Intelligenz und Subjektives Wohlbefinden

Analysen bedeutsamer Korrelate anhand metaanalytischer Verfahren und Paneldaten

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Abkürzungsverzeichnis

AWB	Affektives Wohlbefinden (affective well-being)
BIP	Bruttoinlandsprodukt
c^2	Durch geteilte Umwelt erklärte Merkmalsvarianz
CWB	Kognitives Wohlbefinden (cognitive well-being)
g	Allgemeine kognitive Fähigkeit (*g*-Faktor)
h^2	Durch genetische Unterschiede erklärte Merkmalsvarianz
MSEM	Multilevel structural equation model
SOEP	Sozio-oekonomisches Panel
SWB	Subjektives Wohlbefinden (subjective well-being)

Überblick über die relevanten Studien

Diese Dissertation umfasst insgesamt drei Studien. Die Studien I und II wurden in international anerkannten wissenschaftlichen Zeitschriften (mit Peer-Review) veröffentlicht, Studie III wurde zur Veröffentlichung eingereicht und befindet sich derzeit im Begutachtungsprozess.

Die vollständigen Schriften zu den Studien I und II können in ihrer veröffentlichten Form bei den jeweiligen Fachzeitschriften eingesehen werden.

Studie I **Roth, B.***, Becker, N.*, Romeyke, S., Schäfer, S., Domnick, F., & Spinath, F. M. (2015). Intelligence and school grades: A meta-analysis. *Intelligence, 53*, 118–137. doi: 10.1016/j.intell.2015.09.002 (*joint first authorship)

Studie II **Roth, B.**, Hahn, E., & Spinath, F. M. (2017). Income inequality, life satisfaction, and economic worries. *Social Psychological and Personality Science, 8*(2), 133-141. doi: 10.1177/1948550616664955

Studie III **Roth, B.**, Spinath, F. M., & Becker, N. (2021). *Income inequality and the relation of income and subjective well-being: A meta-analysis*. Manuscript submitted for publication.

1 Einleitung

Die vorliegende Dissertation umfasst Arbeiten zu zwei innerhalb der Differentiellen Psychologie bedeutsamen Konstrukten – Intelligenz und Subjektives Wohlbefinden (SWB) – und untersucht eine Auswahl ihrer zentralen Korrelate. Beiden Konstrukten wird jeweils ein eigenes Kapitel gewidmet. In Kapitel 2 wird zunächst das Konstrukt der Intelligenz näher beleuchtet und daran anschließend eine Metaanalyse zum Zusammenhang zwischen Intelligenz und Schulnoten vorgestellt (Studie I; Roth, Becker, Romeyke, Schäfer, Domnick, & Spinath, 2015). In Kapitel 3 wird das Konstrukt SWB beschrieben, eine Studie basierend auf Paneldaten zur Bedeutung von Einkommensungleichheit für die Lebenszufriedenheit erläutert (Studie II; Roth, Hahn, & Spinath, 2017), sowie eine Metaanalyse zum Zusammenhang zwischen Einkommen und SWB unter besonderer Berücksichtigung der Einkommensungleichheit vorgestellt (Studie III; Roth, Spinath, & Becker, 2021). Kapitel 4 schließlich fasst die Implikationen der durchgeführten Studien zu beiden Forschungsfeldern zusammen.

2 Intelligenz

2.1 Allgemeine Einordnung

Intelligenz ist ein zentrales und seit nun über 100 Jahren eingehend untersuchtes Konstrukt in der Psychologie. Während dieser Zeit bildeten sich unterschiedliche Definitionen des Konstruktes heraus. Ein breiter Konsens besteht nach Gottfredson (1997a, p. 13) darin, dass Intelligenz eine allgemeine kognitive Fähigkeit darstellt, die Aspekte wie beispielsweise schlussfolgerndes Denken, Planungsfähigkeit, Problemlösefähigkeit, Abstraktionsvermögen, schnelle Auffassungsgabe oder das Verständnis komplexer Zusammenhänge umfasst. Ähnlich beschreiben Neisser et al. (1996, p. 77) Intelligenz als die Fähigkeit des Menschen, komplexe Ideen zu verstehen, sich an seine Umgebung anzupassen, Schlussfolgerungen ziehen oder aus Erfahrungen lernen zu können. Die allgemeine kognitive Fähigkeit wird auch als Generalfaktor der Intelligenz oder *g* (Spearman, 1927) bezeichnet und bildet die Grundlage aller kognitiven Leistungen. Dabei ist *g* einer Reihe von spezifischeren mentalen Fähigkeiten übergeordnet (Gustafsson & Undheim, 1996): Es wird eine hierarchische Struktur angenommen, bei der die allgemeine kognitive Fähigkeit *g* auf einem oberen Level, breiter angelegte Gruppenfaktoren auf einem mittleren Level und spezifische Faktoren auf einem unteren Level angeordnet sind (Deary, 2012), und es gibt Hinweise darauf, dass auch bei der Verwendung unterschiedlicher Verfahren zur Erfassung der allgemeinen kognitiven Fähigkeit konsistent ein gemeinsamer *g*-Faktor erhoben wird (Johnson, Bouchard Jr, Krueger, McGue, & Gottesman, 2004).

Zahlreiche Studien belegen die Erblichkeit kognitiver Fähigkeiten (h^2). Diese liegt bei durchschnittlich 50%, womit etwa die Hälfte der Varianz in der Intelligenz auf genetische Unterschiede zwischen Individuen zurückgeht. Doch der Einfluss der Gene verändert sich über die Lebensspanne: Während er im frühen Kleinkindalter etwa 20% beträgt, nimmt er über das Kindesalter mit etwa 40% bis hin zum Erwachsenenalter mit 60% deutlich zu (Plomin & Spinath, 2002). Der Anteil der geteilten Umwelt an der Merkmalsvarianz (c^2) verringert sich hingegen im Laufe des Lebens (McGue, Bouchard, Iacono, & Lykken, 1993). Die hohe Erblichkeit kognitiver Fähigkeiten ist jedoch nicht gleichzusetzen mit ihrer Unveränderlichkeit. Intelligenz entwickelt und stabilisiert sich im Laufe der Kindheit, in der beispielsweise die Fähigkeit zum abstrakten Denken und zur Informationsverarbeitung sowie das Allgemeinwissen ausgebildet werden (Gottfredson, 1997a). Daraufhin zeigen sich unterschiedliche Verläufe für Fähigkeiten im Bereich der fluiden und der kristallinen Intelligenz. Bei der fluiden Intelligenz (z.B. schlussfolgerndes Denken, Wahrnehmungsgeschwindigkeit) sind aufgrund der abnehmenden Informationsverarbeitungsgeschwindigkeit etwa ab dem dritten Lebensjahrzehnt Leistungsrückgänge zu erkennen. Für die kristalline Intelligenz (z.B. verbale und numerische Fähigkeiten) hingegen lassen sich auch im mittleren Erwachsenenalter Leistungszuwächse nachweisen, da diese Fähigkeiten auf

dem über die Lebensspanne erworbenen Wissen beruhen, welches im Laufe des Erwachsenenalters weiter zunimmt. Abbauprozesse zeigen sich hier erst im hohen Lebensalter, und dies nicht zwingend für alle Individuen (Holling, Preckel, & Vock, 2004; Schaie, 1996). Trotz solcher intraindividueller Leistungsveränderungen über die Lebensspanne besteht eine äußerst hohe Stabilität kognitiver Fähigkeiten, die sich bereits ab der Kindheit zeigt und bis ins hohe Lebensalter fortbesteht (Deary, Whiteman, Starr, Whalley, & Fox, 2004; Gow et al., 2011; Moffitt, Caspi, Harkness, & Silva, 1993).

Die allgemeine kognitive Fähigkeit weist Zusammenhänge mit einer Vielzahl von Aspekten aus unterschiedlichen Lebensbereichen auf (Neisser et al., 1996). Insbesondere zwischen kognitiven Fähigkeiten und Schulerfolg besteht ein substantieller Zusammenhang von etwa $r = .50$ (Brody, 1992; Gottfredson, 1997b; Gustafsson & Undheim, 1996; Neisser et al., 1996), welcher als einer der stärksten Zusammenhänge innerhalb der psychologischen Diagnostik gelten kann (Holling et al., 2004). Darüber hinaus weist Intelligenz bedeutende prädiktive Validität für den Berufserfolg auf (Schmidt & Hunter, 1998) und korreliert auch mit beruflichen Interessen (Pässler, Beinicke, & Hell, 2015). Ein bedeutsamer Zusammenhang besteht auch zwischen Intelligenz und Lebenserwartung (Gottfredson & Deary, 2004). Negative Zusammenhänge schließlich lassen sich beispielweise zu Religiosität (Zuckerman, Silberman, & Hall, 2013), delinquentem Verhalten (Lynam, Moffitt, & Stouthamer-Loeber, 1993) oder Mortalität (Calvin et al., 2010; O'Toole & Stankov, 1992) nachweisen.

Die besondere Bedeutung kognitiver Fähigkeiten für den schulischen Erfolg wird in Studie I (Roth et al., 2015) aufgegriffen und hierbei insbesondere der Zusammenhang zwischen kognitiven Fähigkeiten und Schulnoten untersucht. Dazu wird die vorliegende Literatur metaanalytisch zusammengefasst und die Bedeutung potentieller Moderatorvariablen untersucht.

2.2 Bedeutung kognitiver Fähigkeiten für Schulnoten

Hinführung

Intelligenz ist der bedeutendste Prädiktor schulischer Leistungen. Der mittlere Zusammenhang zwischen beiden Variablen wird in der Literatur mit $r = .5$ angegeben (Gottfredson, 2002; Gustafsson & Undheim, 1996; Neisser et al., 1996; Sternberg, Grigorenko, & Bundy, 2001). Es liegen verschiedene metaanalytische Studien vor, welche die Bedeutung der Intelligenz insbesondere hinsichtlich der mit schulischen Leistungstests erfassten Fähigkeiten und Kenntnisse in naturwissenschaftlichen Unterrichtsfächern untersuchen (Boulanger, 1981; Fleming & Malone, 1983; Steinkamp & Maehr, 1983). Diese deuten darauf hin, dass die Stärke des Zusammenhangs zwischen Intelligenz und Schulleistung abhängig von der Reliabilität der verwendeten Intelligenz- und Schulleistungstests (Boulanger, 1981)

sowie der Klassenstufe (Fleming & Malone, 1983) ist. Die vorliegenden Metaanalysen beziehen allerdings lediglich Publikationen vor dem Jahr 1983 sowie aus spezifischen Ländern mit ein und fokussieren mit der Ausrichtung auf naturwissenschaftliche Fächer auf einen sehr eingeschränkten Bereich schulischer Leistungen.

Darüber hinaus wurde die prädiktive Validität kognitiver Fähigkeiten für Schulnoten im engeren Sinne in metaanalytischen Arbeiten bislang nicht näher beleuchtet, obwohl gerade diese für die weitere akademische Laufbahn, die berufliche Qualifikation, und somit für den gesamten Lebenslauf eines Individuums von zentraler Bedeutung sind (Sauer, 2006; Tent, 2006).

Ziel der Studie

Ziel von Studie I (Roth et al., 2015) war daher die metaanalytische Integration der umfassenden Literatur zum Zusammenhang zwischen kognitiven Fähigkeiten und Schulnoten. Hierbei sollte keine Einschränkung hinsichtlich spezifischer Schulfächer, Klassenstufen, Länder oder Erhebungsjahre vorgenommen und unterschiedliche potenzielle Moderatorvariablen untersucht werden.

