after Warr, Cook & Wall (1979). Others were measured with single items. Employability was measured with a single item, filled out by the interviewers ('Would you employ this person?'). Career plan and whether or not an earlier one had been executed was asked in the interview with single items. Finally, the participants were asked in the questionnaire whether they would like to change into self-employment⁷ or whether or not they were self-employed

Results

The reliabilities and stabilities (the latter only for the East) are presented in Table 1. The reliabilities are adequate. Even the low reliabilities for overcoming barriers in the East and West are sufficient for this type of study (Nunnally, 1978, p. 226 assumes that .50 to .60 are the lower bounds of reliabilities for an early stage of research). The stabilities were usually between .30 and .50 for the interview-based scales and somewhat higher for the

⁶Work-related continuing education is an important issue in German companies, it is often done on company time and paid for by the company (although there are many differences from company to company)

⁷This question had many missing data, presumably because many people assumed this question was not relevant for them

questionnaire scales. The stabilities may appear to be low; however, they should not be very high because a one year time lag is appreciably long and high environmental changes were taking place during this time in East Germany. Moreover, different interviewers doing the interviews at different times adds an additional source of noise in the data.

The results on construct validation are now reported with reference to the hypotheses developed above.

Intercorrelations of scales

According to our hypothesis 1, the various measures of initiative should be a part of a general syndrome and, therefore, they should show medium-sized correlations, both in East and in West Germany. Table 2 reports the intercorrelations of the initiative scales, including the correlations of the interview-based scales with self-reported initiative in the East. They confirm by and large our hypothesis. The average intercorrelations of the interview-based scales excluding the correlations with self-reported initiative were $r = .40$ in the East and $r = .40$ in the West—calculated after r -to- z transformations.

The highest correlations appeared between work/qualitative and work/quantitative. The lowest correlations were between interviewer evaluation and overcoming barriers in the West. However, all the intercorrelations of the interview-based scales were significant and with few exceptions they were above .25.

Self-reported initiative was only ascertained in the East. It correlated significantly and partly sizably with all of the interview-based scales at t4, although the correlations were by and large smaller (average correlation .22) than the average intercorrelations of the interview-based scales; this is understandable because this is the only questionnaire-based self-report variable in the Table. We think that there was a higher degree of self-presentation and social desirability reflected in this scale and we suggest that the lower correlations were mainly due to this fact.

Table 2. Intercorrelations of the initiative scales (upper triangle: East, lower triangle: West)

	Initiative						
	1 Work/ qualitative	2 Work/ quantitative	3 Education	4 Interviewer evaluation	5 Overcoming barriers	6 Active approach	7 Self-reported initiative
Work/qualitative	—	.76**	.25**	.40**	.23**	.27**	.23**
Work/quantitative	.86**	—	.25**	.36**	.24**	.30**	.28**
Education	.39**	.33**	—	.52**	.32**	.39**	.11*
Interviewer evaluation	.30**	.28**	.39**	—	.44**	.63**	.29**
Overcoming barriers	.31**	.20**	.28**	.18*	—	.62**	.19**
Active approach	.40**	.39**	.30**	.49**	.50**	—	.18**

* $p < .05$, ** $p < .01$

Note: Data are cross-sectional correlations from t3 except self-reported initiative (t4). N varies from 498 to 528 (East), from 401 to 480 (column 7), from 139 to 160 (West)

The correlational structure of Table 2 is a first indication of the idea that initiative is a syndrome since the scales were ascertained by different procedures and based on different people's accounts (for example, on interviewers' subjective impressions, and a rather objective count of problem-solving alternatives) and pertain to different areas of the initiative construct.

There were a few East–West differences in the magnitude of the intercorrelations (three differences were significant: overcoming barriers with interviewer evaluation, active approach with interviewer evaluation and work/quantitative and qualitative). Since these are three correlations out of 15 comparisons and since there is no systematic pattern in these results, we tend to interpret them as random.