Methodik

Zur Durchführung der Metaanalyse wurde das Verfahren nach Hunter und Schmidt (2004) verwendet, welches die Korrektur verschiedener Artefakte neben dem Stichprobenfehler (Unreliabilität der eingesetzten Intelligenztests, indirekte Varianzeinschränkung) erlaubte. Dabei wurde zunächst eine stichprobengewichtete mittlere Korrelation („bare-bones“-Analyse) ermittelt, anschließend wurden die weiteren Artefakte korrigiert und die mittlere Populationskorrelation geschätzt. Zur Korrektur wurde die Methode der Artefaktverteilung verwendet, da nicht für jede der eingeschlossenen Primärstudien Informationen zur Reliabilität des verwendeten Intelligenztests sowie zur Varianzeinschränkung vorlagen.

Schmidt und Hunter (1977) weisen darauf hin, dass bei einer Varianzreduktion in den beobachteten Stichprobenkoeffizienten durch die Korrektur von Artefakten von 75% oder mehr, auch die verbleibende Varianz dem Einfluss weiterer, nicht korrigierter Artefakte zugeschrieben werden kann. Entsprechend ist eine Untersuchung potenzieller Moderatorvariablen dann angezeigt, wenn weniger als 75% der Varianz der Stichprobenkoeffizienten auf den Einfluss von Artefakten zurückgeführt werden können.

Als mögliche Moderatorvariablen des Zusammenhangs zwischen Intelligenz und Schulnoten wurden die Art der verwendeten Intelligenztests (verbal vs. nonverbal vs. gemischt), Schulfächergruppen (Mathematik und Naturwissenschaften vs. Sprachen vs. Sozialwissenschaften vs. Künstlerische und musische Fächer vs. Sport), Klassenstufen (Primarstufe vs. Mittelstufe vs. Oberstufe), Geschlecht (männlich vs. weiblich) sowie das Publikationsjahr (vor 1983 vs. nach 1983) untersucht. Für alle Moderatorvariablen wurde für jede zugehörige Subgruppe eine getrennte Analyse durchgeführt und die Höhe der mittleren korrigierten Populationskorrelationen der Moderatorsubgruppen unter Zuhilfenahme der 95% Konfidenzintervalle verglichen. Ein deutlicher Unterschied in den mittleren korrigierten Populationskorrelationen sowie das Nichtüberschneiden der Konfidenzintervalle wurde als Vorliegen eines Moderatoreffektes interpretiert (Hunter & Schmidt, 2002; Schmidt & Hunter, 1999; Whitener, 1990).

Ergebnisse

In einer umfassenden Literaturrecherche konnten 162 Primärstudien identifiziert werden, die Angaben zu $k = 240$ unabhängigen Stichproben lieferten. Die Studien wurden zwischen 1922 und 2014 publiziert und stammten aus 33 Ländern. Die Gesamtstichprobengröße betrug $N = 105{,}185$ Probanden.

Die Hauptuntersuchung ergab eine stichprobengewichtete mittlere Korrelation zwischen *g* und Schulnoten von $r = .44$ (siehe Tabelle 1). Nach der Korrektur von Prädiktorreliabilität und Varianzeinschränkung betrug die mittlere Populationskorrelation $\rho = .54$ (95% CI [.51, .57]). Die Korrektur der Artefakte reduzierte die Varianz der Stichprobenkoeffizienten um 31.7%, womit die Untersuchung potentieller Moderatorvariablen angebracht war (Hunter & Schmidt, 2004).

Für die Art des verwendeten Intelligenztests zeigte sich ein teilweiser Moderatoreffekt. Zwar wiesen Verfahren, die sowohl verbale als auch nonverbale Anteile (d.h. gemischte Verfahren) enthielten ($\rho = .60$, 95% CI [.56, .64]), den höchsten Zusammenhang mit Schulnoten auf. Jedoch unterschied sich die Stärke des Zusammenhangs nicht signifikant von derjenigen für vollständig verbale Verfahren ($\rho = .53$, 95% CI [.48, .58]). Ausschließlich nonverbale Verfahren ($\rho = .44$, 95% CI [.40, .47]) konnten Schulnoten ebenfalls sehr gut vorhersagen, obgleich der Zusammenhang mit Schulnoten für diese deutlich schwächer ausfiel als für gemischte und verbale Verfahren.

Während sich hinsichtlich der Schulfächergruppen zwischen Mathematik und Naturwissenschaften ($\rho = .49$, 95% CI [.47, .52]), Sprachen ($\rho = .44$, 95% CI [.41, .47]) und Sozialwissenschaften ($\rho = .43$, 95% CI [.39, .48]) kein erheblicher Unterschied im Zusammenhang zwischen *g* und Schulnoten abbil-

dete, lag dieser für künstlerische und musische Fächer (ρ = .31, 95% CI [.19, .43]) deutlich unterhalb derjenigen für Mathematik und Naturwissenschaften. Die Bedeutung von Intelligenz für Schulnoten in der Fächergruppe Sport (ρ = .09, 95% CI [.05, .14]) war eindeutig geringer ausgeprägt als für alle anderen Fächergruppen.

Es zeigte sich ein eindeutig stärkerer Zusammenhang zwischen kognitiven Fähigkeiten und Schulnoten für die Klassenstufen innerhalb der Oberstufe (ρ = .58, 95% CI [.51, .64]) und Mittelstufe (ρ = .54, 95% CI [.49, .59]) gegenüber denjenigen innerhalb der Primarstufe (ρ = .45, 95% CI [.42, .48]).

Geschlechtsunterschiede in der Bedeutung kognitiver Fähigkeiten für Schulnoten konnten nicht nachgewiesen werden (männliche Stichproben: ρ = .58, 95% CI [.53, .64]; weiblichen Stichproben: ρ = .58, 95% CI [.53, .63]).

Hinsichtlich des Publikationsjahrs der inkludierten Studien zeigte sich hingegen ein eindeutiger Moderatoreffekt, wobei der Zusammenhang zwischen *g* und Schulnoten in den Jahren vor Veröffentlichung der früheren Metaanalysen deutlich höher lag als in den Jahren danach (vor 1983: ρ = .68, 95% CI [.63, .73]; nach 1983: ρ = .47, 95% CI [.45, .50]).

Gemäß der Berechnung des fail-safe *N* müssten weitere 2,358 Nulleffektstudien in die Metaanalyse einbezogen werden, damit sich der geschätzte mittlere Zusammenhang zwischen Intelligenz und Schulnoten auf ein nicht-signifikantes Niveau reduzieren würde. Da jedoch die Zahl der ermittelten fail-safe *N*s sowohl für die Haupt-, als auch für die Moderatoranalysen die Anzahl der inkludierten Stichprobenkoeffizienten deutlich überstieg, kann von der Robustheit der gefundenen Effekte gegenüber einem Publikationsbias ausgegangen werden. Darüber hinaus deutete der Funnel Plot auf ein systematisches Fehlen hoher Effektstärken hin, was ebenfalls nicht auf einen typischen Publikationsbias hinwies. Unter Berücksichtigung einer entsprechenden Korrektur würde sich für die stichprobengewichtete mittlere Korrelation eine Höhe von *r* = .49 ergeben, für die vollständig korrigierte Metaanalyse ein mittlerer Populationseffekt von ρ = .61.

Sensitivitätsanalysen zur Robustheit der metaanalytischen Befunde gegenüber Ausreißern hinsichtlich extremer Stichprobengrößen, Korrelationskoeffizienten sowie den in die Artefaktverteilungen eingegangenen Werten zur Prädiktorreliabilität und Varianzeinschränkung deuteten auf die Robustheit der Befunde gegenüber entsprechenden Verzerrungseffekten hin. Aufgrund anfänglicher Hinweise auf Verzerrungseffekte durch extreme Stichprobengrößen wurden die betreffenden Stichproben bereits im Vorfeld der oben beschriebenen Haupt- und Moderatoranalysen aus dem Datensatz ausgeschlossen.

Tabelle 1: Ergebnisse der Haupt- und Moderatoranalysen zum Zusammenhang zwischen Intelligenz und Schulnoten

	k[a]	N[b]	Artefaktverteilung				Metaanalyse mit Korrektur des Stichprobenfehlers (bare-bones-Analyse)			Metaanalyse mit vollständiger Artefaktkorrektur						
			Mittelwert r_{xx}[c]	SD_{rxx}	Mittelwert u[d]	SD_u	Mittelwert r	VAR$_r$	SD_r	ρ	σ_ρ^2	σ_ρ	95% CI UG[e]	95% CI OB[f]	Varianzreduzierung (%)[g]	N_{FS}[h]
Hauptanalyse	240	105,185	0.86	0.08	0.85	0.21	0.44	0.03	0.18	0.54	0.03	0.17	0.51	0.57	31.7	2,358
Moderatoranalyse: Art des Intelligenztests																
Gesamt[i]	197	114,114	0.84	0.08	0.88	0.27	0.41	0.02	0.15	0.50	0.01	0.09	0.48	0.53	71.8	1,787
Verbal	59	45,672	0.83	0.09	0.86	0.35	0.42	0.03	0.16	0.53	0.01	0.09	0.48	0.58	74.7	561
Nonverbal	89	49,538	0.84	0.07	0.94	0.28	0.37	0.02	0.13	0.44	0.01	0.07	0.40	0.47	74.2	686
Gemischt	49	18,904	0.87	0.07	0.81	0.18	0.47	0.01	0.12	0.60	0.01	0.08	0.56	0.64	64.9	537
Moderatoranalyse: Schulfächergruppen																
Gesamt[i]	262	143,052	0.86	0.09	0.88	0.21	0.37	0.02	0.14	0.45	0.01	0.11	0.43	0.47	49.2	2,105
Mathematik und Naturwissenschaften	100	60,533	0.86	0.09	0.90	0.21	0.42	0.01	0.11	0.49	0.00	0.06	0.47	0.52	73.4	887
Sprachen	96	61,865	0.85	0.10	0.90	0.21	0.36	0.01	0.12	0.44	0.01	0.09	0.41	0.47	60.5	748
Sozialwissenschaften	41	12,649	0.90	0.04	0.84	0.19	0.35	0.02	0.12	0.43	0.01	0.19	0.39	0.48	53.7	314
Künstlerische und musische Fächer	14	2,269	0.83	0.09	0.73	0.15	0.21	0.02	0.15	0.31	0.03	0.17	0.19	0.43	34.9	73
Sport	11	5,736	0.88	0.04	0.90	0.24	0.08	0.01	0.07	0.09	0.00	0.06	0.05	0.14	53.3	10
Moderatoranalyse: Klassenstufe																
Gesamt[i]	217	83,782	0.86	0.08	0.86	0.21	0.45	0.03	0.18	0.54	0.03	0.16	0.51	0.57	32.1	2,120
Primarstufe	71	18,584	0.86	0.11	0.96	0.12	0.40	0.01	0.12	0.45	0.01	0.10	0.42	0.48	39.8	568
Mittelstufe	75	49,771	0.86	0.07	0.90	0.20	0.46	0.04	0.19	0.54	0.03	0.18	0.49	0.59	22.5	729
Oberstufe	71	15,427	0.86	0.07	1.05	0.12	0.46	0.05	0.21	0.58	0.04	0.20	0.51	0.64	29.4	747
Moderatoranalyse: Geschlecht																
Gesamt[i]	68	15,273	0.88	0.08	0.83	0.21	0.46	0.02	0.13	0.58	0.01	0.07	0.54	0.62	73.0	722
Männlich	37	7,780	0.84	0.10	0.83	0.14	0.46	0.02	0.13	0.58	0.01	0.10	0.53	0.64	48.3	395
Weiblich	31	7,493	0.86	0.06	0.84	0.27	0.46	0.01	0.12	0.58	0.00	0.03	0.53	0.63	95.8	327

Tabelle 1 (Fortsetzung)

	k[a]	N[b]	Artefaktverteilung				Metaanalyse mit Korrektur des Stichprobenfehlers (bare-bones-Analyse)			Metaanalyse mit vollständiger Artefaktkorrektur						
			Mittelwert r_{xx}[c]	SD_{rxx}	Mittelwert u[d]	SD_u	Mittelwert r	VAR$_r$	SD_r	ρ	σ_ρ^2	σ_ρ	95% CI UG[e]	95% CI OB[f]	Varianzreduzierung (%)[g]	N_{FS}[h]
Moderatoranalyse: Publikationsjahr[i]																
Gesamt[i]	240	105,185	0.86	0.08	0.85	0.21	0.44	0.03	0.18	0.54	0.03	0.17	0.51	0.57	31.6	2,358
Vor 1983	100	35,046	0.86	0.09	0.80	0.12	0.56	0.04	0.20	0.68	0.03	0.19	0.63	0.73	15.1	1,260
Nach 1983	140	70,139	0.86	0.07	0.86	0.23	0.38	0.02	0.15	0.47	0.01	0.12	0.45	0.50	50.9	1,188

Anmerkungen: Angegeben sind die Ergebnisse aus Hauptanalyse und sämtlichen Moderatoranalysen. [a]Anzahl der in die Analyse eingegangenen Stichprobenkoeffizienten. [b]Gesamtstichprobengröße. [c]Mittlere Reliabilität des Prädiktors, berechnet als arithmetisches Mittel. [d]Mittlere Varianzeinschränkung. [e]Untere Grenze des 95% Konfidenzintervalls (CI). [f]Obere Grenze des 95% Konfidenzintervalls (CI). [g]Prozentualer Anteil der Varianz in den beobachteten Stichprobenkoeffizienten, der auf Artefakte zurückgeführt werden kann. [h]Fail-safe *N*. [i]Angegeben sind die Ergebnisse für die Gesamtzahl der in eine Moderatoranalyse eingegangenen Stichprobenkoeffizienten sowie für jede Moderatorsubgruppe, da die Anzahl der Stichprobenkoeffizienten aus Studien mit ausreichenden Angaben für eine Moderatoranalyse variierte.

Diskussion

Studie I erbrachte eine mittlere korrigierte Korrelation zwischen Intelligenz und Schulnoten von $\rho = .54$ und spiegelt damit den in verschiedenen narrativen Reviews vielfach genannten mittleren Zusammenhang zwischen beiden Variablen um $r = .5$ wieder (Gottfredson, 2002; Gustafsson & Undheim, 1996; Neisser et al., 1996; Sternberg et al., 2001).

Alle drei untersuchten Arten von Intelligenztests (verbal, nonverbal, gemischt) wiesen eine bedeutsame Validität bei der Vorhersage von Schulnoten auf. Verbale Intelligenztests und solche, die sowohl verbale als auch nonverbale Anteile enthielten, zeigten jedoch einen höheren Zusammenhang mit Schulnoten als ausschließlich nonverbale Verfahren. Dies kann darauf zurückgeführt werden, dass insbesondere verbale Fähigkeiten eine zentrale Rolle für die erfolgreiche Teilnahme am Unterricht als auch für die Erbringung schriftlicher Leistungen spielen und damit die Grundlage schulischer Noten bilden. Obgleich eine Überschneidung zwischen den 95% Konfidenzintervallen für verbale ($.48 \leq \rho \leq .58$) und gemischte Intelligenztests ($.56 \leq \rho \leq .64$) bestand, kann diese als sehr gering eingestuft werden. Somit kann vorsichtig von einer höheren Vorhersagekraft von Intelligenztests mit verbalen und nonverbalen Anteilen bei der Vorhersage von Schulnoten ausgegangen werden. Dies wird auch durch die vorhandene Literatur gestützt, da gemischte Verfahren Intelligenz im Sinne von *g* besser abbilden als ausschließlich verbale oder nonverbale Verfahren (Jensen, 1998), und *g* ein bedeutsamer Prädiktor schulischer Leistung ist (Gottfredson, 2002; Gustafsson & Undheim, 1996; Jensen, 1998; Neisser et al., 1996; Sternberg et al., 2001).

Die Untersuchung verschiedener Schulfächergruppen zeigte, dass der mittlere korrigierte Zusammenhang zwischen kognitiven Fähigkeiten und Schulnoten in der Gruppe Mathematik und Naturwissenschaften am stärksten ausgeprägt war. Zwar bestanden auch hier Überschneidungen zwischen den 95% Konfidenzintervallen mathematisch-naturwissenschaftlicher Fächer ($.47 \leq \rho \leq .52$) und sprachlicher ($.41 \leq \rho \leq .47$) sowie sozialwissenschaftlicher Fächer ($.39 \leq \rho \leq .48$), doch auch diese können als gering angesehen und ein Moderatoreffekt angenommen werden. Zurückführen lässt sich dieser Befund zum einen darauf, dass Lernerfolg in Fächern wie Mathematik und Naturwissenschaften insbesondere logisches Denken voraussetzt – eine Fähigkeit, die auch von den meisten Intelligenztests erfasst wird. Zum anderen kann durch die hohe Objektivität und Eindeutigkeit bei der Bewertung der in diesen Fächern erbrachten Leistungen von einer hohen Reliabilität der vergebenen Schulnoten ausgegangen werden, was sich wiederum in einer hohen Korrelation mit Intelligenz niederschlägt. Die etwas niedrigeren mittleren Zusammenhänge zwischen *g* und Schulnoten in sprachlichen und sozialwissenschaftlichen Fächern lassen sich hingegen dadurch erklären, dass die hier vermittelten Inhalte nicht durch reines Verstehen aufgenommen werden können, sondern zumeist auswendig gelernt werden müssen. Hierbei spielen nicht nur kognitive Fähigkeiten, sondern auch insbe-

sondere motivationale Aspekte eine zentrale Rolle. Darüber hinaus bestehen bei der Bewertung von Leistungskontrollen in diesen Fächern größere Spielräume für die Lehrenden, die zu einer geringeren Reliabilität der vergebenen Noten und damit auch zu einer geringeren Korrelation kognitiver Fähigkeiten mit den Schulnoten führen. Für die Gruppe der künstlerischen und musischen Fächer ($.19 \leq \rho \leq .43$) zeigte sich zwar eine leichte Überscheidung mit dem 95% Konfidenzintervall sprachlicher Fächer, jedoch kann aufgrund des sehr breiten Konfidenzintervalls für künstlerische und musische Fächer von einem substantiellen Unterschied zwischen beiden Gruppen ausgegangen werden. Da bei der Benotung der Leistungen in künstlerischen und musischen Fächern meist ein erheblicher Spielraum besteht und es keine eindeutige Bewertung im Sinne „richtiger" oder „falscher" Antworten gibt, kann die Reliabilität der Schulnoten in diesen Fächern als am geringsten angesehen werden, was sich in der schwachen Korrelation mit *g* wiederspiegelt. Dennoch zeigte sich in Einklang mit der vorliegenden Literatur zum Zusammenhang von Intelligenz mit Musikalität und Kreativität (z.B. Batey & Furnham, 2006; Schellenberg, 2005) auch für diese Fächergruppe ein substantieller Zusammenhang zwischen Intelligenztestergebnissen und schulischer Leistung. Die signifikant geringere mittlere Korrelation in der Fächergruppe Sport ($.05 \leq \rho \leq .14$) deutet darauf hin, dass Schulnoten hier weniger kognitive, sondern vielmehr körperliche Leistungsfähigkeit abbilden.

Entgegen der Annahme einer geringeren Validität kognitiver Fähigkeiten für Schulnoten in höheren Klassenstufen aufgrund einer zunehmenden Varianzeinschränkung (Brody, 1992; Jensen, 1998) zeigte sich in der hier beschriebenen Studie eine signifikant höhere Validität in den mittleren und höheren Klassenstufen verglichen mit den unteren (Primarstufe: $.42 \leq \rho \leq .48$; Mittelstufe: $.49 \leq \rho \leq .59$; Oberstufe: $.51 \leq \rho \leq .64$). Es kann daher angenommen werden, dass in den unteren Klassenstufen fehlende kognitive Fähigkeiten zur Erbringung schulischer Leistungen beispielweise durch Übung kompensiert werden können, während dies in höheren Klassenstufen aufgrund der zunehmenden Komplexität und Schwierigkeit der Lerninhalte nur eingeschränkt möglich ist. Dieser Effekt scheint den Einfluss einer zunehmenden Varianzeinschränkung in höheren Klassenstufen zu überlagern.

Der deutlich höhere mittlere korrigierte Zusammenhang zwischen *g* und Schulnoten vor 1983 ($.63 \leq \rho \leq .73$) verglichen mit den darauffolgenden Jahren ($.45 \leq \rho \leq .50$) lässt sich darauf zurückführen, dass in vielen Ländern (wie auch in Deutschland und den USA, die im Datensatz der Metaanalyse stark vertreten sind) eine Noteninflation stattgefunden hat, bei der identische Leistungen über die Zeit immer besser bewertet wurden. Da Schulnoten jedoch nach oben hin gedeckelt sind, entsteht hierdurch eine zunehmende Varianzeinschränkung, was zu einer Verminderung der Korrelation mit kognitiven Fähigkeiten führt.

Hinsichtlich des Geschlechts schließlich wurden keine signifikanten Unterschiede in der korrigierten mittleren Validität gefunden (weibliche Stichproben: $.53 \leq \rho \leq .63$; männliche Stichproben:

.53 ≤ ρ ≤ .64). Während jedoch bei den weiblichen Stichproben die Varianz in den beobachteten Stichprobenkoeffizienten durch die Artefaktkorrektur fast vollständig aufgeklärt werden konnte, bestand bei den männlichen Stichproben nach Korrektur der Artefakte weiterhin noch ein erheblicher Anteil an Heterogenität. Es ist daher anzunehmen, dass insbesondere innerhalb der männlichen Stichproben weitere, nicht-kognitive Determinanten der schulischen Leistungen (wie bspw. intrinsische Motivation oder Schulangst; Freudenthaler, Spinath, & Neubauer, 2008) zum Tragen kamen.

Zusammenfassung

Die beschriebene Metaanalyse zeigt eindeutig die substantielle Bedeutung kognitiver Fähigkeiten für Schulnoten auf. Darüber hinaus wird der Einfluss verschiedener moderierender Drittvariablen nachgewiesen: So erzielen Intelligenztests, die sowohl verbale als auch nonverbale Anteile beinhalten, die höchste Vorhersagekraft für Schulnoten. Darüber hinaus nimmt die Rolle kognitiver Fähigkeiten im Laufe der Klassenstufen zu. Auch hinsichtlich unterschiedlicher Schulfächergruppen unterscheidet sich die Bedeutung kognitiver Fähigkeiten für die dort erzielten Schulnoten, und ist insbesondere in Fächern, in denen der Erwerb der Lerninhalte logisches Denken voraussetzt, von größter Bedeutung. Es zeigt sich ein stärkerer Zusammenhang zwischen *g* und Schulnoten vor dem Jahr 1983 verglichen mit den Folgejahren, in denen jedoch weiterhin ein substantieller Zusammenhang zwischen beiden Variablen besteht. Ein Unterschied zwischen beiden Geschlechtern hinsichtlich der Validität kognitiver Fähigkeiten für Schulnoten kann nicht nachgewiesen werden.

3 Subjektives Wohlbefinden

3.1 Allgemeine Einordnung

Subjektives Wohlbefinden beschreibt, wie Menschen sich fühlen und ihr Leben beurteilen (Diener, 1984). Es ist als breit gefasstes, übergeordnetes Konstrukt zu verstehen, das zwei distinkte Komponenten umfasst: Während kognitives Wohlbefinden (cognitive well-being, CWB) sich auf kognitive Evaluationen der allgemeinen Lebenszufriedenheit von Menschen oder ihrer Zufriedenheit in einzelnen Lebensbereichen (wie beispielsweise Arbeit, Familie) bezieht, schließt affektives Wohlbefinden (affective well-being, AWB) das Vorhandensein positiver Emotionen (wie Freude, Stolz) und das Nichtvorhandensein negativer Emotionen (wie Traurigkeit, Angst, Zorn) ein (Diener, 2013; Diener & Emmons, 1984; Diener, Suh, Lucas, & Smith, 1999; Lucas, Diener, & Suh, 1996).