Second order principal component analysis

Table 3 displays the results of the second order principal component analyses. Stable one-factor solutions appeared at t3 and t4 in the East and also in West Germany when using an eigenvalue cut-off point of 2. This one factor explains in each case about 50 per cent of the variance.⁸ Thus, there is evidence for our hypothesis that initiative is a behaviour syndrome.⁸ From now on, we shall use an aggregated scale of the interview-based scales (second order aggregation) and report the results only with this scale.⁹ This aggregated scale was developed separately for East and West Germany, after the single initiative scales had been z transformed (the aggregated score does not include self-reported initiative, of course).

Table 3. Loadings of second order principal component analyses (one-factor solutions)

Initiative variables	East t3	East t4	West t3
Initiative (work) qualitative	67	76	82
Initiative (work) quantitative	68	79	78
Education	63	.58	63
Interviewer evaluation	80	79	61
Overcoming barriers	67	63	56
Active approach	78	70	74
Explained variance (%)	50.3	50.8	48.5

Note: Eigenvalue > 2.0

Correlations with partner ratings

Table 4 presents correlations to test hypotheses 3, 4, 5, 6, 7 and 8. The hypotheses were developed for the interview-based scales. Since we were interested to look at the behaviour

⁸Similarly, a one-factor solution appears when spouse/partner and self-reported initiative are included. However, for the reasons given in this article, we want to keep questionnaire and interview-based measures separate.

⁹The aggregated scale behaves similarly as the individual scales. The tables with the results for all the scales are available from the first author on request.

Table 4. Correlations with other constructs (N in parentheses)

Initiative variables		Self-reported initiative ^a		Aggregated initiative	
Spouse-reported initiative	East t4	.35***	(220)	.23*** ^b	(173)
Need for achievement	East t5	.58*** ^c	(469)	.20*** ^c	(332)
Action orientation	East t3	.35***	(494)	.20***	(491)
	West t3	—		.14*	(135)
Problem-focused coping	East t3	.35***	(485)	.20***	(488)
	West t3	—		.19**	(131)
Passive emotion-focused coping	East t3	-.02	(486)	-.17***	(489)
	West t3	—		-.25***	(132)
Passivity	East t3	-.08*	(491)	-.24***	(487)
Job satisfaction	East t3	.10**	(386)	.07	(397)
	West t3	—		.17**	(137)
Career plan	East t3	.10**	(475)	.38***	(494)
Executing career plan	East t3	-.06	(219)	.26***	(198)
Employability-impression	East t3	.20***	(469)	.62***	(495)
	West t3	—		.56***	(138)

^a $p \leq .10$, ^b $**p < .05$, ^c $***p < .01$

^aThis correlation was calculated for t4 variables because self-reported initiative was only measured at this time

^bThis correlation was calculated for t4 variables because spouse-reported initiative was only measured at this time

^cThis correlation was calculated for t5 variables because need for achievement was only measured at this time

of the self-reported scale on initiative as well, this was also included in these tables, even though we do not have specific hypotheses in each case for this scale.

Table 4 shows that hypothesis 3 is correct. Spouse's estimates of partners' initiative correlated .23 with the aggregated initiative scale. The correlation was—as expected—somewhat higher with self-reported initiative (.35) albeit this difference was not significant.

Need for achievement

Hypothesis 4 states that there should be a low to moderate relationship between initiative and need for achievement. The results in Table 4 support this hypotheses (.20). The correlation with self-reported initiative was significantly larger (.58, difference with r -to- z transformation $z = 6.73$, $p < .01$), suggesting some common method variance to be operative.

Correlation with action orientation

The correlations of action orientation are low but significant with the aggregated initiative score in the East and substantial with self-reported initiative. However, the correlation is not significant for the West data. Thus, hypothesis 5 on the correlation between initiative and action orientation is partly confirmed.