Das SWB eines Menschen wird durch unterschiedliche Faktoren bedingt. Befunde zahlreicher Studien weisen darauf hin, dass es durch die Erfüllung von Bedürfnissen (vgl. Maslow, 1970), individuellen Wünschen und Zielen beeinflusst wird, wobei insbesondere das Ausmaß der Abweichung vorhandener Bedürfnisse, Wüsche und Ziele von deren Erfüllung ausschlaggebend für das individuelle SWB ist (Diener, Lucas, & Oishi, 2018). Darüber hinaus zeigt die Literatur zu SWB, dass dieses ebenso wie auch die zugehörigen Komponenten, zu einem gewissen Maße genetisch bedingt und relativ stabil über die Zeit ist (Lykken & Tellegen, 1996; Nes, Røysamb, Tambs, Harris, & Reichborn-Kjennerud, 2006). Insbesondere die Persönlichkeitseigenschaften Neurotizismus und Extraversion weisen bedeutsame Korrelationen mit SWB auf, wobei die prädiktive Vorhersagekraft beider Faktoren sich zwischen den SWB-Komponenten unterscheidet (Lucas, 2008; Schimmack, Schupp, & Wagner, 2008; Steel, Schmidt, & Shultz, 2008). Hinsichtlich der Adaptation an bedeutende Lebensereignisse ging die Forschung lange Zeit davon aus, dass aufgrund der Stabilität und Erblichkeit von SWB sowie seiner hohen Vorhersagbarkeit durch die genannten Persönlichkeitseigenschaften, Individuen nach einer signifikanten Veränderung ihres SWB aufgrund des Eintretens spezifischer Lebensereignisse immer wieder zu einer Art „set point“ oder Basislevel ihres individuellen SWB zurückkehren sollten (Headey & Wearing, 1992). Neuere Studien können jedoch zeigen, dass Individuen nach bestimmten Lebensereignissen, wie beispielsweise Erwerbslosigkeit, dem Verlust eines nahestehenden Menschen oder dem Einsetzen von Behinderungen, ihr ursprüngliches SWB-Level nicht zwangsläufig vollständig wieder erlangen, und dass Veränderungen in ihrem SWB von größerer Dauer sein können (Diener, Lucas, & Scollon, 2006; Fujita & Diener, 2005; Lucas, 2007; Luhmann, Hofmann, Eid, & Lucas, 2012). Die hier skizzierten Einflussfaktoren und Prozesse schließen sich jedoch nicht gegenseitig aus, sie können vielmehr zur gleichen Zeit und völlig unabhängig voneinander das SWB eines Menschen in ganz spezifischer und individueller Weise beeinflussen (Diener, Lucas, et al., 2018).

Es hat sich gezeigt, dass eine Reihe objektiver Faktoren sowie individueller Eigenschaften mit SWB korreliert sind. Soziale Beziehungen (wie beispielsweise die Anzahl von Freunden, das Ausmaß an sozialer Unterstützung, oder die Qualität interpersoneller Beziehungen) werden als am stärksten mit SWB korreliert beschrieben (Argyle, 1999; Lyubomirsky, King, & Diener, 2005). Darüber hinaus besteht auch ein Zusammenhang zwischen Religiosität (Hackney & Sanders, 2003; Witter, Stock, Okun, & Haring, 1985) oder dem individuellen Gesundheitszustand und SWB (Diener, Lucas, et al., 2018; Diener, Seligman, Choi, & Oishi, 2018). Hinsichtlich demografischer Faktoren spielen Geschlecht und Alter eine Rolle: Zwar unterscheiden sich Männer und Frauen grundsätzlich kaum in ihrem SWB, jedoch sind positive ebenso wie negative Emotionen bei Frauen stärker ausgeprägt (Diener et al., 1999). Obgleich lange Zeit angenommen wurde, dass sich die Lebenszufriedenheit über die Lebensspanne nicht bedeutsam verändert, deuten aktuellere Untersuchungen darauf hin, dass es in westlichen Ländern einen U-förmigen Verlauf der Lebenszufriedenheit gibt, mit einer höheren selbstberichteten Zufriedenheit im frühen Erwachsenenalter und einem Alter zwischen 60 und 70 Jahren, und der niedrigsten Lebenszufriedenheit etwa in den 40ern, während das SWB in vielen anderen Ländern mit steigendem Alter abnimmt (Blanchflower & Oswald, 2008; Steptoe, Deaton, & Stone, 2015).

In der Literatur dominiert insbesondere die Frage nach der Bedeutung von Einkommen für die individuelle Lebenszufriedenheit. Zwar liegt die Vermutung nahe, dass höheres Einkommen mit einer höheren Ausprägung des SWB einhergeht, da es beispielsweise eine bessere Ernährung und bessere Wohnverhältnisse, sowie einen besseren Zugang zu Gesundheitsversorgung und Bildungschancen ermöglicht (Ahuvia, 2008; Argyle, 1999; Helliwell, Layard, & Sachs, 2012). Dennoch findet sich in der Literatur lediglich ein geringer, aber signifikanter Zusammenhang zwischen Einkommen und SWB zwischen r = .04 und .29 (Arthaud-Day & Near, 2005), wobei die Bedeutung von Einkommen für die kognitive Beurteilung der Lebenszufriedenheit eine größere Rolle spielt als für das affektive Erleben (Diener, Kahneman, Tov, & Arora, 2010; Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004). Doch nicht nur absolutes Einkommen, das dessen direkten Nutzen für das SWB der Menschen abbildet, ist hier von Bedeutung. Auch relatives Einkommen, welches sich darauf bezieht, ob ein Individuum über mehr oder weniger Einkommen als andere verfügt, beeinflusst über sozialen Vergleich das SWB (F. Cheung & Lucas, 2016). Neben der Bedeutung des individuellen Einkommens für SWB werden in zahlreichen Studien auch der nationale Wohlstand und dessen Zusammenhang mit SWB untersucht. Easterlin (1974) postulierte, dass trotz des Zusammenhangs zwischen individuellem Einkommen und SWB, der sich in Querschnittsuntersuchungen relativ konsistent nachweisen lässt, eine deutliche Zunahme des Wohlstands eines Landes über die Zeit nicht mit einer signifikanten Verbesserung im SWB der gesamten Bevölkerung einherginge. Diese als „Easterlin Paradox“ bekannt gewordene These ist mittlerweile jedoch nicht mehr in einer solch absoluten Form haltbar, gibt es doch Hinweise darauf, dass reichere Länder durchaus auf Bevölkerungsebene ein höheres Maß an SWB verzeichnen,

und ökonomisches Wachstum mit einer Zunahme im SWB verbunden sein kann (vgl. Hagerty & Veenhoven, 2003; Sacks, Stevenson, & Wolfers, 2012). Dennoch stellt sich die Frage, inwiefern nicht der Wohlstand eines Landes selbst der relevante Faktor ist, sondern dessen Verteilung innerhalb der Bevölkerung. So zeigen unterschiedliche Studien, dass ein höheres Maß an Einkommensungleichheit innerhalb eines Landes nicht nur mit einer Verschlechterung des SWB der Bevölkerung und einer Zunahme von sozialem Vergleich zwischen den Menschen einhergeht, sondern auch dazu führt, dass höherer nationaler Wohlstand sich gerade nicht in einer Verbesserung des SWB der Bevölkerung abbildet (Alesina, Di Tella, & MacCulloch, 2004; F. Cheung & Lucas, 2016; Ferrer-i-Carbonell & Ramos, 2014; Oishi & Kesebir, 2015; Oishi, Kesebir, & Diener, 2011).

Hier setzt Studie II (Roth et al., 2017) an und beleuchtet die Bedeutung der in den vergangenen Jahren gestiegenen Einkommensungleichheit für die Lebenszufriedenheit in Deutschland. Neben dem konkreten Effekt der Einkommensungleichheit auf die Lebenszufriedenheit wird Statusangst als mediierende Variable untersucht, sowie der moderierende Effekt des individuellen Einkommens auf die gefundenen Zusammenhänge betrachtet. Studie III (Roth et al., 2021) ergänzt schließlich die aktuelle Forschung zum Zusammenhang zwischen Einkommen und SWB durch eine aktuelle metaanalytische Integration der umfangreichen einschlägigen Literatur, bei der insbesondere über den nationalen Wohlstand hinaus die Einkommensungleichheit als moderierende Variable untersucht wird. Daneben wird die Bedeutung der SWB-Komponenten sowie des Entwicklungsstands der einbezogenen Länder näher beleuchtet.

3.2 Einkommensungleichheit und subjektives Wohlbefinden

Hinführung

In zahlreichen Ländern konnte über die vergangenen Jahrzehnte hinweg ein Anstieg in der Einkommensungleichheit beobachtet werden. Dabei ergibt sich die Frage, inwiefern sich diese höhere Ungleichheit in der Verteilung der Einkommen innerhalb einer Gesellschaft auf das Wohlbefinden der dort lebenden Menschen auswirkt. Die vorliegende Studienlage liefert hierzu heterogene Befunde: Ferrer-i-Carbonell und Ramos (2014) finden einen generellen negativen Zusammenhang zwischen Einkommensungleichheit und Lebenszufriedenheit, welcher jedoch insbesondere für Menschen in westlichen Gesellschaften sehr deutlich ausgeprägt ist. Schwarze und Härpfer (2007) bestätigen diesen Effekt für die Bevölkerung in Deutschland. Doch während Helliwell (2003) keinen Effekt von gestiegener Einkommensungleichheit auf die individuelle Lebenszufriedenheit nachweisen kann, beschreiben Rözer und Kraaykamp (2013) sogar eine höhere Lebenszufriedenheit in Ländern mit höherer Ungleichheit.

Da die generelle Frage nach der Bedeutung ungleich verteilter Einkommen für die individuelle Lebenszufriedenheit somit nicht eindeutig beantwortet werden kann, lohnt ein Blick auf interindividuelle Unterschiede, aufgrund derer Menschen unterschiedlich auf veränderte Einkommensungleichheit reagieren. So weist Clark (2003) auf einen positiven Effekt von Einkommensungleichheit insbesondere für jene hin, die in der Vergangenheit eine signifikante Einkommenssteigerung erzielt haben. Graham und Felton (2006) berichten bei zunehmender Ungleichheit einen Anstieg in der Lebenszufriedenheit für Reiche und eine Verschlechterung der Lebenszufriedenheit für Ärmere in Lateinamerika. Auch Oishi et al. (2011) beschreiben insbesondere für ärmere US-Amerikaner einen negativen Effekt der Einkommensungleichheit auf die Lebenszufriedenheit. Dieser ist jedoch laut Alesina et al. (2004) in den USA stärker ausgeprägt für die Reichen, während Einkommensungleichheit in europäischen Ländern sowohl für Ärmere als auch für politisch links Orientierte von stärkerer Bedeutung zu sein scheint. Darüber hinaus zeigt sich bei zunehmender Ungleichheit auch eine Verringerung der Lebenszufriedenheit für Jüngere, Arbeiter und Menschen mit niedrigem Bildungsstand (Blanchflower & Oswald, 2003). Für Deutschland finden Schwarze und Härpfer (2007) einen negativen Effekt der Einkommensungleichheit vor Steuern für die gesamte Bevölkerung, während Einkommensungleichheit nach Steuern ausschließlich die Lebenszufriedenheit der Ärmeren verringert. Es zeigt sich also, dass sich Individuen beispielsweise aufgrund ihres Einkommens, Bildungsstands oder Alters darin unterscheiden, in welcher Form eine Veränderung in der Einkommensungleichheit ihre Lebenszufriedenheit beeinflusst.

Darüber hinaus spielen auch Faktoren wie wahrgenommene soziale Mobilität oder das Vertrauen in Institutionen eine Rolle dabei, wie Menschen auf höhere Ausmaße von Ungleichheit reagieren (Bjørnskov, Dreher, Fischer, Schnellenbach, & Gehring, 2013; Ferrer-i-Carbonell & Ramos, 2014; Senik, 2005). Wahrgenommene Gerechtigkeit, Misstrauen und Statusangst mediieren den Zusammenhang zwischen Einkommensungleichheit und Lebenszufriedenheit, wobei die beiden letztgenannten insbesondere in ärmeren Ländern zu Tragen kommen (Delhey & Dragolov, 2014; Oishi et al., 2011; Wilkinson & Pickett, 2010).

Ziel der Studie

Ziel von Studie II (Roth et al., 2017) war es, die Bedeutung der gestiegenen Einkommensungleichheit für die individuelle Lebenszufriedenheit in Deutschland zu untersuchen. Entgegen der Annahme von Delhey und Dragolov (2014), dass Statusangst den Zusammenhang zwischen beiden Variablen nur in ärmeren, nicht jedoch in wohlhabenderen Ländern mediiert, vermuteten wir, dass die Sorge um den eigenen Status in Folge von gestiegener Einkommensungleichheit und damit verbundener wirtschaft-

licher Unsicherheit auch die Lebenszufriedenheit in reicheren Ländern beeinflussen sollte. Darüber hinaus wurden moderierende Effekte interindividueller Unterschiede aufgrund des individuellen Einkommenslevels untersucht.

Methodik

Es wurden Daten aus dem Sozio-oekonomischen Panel (SOEP; Wagner, Frick, & Schupp, 2007), einer multidisziplinären und repräsentativen jährlichen Wiederholungsbefragung privater Haushalte in Deutschland, verwendet. Für die hier vorgestellte Studie wurden Daten aus den Jahren 1984 bis 2012 einbezogen; die Stichprobengröße betrug N = 57,533. Statusangst wurde anhand der Variable *Wirtschaftliche Sorgen* abgebildet, für die die Studienteilnehmer nach dem Ausmaß ihrer Sorgen um ihre wirtschaftliche Situation befragt worden waren.

Die Zusammenhänge zwischen Einkommensungleichheit, wirtschaftlichen Sorgen und Lebenszufriedenheit wurden mithilfe eines *Cross-classified multilevel models* untersucht. Hierbei wurden die Erhebungszeitpunkte aus der Panelstudie zugleich in die Erhebungswellen als auch in die Individuen geclustert: Während Lebenszufriedenheit, wirtschaftliche Sorgen und zeitabhängige Kontrollvariablen (d.h. Alter, Alter², Familienstand, Erwerbsstatus, Region und Einkommen) dem Erhebungszeitpunkt auf Level 1 (within-Level) zugeordnet wurden, wurden die makroökonomischen Variablen (d.h. Gini-Koeffizient, Bruttoinlandsprodukt [BIP], Erwerbslosenquote) in die Erhebungsjahre auf Level 2 (between years-Level), und die zeitlich stabilen individuellen Eigenschaften (d.h. Geschlecht) in die Individuen auf Level 2 (between persons-Level) geclustert.

Zunächst wurde der direkte Effekt der Einkommensungleichheit auf die Lebenszufriedenheit untersucht. Mithilfe eines *Cross-classified multilevel mediation models* (2-1-1 MSEM; Preacher, Zhang, & Zyphur, 2011; Preacher, Zyphur, & Zhang, 2010) konnte anschließend der indirekte Effekt von Einkommensungleichheit auf Lebenszufriedenheit mediiert durch wirtschaftliche Sorgen analysiert werden. Zur Untersuchung moderierender Effekte durch interindividuelle Unterschiede im Einkommenslevel wurde die Stichprobe schließlich in verschiedene Einkommensgruppen (d.h. Individuen mit Einkommen (1) unterhalb der Armutsgrenze, (2) oberhalb der Armutsgrenze und unterhalb des 90% Perzentils der Einkommensverteilung, (3) oberhalb des 90% Perzentils) eingeteilt und sowohl der direkte Effekt der Einkommensungleichheit auf die Lebenszufriedenheit wie auch der Mediationseffekt durch wirtschaftliche Sorgen für jede der Gruppen getrennt geschätzt.

Ergebnisse

Für die Gesamtstichprobe konnte ein negativer direkter Effekt von Einkommensungleichheit auf Lebenszufriedenheit nachgewiesen werden, was darauf hindeutete, dass in Jahren mit höherer Einkommensungleichheit in Deutschland die Lebenszufriedenheit der Menschen abnahm (siehe Tabelle 2). Dabei war die Stärke des Effekts der Einkommensungleichheit vergleichbar mit der anderer makroökonomischer Variablen wie nationalem Wohlstand oder der Erwerbslosenquote. Im Mediatormodell zeigte sich, dass der Effekt der Einkommensungleichheit auf die Lebenszufriedenheit vollständig durch die wirtschaftlichen Sorgen der Menschen vermittelt wurde (siehe Abbildung 1, durchgehende Linien zeigen signifikante Effekte, die gestrichelte Linie zeigt den nicht signifikanten direkten Effekt). Ein Anstieg der Einkommensungleichheit ging somit einher mit einer Zunahme wirtschaftlicher Sorgen, die wiederum mit einer geringer ausgeprägten Lebenszufriedenheit zusammenhingen.

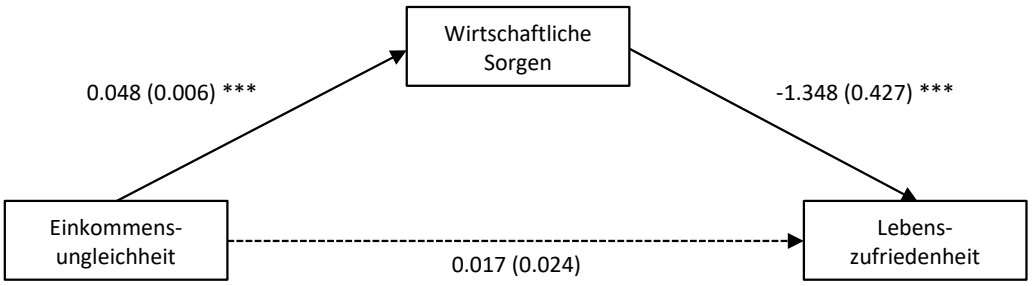

Abbildung 1: Cross-classified multilevel mediation model

Bei der Untersuchung eines potentiell moderierenden Effekts des Einkommenslevels bestand für die untere Einkommensgruppe ein signifikanter negativer direkter Effekt von Einkommensungleichheit auf Lebenszufriedenheit. Im Mediationsmodell jedoch zeigte sich für diese Gruppe lediglich ein Effekt der Einkommensungleichheit auf die wirtschaftlichen Sorgen, ohne weitere Bedeutung für die Lebenszufriedenheit. Die vermehrten Sorgen über die wirtschaftliche Situation einkommensschwacher Personen in Jahren höherer Ungleichheit wirkten sich somit nicht bedeutsam auf deren Lebenszufriedenheit aus.

Auch für die mittlere Einkommensgruppe ließ sich zunächst ein signifikanter negativer direkter Effekt von Einkommensungleichheit auf die Lebenszufriedenheit nachweisen. Im Mediationsmodell allerdings wurde deutlich, dass der Effekt vollständig durch wirtschaftliche Sorgen mediiert wurde. Wäh-

rend bei steigender Einkommensungleichheit die wirtschaftlichen Sorgen in der mittleren Einkommensgruppe zunahmen, verschlechterte sich dabei die Lebenszufriedenheit.

Für die obere Einkommensgruppe zeigte sich zunächst kein signifikanter direkter Effekt von Einkommensungleichheit auf die Lebenszufriedenheit, allerdings konnte ein inkonsistenter Mediatoreffekt nachgewiesen werden: Während für Personen mit hohem Einkommen in Jahren höherer Ungleichheit die Lebenszufriedenheit zunahm, verstärkten sich ihre wirtschaftlichen Sorgen und reduzierten dabei ihre Lebenszufriedenheit. Beide Effekte waren etwa gleich stark, was den zunächst nicht signifikanten direkten Effekt innerhalb dieser Einkommensgruppe erklärt.

Tabelle 2: Ergebnisse der Cross-classified multilevel-Analysen

Modell	Regressionspfade	b[a]	PPC[b]
	Gesamtstichprobe (N = 57,533)[c]		
Direkter Effekt	Gini – Lebenszufriedenheit	-0.047 (0.014)***	0.506
Mediationsmodell	Gini – Lebenszufriedenheit	0.017 (0.024)	
	Gini – wirtschaftliche Sorgen	0.048 (0.006)***	0.122
	Wirtschaftliche Sorgen – Lebenszufriedenheit	-1.348 (0.427)***	
	Indirekter Effekt	-0.064 (0.022)***	
	Untere Einkommensgruppe: Individuen unterhalb der Armutsgrenze (n =15,848)		
Direkter Effekt	Gini – Lebenszufriedenheit	-0.032 (0.015)*	0.456
Mediationsmodell	Gini – Lebenszufriedenheit	0.012 (0.031)	
	Gini – wirtschaftliche Sorgen	0.046 (0.006)***	0.141
	Wirtschaftliche Sorgen – Lebenszufriedenheit	-0.977 (0.617)†	
	Indirekter Effekt	-0.044 (0.029)†	
	Mittlere Einkommensgruppe: Individuen oberhalb der Armutsgrenze und unterhalb des 90% Perzentils der Einkommensverteilung (n = 51,421)		
Direkter Effekt	Gini – Lebenszufriedenheit	-0.046 (0.015)***	0.458
Mediationsmodell	Gini – Lebenszufriedenheit	0.019 (0.025)	
	Gini – wirtschaftliche Sorgen	0.049 (0.006)***	0.122
	Wirtschaftliche Sorgen – Lebenszufriedenheit	-1.351 (0.434)**	
	Indirekter Effekt	-0.065 (0.023)**	
	Obere Einkommensgruppe: Individuen oberhalb des 90% Perzentils (n = 12,100)		
Direkter Effekt	Gini – Lebenszufriedenheit	-0.007 (0.019)	0.492
Mediationsmodell	Gini – Lebenszufriedenheit	0.048 (0.022)*	
	Gini – wirtschaftliche Sorgen	0.034 (0.007)***	0.125
	Wirtschaftliche Sorgen – Lebenszufriedenheit	-1.722 (0.486)***	
	Indirekter Effekt	-0.056 (0.021)***	

Anmerkungen: Angegeben sind die Regressionspfade zwischen den genannten Variablen für alle Modelle. Gini-Koeffizient und wirtschaftliche Sorgen sind grandmean-zentriert. Kontrollvariablen auf dem within-Level: Alter, Alter², Familienstand, Erwerbsstatus, Region, Einkommen; Kontrollvariable auf dem between persons-Level: Geschlecht; Kontrollvariablen auf dem between years-Level: BIP, Erwerbslosenquote.

***$p \leq .001$. **$p \leq .01$. *$p \leq .05$. †$p \leq .1$. [a]Unstandardisierte Regressionskoeffizienten mit Posterior S.D. in Klammern. [b]Posterior predictive checks für alle Modelle nicht signifikant. [c]Die Gesamtstichprobengröße entspricht der Gesamtzahl aller über die betrachteten Jahre im Datensatz enthaltenen Studienteilnehmer; die Summe der Stichprobengrößen der einzelnen Einkommensgruppen weicht hiervon ab, da Studienteilnehmer durch das längsschnittliche Studiendesign aufgrund variierender Einkommen in mehreren Einkommensgruppen enthalten sein können.