Correlations with coping

According to hypothesis 6, initiative should correlate positively with problem-focused

coping and negatively with passive emotion-focussed coping. The results in Table 4 support this hypothesis. There are small but significant correlations for the aggregated initiative scale both in the East and in the West with all of the coping measures. In contrast to our hypothesis, the correlations with the questionnaire-based measure of initiative were not larger. While there was a significant correlation with problem-focused coping (.35), the correlations with passive emotion-focused coping and passivity were small.

Correlations with job satisfaction

We have argued in hypothesis 7 that there should be no relationship between initiative and job satisfaction. The respective correlations in Table 4 give some but not full support to this hypothesis. Job satisfaction is not related to the aggregated score of initiative in the East, but there is a small, but significant correlation in the West as well as a small positive correlation with self-reported initiative in the East. However, these relationships are nowhere near the correlations reported in the literature on job satisfaction and OCB (Organ, 1990).

Thus in general, the results support the idea that initiative, particularly the interview-based scale should be differentiated from OCB, which is supposed to correlate with job satisfaction.

Clearer career plan and executing it

People with high initiative should develop long-range career plans and should have executed them more often since the last wave (hypotheses 8a and b). Table 4 shows that this is correct. The correlations between the aggregated initiative measure and developing a career plan (only East data) was .37. This correlation is actually quite large given the fact that not every person needed to develop a career plan at the time the question was asked.

The correlation with execution of the plan was smaller but still significant. A smaller correlation was expected, because not every plan could be executed within a given time and initiative is certainly not the only factor influencing plan execution.

The fact that self-reported initiative correlates negatively, albeit non-significantly, with executing a career plan makes us wary of this self-reported variable. This justifies our reasoning that one has to be sceptical about self-reported data in this area.

Self-employment

As suggested in hypothesis 9, people who had the intention to become self-employed were higher in initiative (Table 5, showing the relevant subsections of our sample). This was significant in the East but was only significant at the .10 level in the West¹⁰ for aggregated initiative. Self-reported initiative did not show significant results (only East data). This is interesting because a questionnaire-based item (intention to become self-employed) renders significant correlations only with the interview-based initiative construct. From a common method point of view, this would not be expected.

¹⁰There is, of course, less power in the West sample because of the smaller sample size.

Table 5. ANOVAS with initiative (N in parentheses)

	Self-reported initiative ^a	Aggregated initiative (interview)
<i>East means</i>		
Would like to change into self-employment		
No	3.48 (137)	–.01 (193)
Possibly	3.67 (15)	.43 (36)
Yes	3.79 (9)	.69 (18)
F	n.s.	11.65***
<i>West means</i>		
No	—	–.06 (65)
Possibly or yes	—	.38 (8)
F	—	2.77*
<i>East means</i>		
Position now		
Same job as 7 mo. ago	3.59 (229)	.00 (282)
Different job, but same company	3.48 (28)	.09 (34)
Different job, different company	3.55 (89)	.11 (69)
Unemployed	3.38 (40)	–.08 (57)
Self-employed	3.86 (13)	.88 (9)
F	2.73**	4.00***
<i>East means</i>		
Unemployed t3		
Unemployed t4	3.52 (21)	–.47 (12)
Employed t4	3.53 (7)	.28 (23)
F	n.s.	8.74***

* $p < .10$, ** $p < .05$, *** $p < .01$

^aData on self-reported initiative refers to t4 as it was only measured at this time

As hypothesized, the small-scale entrepreneurs showed a higher degree of initiative than employed people in East Germany¹¹ (cf. Table 5). The few small-scale entrepreneurs in our sample clearly stand out in their degree of initiative. The same result also appeared with self-reported initiative.¹²

Finding a job and better employability

As expected in hypothesis 10a, unemployed people with high initiative found a job faster than those with low initiative (cf. Table 5). In this analysis only that subsection of the sample was included that was unemployed at t3. Those who got a job at t4 had been significantly higher in the aggregated initiative at t3 than those people who stayed unemployed. Thus, initiative predicts overcoming unemployment. The results for self-reported

¹¹The same analysis could not be done in West Germany because of the smaller sample size.