Diskussion

Studie II zeigt, dass Einkommensungleichheit einen relevanten Prädiktor der Lebenszufriedenheit darstellt, dessen Bedeutung vergleichbar mit der anderer makroökonomischer Variablen ist, wie beispielsweise nationalem Wohlstand oder der Erwerbslosenquote. So reduziert beispielsweise ein An-

stieg der Einkommensungleichheit von 1 *SD* (d.h. 1.6 Punkte, entspricht der Veränderung des Gini zwischen den Jahren 2001 und 2004) die durchschnittliche Lebenszufriedenheit der Deutschen um 0.1 Punkte, was den Auswirkungen eines Anstiegs der Erwerbslosenquote von 1.4% auf die Lebenszufriedenheit entspricht. In ihrer Gesamtheit erklärten die drei makroökonomischen Faktoren ca. 74% der Varianz der Lebenszufriedenheit der deutschen Bevölkerung zwischen den untersuchten Jahren. Dabei wirkte sich Einkommensungleichheit nicht nur direkt mindernd auf die individuelle Lebenszufriedenheit aus, sondern reduzierte auch indirekt durch eine Erhöhung der wirtschaftlichen Sorgen der Menschen deren Lebenszufriedenheit.

Anders als vielfach beschrieben, waren nicht nur die Ärmeren innerhalb der Bevölkerung von Einkommensungleichheit nach Steuern betroffen (Alesina et al., 2004; Oishi et al., 2011; Schwarze & Härpfer, 2007), sondern diese beeinflusste alle Bevölkerungsschichten: So zeigte sich bei der vergleichenden Betrachtung verschiedener Einkommensgruppen insbesondere für Personen mit niedrigen und mittleren Einkommen ein negativer Zusammenhang zwischen Einkommensungleichheit und Lebenszufriedenheit, während dieser Effekt für Personen mit hohen Einkommen zunächst nicht nachweisbar war. Jedoch nahmen bei höherer Ungleichheit die wirtschaftlichen Sorgen aller Einkommensgruppen zu, was negative Auswirkungen auf die Lebenszufriedenheit insbesondere für die mittlere und obere Einkommensgruppe hatte, während vermehrte wirtschaftliche Sorgen die Lebenszufriedenheit des ärmeren Teils der Bevölkerung nicht weiter belasteten. Dies könnte darauf zurückzuführen sein, dass zahlreiche weitere Umstände, die diese Bevölkerungsgruppe treffen, wie ein zumeist schlechterer Gesundheitszustand, schlechtere Ernährung, sozialer Ausschluss, Schulden oder schlechtere Wohnverhältnisse, grundsätzlich die Lebenszufriedenheit vermindern, und eine weitere Zunahme wirtschaftlicher Sorgen sich kaum noch auf die Zufriedenheit auswirkt.

Eine interessante Beobachtung ließ sich für die obere Einkommensgruppe machen: Zwar zeigte sich wie bereits von Schwarze und Härpfer (2007) beschrieben, zunächst kein direkter Effekt der Einkommensungleichheit auf die Lebenszufriedenheit für diese Einkommensgruppe. Während jedoch unter Berücksichtigung der wirtschaftlichen Sorgen deren Ausmaß bei höherer Einkommensungleichheit zu- und die Lebenszufriedenheit dieser Einkommensgruppe abnahm, zeigte sich zugleich auch eine direkte Verbesserung der Lebenszufriedenheit bei zunehmend ungleicher Verteilung der Einkommen. Nach F. Cheung und Lucas (2016) nehmen bei gestiegener Einkommensungleichheit soziale Vergleichsprozesse zu und wirken sich insbesondere für den ärmeren Teil der Bevölkerung negativ auf deren Lebenszufriedenheit aus. Dementgegen profitieren die Reicheren innerhalb einer ungleicheren Gesellschaft von sozialem Vergleich, da hier die Bedeutung ihres sozialen Status noch weiter gestärkt wird. Es zeigten sich allerdings auch die Reicheren bei zunehmender Einkommensungleichheit besorgt über eine Veränderung ihrer wirtschaftlichen Verhältnisse. Obgleich ein so wohlhabendes Land

wie Deutschland über ein relativ stabiles politisches System und einen etablierten Rechtsstaat verfügt, befürchten Reiche möglicherweise soziale Unruhen oder die Zunahme von Kriminalität als Folge eines Anstiegs der Ungleichheit, was schließlich eine Bedrohung ihres sozialen Status und ihrer Besitzverhältnisse zur Folge haben könnte (Ferrer-i-Carbonell & Ramos, 2014; Van de Werfhorst & Salverda, 2012).

Der tatsächlich zugrundeliegende Wirkmechanismus zwischen Einkommensungleichheit und Lebenszufriedenheit für die obere Einkommensschicht wurde erst im Rahmen der Mediationsanalyse erkennbar, während sich die dabei ermittelten entgegengesetzten Effekte bei Betrachtung des einfachen direkten Effekts zwischen Ungleichheit und Lebenszufriedenheit aufhoben. Während in der vorliegenden Literatur jedoch zumeist die direkten Effekte von Einkommensungleichheit betrachtet und oftmals keine komplexen Wirkzusammenhänge berücksichtigt werden, liefert dieser Befund aus Studie II eine bedeutsame Erkenntnis über die Komplexität des Zusammenspiels zwischen Einkommensungleichheit und Lebenszufriedenheit.

Entgegen der Annahme von Delhey und Dragolov (2014), dass Statusangst ausschließlich in ärmeren Ländern eine Rolle für den Zusammenhang zwischen Einkommensungleichheit und Lebenszufriedenheit spielt, zeigte Studie II eindeutig, dass diese (gemessen anhand wirtschaftlicher Sorgen) auch in einem wohlhabenden Land wie Deutschland von großer Bedeutung ist. Bei steigender Ungleichheit empfinden die Menschen auch hier eine stärkere wirtschaftliche Unsicherheit und sind in höherem Maße um ihre persönliche wirtschaftliche Situation besorgt, was wiederum mit Kummer und Unzufriedenheit einhergeht.

Zusammenfassung

Die dargestellte Studie zeigt, dass Einkommensungleichheit auf nationaler Ebene die individuelle Lebenszufriedenheit beeinflusst. Die deutsche Bevölkerung ist im Allgemeinen zufriedener, wenn die Einkommen innerhalb der Bevölkerung gleichmäßiger verteilt sind. Darüber hinaus wachsen bei zunehmender Einkommensungleichheit die Sorgen über die persönliche wirtschaftliche Situation und verringern die Lebenszufriedenheit. Statusangst ist somit auch in einem der weltweit wohlhabendsten Länder ein bedeutsamer Mediator des Zusammenspiels zwischen Ungleichheit und Lebenszufriedenheit. Die konkreten Auswirkungen von gestiegener Einkommensungleichheit unterscheiden sich darüber hinaus je nach Einkommensgruppe.

3.3 Zusammenhang zwischen Einkommen und subjektivem Wohlbefinden

Hinführung

Die Frage nach der Bedeutung von Einkommen für das SWB der Menschen beschäftigt seit Langem nicht nur Laien, sondern auch die Forschung in unterschiedlichsten Disziplinen. Denen, die über ein höheres Einkommen verfügen, wird zugeschrieben, glücklicher zu sein als andere (Diener et al., 1999). In der vorliegenden Literatur zeigt sich konsistent ein zwar signifikanter, doch lediglich schwacher Zusammenhang zwischen beiden Variablen, der zwischen $r = .1$ und $.3$ liegt (Bak-Klimek, Karatzias, Elliott, & Maclean, 2014; Cummins, 2000; Haring, Stock, & Okun, 1984; Howell & Howell, 2008; Larson, 1978; Pinquart & Sörensen, 2000; Tan, Kraus, Carpenter, & Adler, 2020; Topa, Moriano, Depolo, Alcover, & Moreno, 2011). Dabei ist der Zusammenhang zwischen Einkommen und SWB in ärmeren Ländern stärker ausgeprägt als in reicheren (Arthaud-Day & Near, 2005; Diener & Oishi, 2000; Howell & Howell, 2008; Tan et al., 2020) und variiert darüber hinaus auch in Abhängigkeit von der erfassten Komponente des SWB, sowie den Merkmalen der betrachteten Personen, wie deren Geschlecht, Alter, Bildungshintergrund und Einkommenslevel (Cummins, 2000; Haring et al., 1984; Howell & Howell, 2008; Pinquart & Sörensen, 2000; Topa et al., 2011). Es liegen bereits einige metaanalytische Studien vor, die die umfassende Literatur zum Zusammenhang zwischen Einkommen und SWB zusammenfassen. Jedoch fokussieren diese auf spezifische Stichproben oder Länder und schränken damit die Generalisierbarkeit ihrer Befunde ein. In der vorliegenden Literatur wird insbesondere die Bedeutung des Wohlstandes eines Landes als Moderator des Zusammenhangs zwischen Einkommen und SWB hervorgehoben (vgl. insbes. Howell & Howell, 2008). Gleichwohl gibt es auch Hinweise auf einen moderierenden Effekt von Einkommensungleichheit (F. Cheung & Lucas, 2016), welcher jedoch bislang im Rahmen metaanalytischer Untersuchungen nicht ausreichend berücksichtigt wurde (vgl. Tan et al., 2020).

Ziel der Studie

Ziel von Studie III (Roth et al., 2021) war es daher, die umfangreiche vorhandene Literatur zum Zusammenhang zwischen Einkommen und SWB metaanalytisch zu integrieren, ohne die Aussagekraft der Befunde auf spezifische Personengruppen oder Länder einzuschränken. Darüber hinaus sollte neben dem nationalen Wohlstand insbesondere Einkommensungleichheit als makroökonomische Moderatorvariable untersucht werden, sowie die spezifische Rolle der beiden SWB-Komponenten (CWB, AWB) und die des Entwicklungstandes der einbezogenen Länder Beachtung finden.

Methodik

Zur Durchführung der Metaanalyse wurde ein *Three-level variance known random effects model* nach M. W.-L. Cheung (2015) angewandt, dessen Vorteil insbesondere darin lag, dass sowohl die genestete Datenstruktur berücksichtigt (ein Großteil der Stichproben lieferte mehrere Korrelationskoeffizienten, die so sämtlich in die Analyse miteinbezogen werden konnten), als auch die unterschiedlichen Quellen von Heterogenität auf den einzelnen Levels ermittelt werden konnten. Das Mehrebenenmodell enthielt die gewichteten Stichprobenkoeffizienten auf Level 1, die multiplen Koeffizienten pro Stichprobe auf Level 2, und die unabhängigen Stichproben auf Level 3.

Als mögliche Moderatorvariablen des Zusammenhangs zwischen Einkommen und SWB wurden die beiden SWB-Komponenten (CWB vs. AWB), der Entwicklungsstand eines Landes (entwickelte Länder vs. Schwellen- und Entwicklungsländer) sowie dessen Wohlstand (gemessen mit dem BIP), die Einkommensungleichheit innerhalb des Landes (gemessen mit dem Gini-Koeffizient), sowie die Stichprobencharakteristika Geschlecht, Alter, Bildungsstand und Jahr der Datenerhebung untersucht. Für die kategorialen Moderatorvariablen (SWB-Komponenten und Entwicklungsstand eines Landes) wurden für die zugehörigen Subgruppen jeweils getrennte Analysen durchgeführt, die kontinuierlichen Moderatorvariablen (Wohlstand eines Landes, Einkommensungleichheit und Stichprobencharakteristika) wurden als Prädiktoren in das Modell aufgenommen. Der Einfluss der Reliabilität der eingesetzten Testverfahren wurde im Modell kontrolliert.

Ergebnisse

In einer breit angelegten Literaturrecherche konnten 135 Primärstudien identifiziert werden, die Angaben zu 185 unabhängigen Stichproben mit k = 385 Korrelationskoeffizienten lieferten. Die Studien wurden zwischen 1973 und 2013 publiziert und stammten aus 34 Ländern. Die Gesamtstichprobengröße betrug N = 209,632 Probanden.

Im Rahmen der Hauptuntersuchung, in die alle Stichprobenkoeffizienten einflossen, konnte eine mittlere Populationskorrelation zwischen Einkommen und SWB von ρ = .146 (95% CI [.131, .161]) ermittelt werden. Es bestand Heterogenität zwischen den wahren Effekten der inkludierten Stichproben: Ein Anteil von 26.6% der gesamten Heterogenitätsvarianz ging auf Unterschiede zwischen den multiplen Korrelationskoeffizienten pro Stichprobe zurück, während 64.4% der Heterogenitätsvarianz durch Unterschiede zwischen den Stichproben zustande kam. Dies bekräftigte das Vorhaben, eine Reihe potentieller Moderatorvariablen zu untersuchen (siehe Tabelle 3, signifikante Moderatorvariablen aus dem jeweils vollständigen Modell von Hauptanalyse und Moderatorsubgruppen): Es zeigte

sich ein signifikanter Moderatoreffekt für das mittlere Alter der Stichproben, wobei die Stärke des Zusammenhangs zwischen Einkommen und SWB mit dem Alter der Studienteilnehmer anstieg. Für das Jahr der Datenerhebung zeigte sich zunächst ein moderierender Effekt auf dem 10% Signifikanzniveau, was darauf hindeutete, dass ökonomische Trends, die über den Zeitverlauf bestanden, den Zusammenhang zwischen Einkommen und SWB beeinflussten. Es ließ sich kein moderierender Effekt durch den nationalen Wohlstand nachweisen. Einkommensungleichheit hingegen war ein signifikanter Moderator des Zusammenhangs zwischen Einkommen und SWB, wobei die Stärke des Zusammenhangs bei steigender Einkommensungleichheit zunahm. Nach Hinzunahme beider makroökonomischer Indikatoren entfiel der Effekt des Jahres der Datenerhebung, da die hierdurch erfassten ökonomischen Trends über den Zeitverlauf vollständig durch den nationalen Wohlstand und die Einkommensungleichheit abgebildet werden konnten. Gemäß der Analyse des fail-safe *N* müssten zusätzlich 726,104 Nulleffektstudien in die Metaanalyse einbezogen werden, um den gefunden mittleren Effekt auf ein nicht-signifikantes Niveau zu reduzieren. Da dies die Anzahl der inkludierten Stichprobenkoeffizienten eindeutig übersteigt, können die Befunde der Studie als äußerst robust gegenüber einem Publikationsbias angesehen werden. Darüber hinaus streuten die Stichprobenkoeffizienten in den betrachteten Funnel Plots symmetrisch um die mittleren Effekte, was ebenfalls darauf hindeutete, dass keine Verzerrungen aufgrund eines Publikationsbias vorlagen.

Es zeigte sich ein tendenzieller Moderatoreffekt zwischen beiden SWB-Komponenten. Die geschätzte mittlere Korrelation mit Einkommen betrug für CWB ρ = .162 (90% CI [.142, .180]) und lag damit über derjenigen für AWB von ρ = .126 (90% CI [.113, .140]). Während der Zusammenhang zwischen Einkommen und CWB durch keines der Stichprobencharakteristika moderiert wurde, zeigte sich für den Zusammenhang zwischen Einkommen und AWB ein signifikanter Moderatoreffekt durch das mittlere Alter der Stichproben, bei dem die Stärke der Korrelation zwischen Einkommen und AWB mit zunehmendem Alter der Studienteilnehmer anstieg. Unter Berücksichtigung der makroökonomischen Variablen wurde hier auch ein moderierender Effekt des Geschlechts der Stichproben deutlich. Diesem jedoch kam aufgrund der fehlenden zusätzlichen Varianzaufklärung keine nennenswerte praktische Bedeutung zu. Einkommensungleichheit stellte sich als signifikanter Moderator für beide Komponenten heraus, war jedoch aufgrund der zusätzlichen Varianzaufklärung lediglich für den Zusammenhang zwischen Einkommen und CWB von praktischer Relevanz. Für keine der beiden SWB-Komponenten ließ sich ein moderierender Effekt durch den nationalen Wohlstand nachweisen.

Es konnte kein signifikanter Unterschied zwischen den mittleren Korrelationen für entwickelte Länder (ρ = .144, 95% CI [.130, .158]) gegenüber Schwellen- und Entwicklungsländern (ρ = .142, 95% CI [.108, .176]) gefunden werden. Für entwickelte Länder zeigte sich ein tendenzieller Moderatoreffekt durch das Geschlecht, welcher jedoch durch die fehlende Varianzaufklärung kaum praktisch bedeutsam

war. Keiner der beiden makroökonomischen Indikatoren zeigte einen moderierenden Effekt in dieser Ländergruppe. In Schwellen- und Entwicklungsländern moderierte das mittlere Alter der Stichproben den Zusammenhang zwischen Einkommen und SWB, wobei sich für durchschnittlich ältere Stichproben erneut ein stärkerer Zusammenhang zwischen Einkommen und SWB zeigte. Da nach Berücksichtigung der Stichprobencharakteristika keine Heterogenitätsvarianz mehr nachgewiesen werden konnte, wurden keine weiteren Moderatorvariablen untersucht.

Der Zusammenhang zwischen Einkommen und den beiden Komponenten CWB und AWB wurde zusätzlich getrennt für entwickelte Länder sowie für Schwellen- und Entwicklungsländer untersucht. Hierbei zeigte sich erneut ein tendenzieller Moderatoreffekt zwischen beiden SWB-Komponenten, der jedoch ausschließlich in den entwickelten Ländern zum Tragen kam (Einkommen – CWB: ρ = .161, 90% CI [.143, .178]; Einkommen – AWB: ρ = .127, 90% CI [.113, .141]). Innerhalb der entwickelten Länder waren weder die makroökonomischen Indikatoren noch die Stichprobencharakteristika für die beiden SWB-Komponenten von praktischer Relevanz. Dementgegen ließen sich in Schwellen- und Entwicklungsländern bedeutsame Moderatoreffekte von Alter und Einkommensungleichheit für den Zusammenhang zwischen Einkommen und CWB nachweisen, wonach dessen Stärke in den ärmeren Ländern mit zunehmendem Alter der Menschen und bei höherer Einkommensungleichheit anstieg. Erneut gab es hier keinen Hinweis auf einen Einfluss durch den nationalen Wohlstand. Für den Zusammenhang zwischen Einkommen und AWB wurden in dieser Ländergruppe aufgrund der nicht vorhandenen Heterogenitätsvarianz keine Moderatorvariablen untersucht.

Sensitivitätsanalysen sicherten die Robustheit der metaanalytischen Befunde gegenüber Ausreißern hinsichtlich extremer Stichprobengrößen und Korrelationskoeffizienten sowie Verzerrungseffekten aufgrund von im Datensatz überrepräsentierten Ländern ab. Die Ergebnisse der Hauptanalyse konnten in sämtlichen Sensitivitätsanalysen bestätigt werden, weshalb nicht von Verzerrungseffekten aufgrund der genannten Faktoren auszugehen ist.

Tabelle 3: Ergebnisse der Haupt- und Moderatoranalysen zum Zusammenhang zwischen Einkommen und SWB

Analyse	ρ (CI)	Moderatorvariablen					
		Geschlecht	Alter	Bildung	Jahr	BIP	Gini
Hauptanalyse	0.146 (95% CI [0.131, 0.161])		•				•
Moderatoranalyse: SWB-Komponenten							
CWB	0.162 (90% CI [0.142, 0.180])						•
AWB	0.126 (90% CI [0.113, 0.140])	•[a]	•				•[a]
Moderatoranalyse: Entwicklungsstand eines Landes							
Entwickelte Länder	0.144 (95% CI [0.130, 0.158])	(•)[a]					
Schwellen-/ Entwicklungsländer	0.142 (95% CI [0.108, 0.176])		•			*nicht untersucht*[b]	
Moderatoranalyse: SWB-Komponenten und Entwicklungsstand							
CWB in entwickelten Ländern	0.161 (90% CI [0.143, 0.178])						
CWB in Schwellen-/ Entwicklungsländern	0.152 (90% CI [0.106, 0.197])		•				•
AWB in entwickelten Ländern	0.127 (90% CI [0.113, 0.141])					•[a]	
AWB in Schwellen-/ Entwicklungsländern	0.128 (90% CI [0.097, 0.161])	*nicht untersucht*[c]					

Anmerkungen: Angegeben sind die Populationskorrelationen zwischen Einkommen und SWB sowie die signifikanten Moderatorvariablen aus dem jeweils vollständigen Modell für Hauptanalyse und sämtliche Moderatorsubgruppen.

ρ = Populationskorrelation. CI = Konfidenzintervall. BIP = Bruttoinlandsprodukt. • = $p \leq .05$. (•) = $p \leq .10$. [a]Signifikante Moderatorvariable, aber keine (zusätzliche) Varianzaufklärung. [b]Nach Einschluss der Stichprobencharakteristika keine verbleibende Heterogenitätsvarianz auf Level 3, daher keine Untersuchung weiterer Moderatorvariablen. [c]Keine signifikante Heterogenitätsvarianz auf Level 3, daher keine Untersuchung von Moderatorvariablen.

Diskussion

Die in Studie III gefundene mittlere Korrelation zwischen Einkommen und SWB von $\rho = .146$ bestätigt die Befunde vorhergehender Metaanalysen (Bak-Klimek et al., 2014; Cummins, 2000; Haring et al., 1984; Howell & Howell, 2008; Larson, 1978; Pinquart & Sörensen, 2000; Tan et al., 2020; Topa et al., 2011). Demnach gehen lediglich ca. 2% der Varianz des SWB auf Unterschiede im Einkommen der Menschen zurück. Da jedoch nach Schätzungen von Lyubomirsky, Sheldon und Schkade (2005) ca. 50% des SWB genetisch bedingt sind und ca. 40% durch die Aktivitäten der Menschen beeinflusst werden (wie sportliches Training oder das Bemühen, sich anderen Menschen gegenüber positiv zu verhalten), ist grundsätzlich nur ein begrenzter Anteil der Varianz von SWB durch äußere Umstände (wie Einkommen, Familienstand oder Gesundheit) beeinflussbar. Dennoch deutet der in der hier be-

schriebenen Metaanalyse gefundene Zusammenhang zwischen Einkommen und SWB darauf hin, dass Menschen, die über ein höheres Einkommen verfügen, glücklicher sind als Menschen mit niedrigerem Einkommen (vgl. auch Diener & Oishi, 2000; Sacks et al., 2012). Da bei der Recherche nach geeigneten Primärstudien keine Einschränkung hinsichtlich spezifischer Stichproben oder Länder vorgenommen wurde und die Suche nach Literatur sehr umfassend angelegt war, kann von einer hohen Generalisierbarkeit der Ergebnisse der vorliegenden Studie ausgegangen werden.

Während bereits vorliegende Studien die zentrale Rolle des nationalen Wohlstandes für den Zusammenhang zwischen Einkommen und SWB hervorhoben (Howell & Howell, 2008; Schyns, 2002; Tan et al., 2020; Veenhoven, 1991), zeigt die vorliegende Metaanalyse, dass nicht der nationale Wohlstand oder Entwicklungsstand ausschlaggebend sind, sondern die Verteilung des Wohlstandes innerhalb der Gesellschaft. Bereits in früheren Untersuchungen zeigte sich, dass mit einer höheren Einkommensungleichheit nicht nur ein Rückgang der Lebenszufriedenheit der Menschen einhergeht (Alesina et al., 2004; Ferrer-i-Carbonell & Ramos, 2014; Oishi et al., 2011; siehe auch Studie II), sondern auch der Zusammenhang zwischen Einkommen und SWB ansteigt (F. Cheung & Lucas, 2016). Diesen Moderatoreffekt kann die hier dargestellte Studie erstmals auf metaanalytischer Ebene bestätigen. Während die allgemeine Bedeutung des Einkommens für das SWB zumeist auf Grundlage bedürfnistheoretischer Modelle erklärt wird (Diener & Biswas-Diener, 2002; Maslow, 1970; Schyns, 1998), lässt sich der Effekt der Einkommensungleichheit auf soziale Vergleichsprozesse zurückführen (F. Cheung & Lucas, 2016; Festinger, 1954; Hagerty, 2000). Bei steigender Einkommensungleichheit neigen Menschen verstärkt zu einem Vergleich mit sozial besser gestellten Individuen (Schor, 1998), wodurch auch die Bedeutung des eigenen Einkommens für das SWB zunimmt. Obgleich dieser Effekt in der Hauptanalyse ersichtlich wurde, wurde er doch ursächlich durch die Schwellen- und Entwicklungsländer getragen, in denen bei höherer Einkommensungleichheit die Bedeutung des Einkommens insbesondere für das CWB der Menschen zunahm.