¹²The self-reported initiative results are based on t4, the aggregated initiative results on t3, therefore there are different Ns, as reported in Table 5.

initiative did not show any differences between these two groups of unemployed (self-reported initiative was only measured at t_4 , thus there are only cross-sectional data here)

According to hypothesis 10b, the interviewers should have a more positive impression of the employability of the high initiative participants. This is true, as displayed in Table 4. Correlations with the aggregated scale were between .56 and .62, with self-reported initiative .20. Thus, our interviewers would employ those individuals who showed a high degree of initiative in the interview, if they had to work as personnel directors.

Discussion

In general, our hypotheses were substantiated by the results. The newly developed personal initiative measure demonstrated a good degree of validity. All the scales were well intercorrelated and there was a second order one-factor solution for the different measures of initiative, substantiating the claim that initiative is a syndrome with interrelated parts. This allowed us to aggregate the scales into one interview-based measure of initiative.

The following hypotheses proved to be correct for the aggregated initiative scale. First, self-reported and interview-based scales correlated significantly. Second, partners estimated the focal persons' initiative similarly to the interview-based scale (and to their own self-reports). Third, there is evidence for a correlation between initiative and need for achievement (or achievement values). Fourth, initiative correlated significantly with action orientation, at least in the East. Fifth, active and passive coping strategies were lawfully correlated with initiative. Sixth, the correlation with job satisfaction was much lower than reported in the literature on OCB. Seventh, people with high initiative also planned their career well and executed their career plans more often. Eighth, people who intended to become self-employed and those who actually were small-scale entrepreneurs displayed a higher degree of initiative. Ninth, if people became unemployed, initiative helped them to get a job again. Finally, initiative was related to employability as perceived by the interviewers.

The correlations were usually in the low to medium range but nearly all validity correlations of the aggregated initiative were .20 and above. Still, one could argue that the correlations are not high enough for validity coefficients. The following arguments speak against this viewpoint. First, in contrast to many studies we have attempted to minimize common-method variance. Correlating questionnaire scales (like coping, need for achievement, wanting to become self-employed, spouse initiative) and interview-based scales leads to a reduction of the relationships. If there is no common method variance, any kind of noise in the data (like unreliabilities) will reduce the correlation. Thus, we can interpret the observed correlations to be the lower boundary of the true correlations. Second, one should not expect very high correlations. The notion of construct validity does not assume a 1.00 correlation as a sign of good validity. Take the correlation between problem-focused coping and initiative as an example ($r = .21$ in the East). Problem-focused coping was a questionnaire scale ascertained with regard to one particular stressor that the participants reported to have happened during the last week before the interview. Thus, this measure is directly related to the stressor at work of a week ago. Such a variable should certainly not have a 1.00 correlation with initiative (when it is based on initiative behaviour during the last two years or during the interview). Third, in terms of

substance, even small correlations may be quite important (as has been shown, e.g. by Abelson, 1985; Frese, 1985; Rosenthal & Rubin, 1979).

Where does this leave us? We think that we have shown the empirical usefulness of our initiative scales. Thus, the interview-derived scales and their aggregation can and should be used in research on indirect organizational effectiveness and its precursors such as initiative. Once one has a set of scales of initiative, we can answer the question which conditions lead to higher or lower initiative. Of particular importance is the prediction of initiative due to working and organizational conditions. Frese *et al.* (1996) have shown that control and complexity at work are important predictors for initiative. Since initiative is of high importance in most jobs and will be of higher importance in the future, it is tantamount to understand which organizational conditions increase or undercut personal initiative.

One could be tempted to use scales such as ours in assessment centres. In the long run, this is a goal of our research. However, at the moment we would be concerned that our interview situation was quite different from a selection interview. Thus, we are not yet sure that our scales will have the same validity in a selection situation. For example, we discouraged people in the part that tested 'overcoming barriers' to just take a flight of fancy and present us with all sorts of solutions that they would never entertain using in their real work situation at all. If people are under the impression that overcoming barriers is a sheer creativity question, they might just give 'creative' answers with very little reality content. We assume that such a tendency would be stronger in an assessment centre.

Our study has limitations and strengths. The most important limitation is that initiative behaviour was not observed at the workplace. This was not only impossible because the companies in East Germany would not have been receptive to such research, particularly not at the time of upheaval in 1990 when we started our research. But in addition, initiative behaviour is a seldomly occurring event that is not readily observable. Thus, peer and supervisor reports are probably the best kind of data. However, in the specific situation in East Germany, we did not want to have supervisor data for the reasons spelled out in the introduction.

The strengths are related to having developed a wide variation of scales that measure different aspects of the initiative syndrome. We have used different approaches—self-appraisal, partner appraisal, interviewer appraisal, interview-based scales that are very close to a performance scale, and probing of real life-events in general and in a specific work-related area (continuing education). Therefore, we can be quite sure of the results since the different scales lead to similar results (triangulation).

Most importantly, we have developed an interview-based rating measurement which is behaviourally anchored. We follow Spencer & Spencer's (1993) argument that questionnaire measures on issues of competence and performance have a tendency to be related to the participants' espoused theories on how one should behave rather than on how one does behave. This is not the case for our behaviourally anchored approach which allows the interviewer to probe deeply into details to find out whether or not a report is actually convincing. Moreover, we have integrated a performance situation into the interview (overcoming barriers) and get similar results on all of these measures.

Since the inception of our study, a questionnaire scale on pro-active behaviour was developed by Bateman & Crant (1993). There is an overlap of this scale with our concep-

tualization of initiative and we take Bateman & Crant's approach as a reinforcement for our view that it is necessary to develop a construct of initiative. However, our results also reinforce some scepticism towards pure questionnaire measures of initiative or pro-activity. Our questionnaire scale 'self-reported initiative', which has some item content overlap with Bateman & Crant's scale, shows the highest correlation with need for achievement. This is even higher than the correlation with partners' appraisal that is based on the same scale. This suggests a high degree of common method variance. Moreover, the important 'objective' variables career planning, executing a plan, self-employment, and getting a job when unemployed are not well correlated with self-assessments of initiative. In general, one finds that the aggregated scale (consisting of interview-based scales) is much closer to our hypotheses than self-reported initiative. This is true in nearly every case (only the correlation between self-reported initiative and problem-focused coping is higher than the one for aggregated initiative and in the direction of our hypotheses). For these reasons, we think that the validity of the self-reported scale is probably lower. This does not mean that one should not use the questionnaire scale in certain situations (e.g. when an economically usable scale is needed). However, we would urge use of the interview-based scales whenever possible, at least until future work establishes that the interview and the questionnaire scales behave similarly lawfully with regard to potential antecedents.

The findings of our interview-based measures were replicated across two different 'cultures' (East and West Germany). This gives us confidence that our measures can be used in different populations.

Finally, initiative is related to objective behaviour, such as being self-employed, coming out of unemployment more quickly, having and executing a career plan. This proves that initiative has relationships with important real-world behaviours.

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Appendix: Measures

Questionnaire

Self-reported initiative.

I actively attack problems

Whenever something goes wrong, I search for a solution immediately

Whenever there is a chance to get actively involved, I take it

I take initiative immediately even when others don't

I use opportunities quickly in order to attain my goals

Usually I do more than I am asked to do

I am particularly good at realizing ideas

Passivity

At the moment it is not useful to make any plans

I will be able to manage without making any career plans

It is still too early to make plans for my future career

My occupational maxim is 'let's wait and see'

It is no good to actively start to change my occupation now

In the present situation it is useless to implement career plans

I only make plans when I know what is going to happen in the future