Die dargestellte Metaanalyse fand darüber hinaus eine tendenziell höhere Korrelation von Einkommen mit CWB als mit AWB, die sich insbesondere in den entwickelten Ländern zeigte. Dies lässt sich darauf zurückführen, dass Menschen bei der kognitiven Bewertung ihrer Lebenszufriedenheit ihre objektiven Lebensumstände einbeziehen, während diese für ihre affektiven Erfahrungen von erheblich geringerer Bedeutung sind (Diener et al., 2010; Kahneman et al., 2004). Der gefundene Moderatoreffekt der Einkommensungleichheit für den Zusammenhang zwischen Einkommen und CWB kann darauf zurückgeführt werden, dass die sozialen Vergleichsprozesse, die bei zunehmender Einkommensungleichheit zum Tragen kommen, sich insbesondere bei der kognitiven Beurteilung der Zufriedenheit auswirken (F. Cheung & Lucas, 2016).

Hinsichtlich der Stichprobencharakteristika ließ sich wiederholt ein moderierender Effekt durch das Alter der Stichproben nachweisen, wobei die Stärke des Zusammenhangs zwischen Einkommen und SWB mit steigendem Alter der Studienteilnehmer zunahm. Dies kontrastierte bisherige Hinweise auf einen schwächeren Zusammenhang zwischen Einkommen und SWB für Menschen höheren Alters (F. Cheung & Lucas, 2016; Pinquart & Sörensen, 2000; Topa et al., 2011). Interessant sind die Befunde der vorgestellten Studie daher, da sie einerseits zeigen, dass zwar mit zunehmendem Alter die Bedeutung von Einkommen insbesondere für das AWB ansteigt, gleichzeitig jedoch gerade innerhalb der Schwellen- und Entwicklungsländer für die Älteren das Einkommen relevanter für das CWB wird. So kann angenommen werden, dass Einkommen zwar generell für Menschen mit zunehmendem Alter umfangreichere Gelegenheiten zur sozialen Teilhabe schafft, die wiederum mit mehr positiven affektiven Erfahrungen einhergehen, gerade in Schwellen- und Entwicklungsländern jedoch Einkommen eine zentrale Rolle für die Lebenszufriedenheit der Menschen spielt, da es aufgrund fehlender sozialer Sicherungssysteme gerade für Menschen in höherem Alter die Grundlage des Überlebens bildet. Entgegen bereits vorliegender Befunde ließen sich in der hier beschriebenen Metaanalyse keine eindeutigen moderierenden Effekte durch Geschlecht und Bildung nachweisen (vgl. Haring et al., 1984; Howell & Howell, 2008; Pinquart & Sörensen, 2000). Der schließlich für die Hauptanalyse gefundene Effekt des Jahres der Datenerhebung wurde vollständig durch die untersuchten makroökonomischen Indikatoren getragen, so dass anzunehmen ist, dass darüber hinaus keine weiteren ökonomischen Trends über den Zeitverlauf den Zusammenhang zwischen Einkommen und SWB in bedeutsamem Maße beeinflussen.

Zusammenfassung

Die beschriebene Metaanalyse trägt zur bisherigen Forschungslage bei insbesondere durch die systematische Untersuchung unterschiedlicher Moderatorvariablen und die Befunde zum differentiellen Einfluss von Einkommen auf die beiden distinkten SWB-Komponenten. Darüber hinaus weist sie die zentrale Bedeutung der Einkommensungleichheit als Moderatorvariable nach und stellt anhand umfangreicher Analysen heraus, dass gerade die Verteilung von Einkommen innerhalb einer Bevölkerung von Relevanz ist und nicht wie in der bisherigen Literatur angenommen, der nationale Wohlstand.

4 Zusammenfassende Betrachtung

Die im ersten Teil der vorliegenden Arbeit vorgestellte Studie I erhärtet anhand einer umfangreichen metaanalytischen Untersuchung den in der bisherigen Literatur angenommenen, jedoch bislang nicht auf einer solch breiten Basis untersuchten, substantiellen Zusammenhang zwischen Intelligenz und Schulnoten. Obgleich gewisse Unterschiede in der Vorhersagekraft zwischen unterschiedlichen Arten von Testverfahren oder für verschiedene Settings (wie unterschiedliche Klassenstufen oder Schulfächergruppen) bestehen, bestätigt sich im Rahmen der Studie die immense Bedeutung kognitiver Fähigkeiten für schulischen Erfolg, für den Intelligenz wohl als einer der bedeutendsten Prädiktoren gelten kann.

Darüber hinaus untermauern die im zweiten Teil der vorliegenden Arbeit vorgestellten Studien II und III zum SWB auf Grundlage umfangreicher und bevölkerungsrepräsentativer Paneldaten sowie einer umfassenden metaanalytischen Untersuchung insbesondere die Bedeutung der Einkommensungleichheit sowohl für die individuelle Lebenszufriedenheit als auch im Sinne einer moderierenden Drittvariablen hinsichtlich des Zusammenhangs zwischen Einkommen und SWB. Die vorliegende Arbeit zeigt auf, dass Einkommensungleichheit die Lebenszufriedenheit aller Einkommensgruppen innerhalb der Bevölkerung auch in einem so wohlhabenden Land wie Deutschland beeinflusst. Darüber hinaus verstärkt sie den Zusammenhang zwischen Einkommen und SWB, dies jedoch insbesondere in weniger entwickelten Ländern. Die aktuellen Befunde bestätigen den in der bisherigen Literatur postulierten schwachen, doch konsistenten Zusammenhang zwischen Einkommen und SWB, und belegen den differentiellen Einfluss von Einkommen auf die kognitive und affektive Komponente des Konstruktes. Obgleich die Ökonomie zumeist darauf abstellt, die Wohlfahrt der Bevölkerung mit Hilfe von wirtschaftlichem Wachstum zu fördern, deuten die hier beschriebenen Befunde darauf hin, dass dem daraus resultierenden nationalen Wohlstand weder die zentrale Rolle zur Verbesserung des SWB, noch die Bedeutung als primärer Einflussfaktor auf den Zusammenhang zwischen Einkommen und SWB zukommt, wie vielfach in der Literatur angenommen. Stattdessen zeigt sich, dass eine gerechtere Verteilung des Wohlstandes innerhalb der Bevölkerung für beide Aspekte von essenzieller Bedeutung ist. Die Rolle der Einkommensungleichheit sollte folglich sowohl im Rahmen zukünftiger Forschung zu SWB, als auch bei ökonomischen und sozialpolitischen Entscheidungen besondere Beachtung finden.

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6 Anhang

Studie I:

Roth, B.*, Becker, N.*, Romeyke, S., Schäfer, S., Domnick, F., & Spinath, F. M. (2015). Intelligence and school grades: A meta-analysis. *Intelligence, 53*, 118–137. doi: 10.1016/j.intell.2015.09.002 (* joint first authorship)

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Studie II:

Roth, B., Hahn, E., & Spinath, F. M. (2017). Income inequality, life satisfaction, and economic worries. *Social Psychological and Personality Science, 8*(2), 133–141. doi: 10.1177/1948550616664955

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Income Inequality and the Relation of Income and Subjective Well-Being: A Meta-Analysis

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Abstract

The extensive literature on income and subjective well-being (SWB) has consistently shown a small, but significantly positive relationship. People with higher incomes report generally greater SWB than people with lower incomes. The current meta-analysis integrated the findings for 185 independent samples that analyzed the association between income and SWB. We found an average correlation between income and SWB of ρ = .146 and weak evidence for a stronger relationship between income and cognitive well-being (CWB) than between income and affective well-being (AWB). Developed economies did not significantly differ in their mean income-SWB association from economies in transition and developing economies. In contrast to the common assumption of national wealth affecting the income-SWB relation, we did not find evidence for a moderating effect. However, we found a stronger association between income and SWB as well as CWB for higher levels of income inequality, which occurred especially in economies in transition and developing economies but not in developed economies. We assume that rising income inequality leads to social comparison processes increasing the role of people's income for their well-being. Regarding sample related characteristics, we found a moderating effect of the mean age of the samples, only weak evidence for an effect of gender and the year of data collection, and no moderating effect for educational attainment.

Keywords

subjective well-being, income, national wealth, income inequality, meta-analysis

Introduction

Over many decades, the role of income for people's well-being has been of enormous interest for laypeople as well as for researchers. The common assumption is that higher income leads to higher levels of life satisfaction and happiness, and hence, that wealthier people are happier. They have for example, easier access to better nutrition, health care provision, better education, or better housing conditions, which arguably contribute to a happier life (Ahuvia, 2008; Argyle, 1999; Helliwell, Layard, & Sachs, 2012). Empirical evidence has shown that the association between income and well-being tends to be positive, but small (e.g., Diener & Biswas-Diener, 2002; Diener, Suh, Lucas, & Smith, 1999; Myers, 2000), ranging between r = .04 and .29 (Arthaud-Day & Near, 2005). The relationship is stronger for poorer countries compared to wealthier ones (Arthaud-Day & Near, 2005; Diener & Oishi, 2000; Veenhoven, 1991), a finding that is supported by need theory (Diener & Biswas-Diener,

2002; Schyns, 1998). However, countries differ not only in their level of affluence, but also in the distribution of incomes across the population. Research has shown that higher levels of income inequality are linked to lower individual well-being (Alesina, Di Tella, & MacCulloch, 2004; Ferrer-i-Carbonell & Ramos, 2014; Oishi, Kesebir, & Diener, 2011) and an increased association between income and life satisfaction which is likely due to social comparison effects (F. Cheung & Lucas, 2016; Hagerty, 2000).

Subjective well-being (SWB) relates to people's evaluations of their lives and their emotional experiences (Diener, 1984). Hence, it is a broad concept that includes two distinct components: Cognitive well-being (CWB), comprising life satisfaction (i.e., a global evaluation of a person's life) and the satisfaction with different life domains (e.g., marriage or work), and affective well-being (AWB), including positive and negative affect (i.e., experiencing many pleasant and few unpleasant emotions; Diener, 1984, 2000; Diener & Emmons, 1984; Lucas, Diener, & Suh, 1996). Research suggests that the role of income differs between both components, with a stronger relation to CWB than to AWB (Diener, Kahneman, Tov, & Arora, 2010; Diener, Tay, & Oishi, 2013; Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004).

Until now, there is no integration of the large body of literature regarding the relationship between income and SWB, systematically investigating potential differential effects of the distinct components of SWB, and the effect of income inequality aside from national wealth.

Previous meta-analyses regarding income and SWB

Focusing on the elderly, Larson (1978) examined the association between socioeconomic variables and SWB as well as other factors for Americans over 60 and found an estimated range of the income-SWB correlation of M(r) = .1 to .3.

Moreover, a meta-analysis by Pinquart and Sörensen (2000) analyzed the role of socioeconomic status (SES), social network, and competence for SWB in the elderly. They reported an average association with income of M(r) = .18 for life satisfaction, and of M(r) = .21 for happiness, respectively. Moderator analyses revealed stronger effects for male samples compared to female ones, and for younger samples compared to older ones.

The specific role of income for retirement was investigated by Topa, Moriano, Depolo, Alcover, and Moreno (2011). They found a mean correlation between objective income and life satisfaction of M(r) = .11 (95% CI [.09, .12]). Moderator analyses pointed to a stronger relationship for workers

compared to retirees, and younger samples. Geographically, the relationship was strongest within the European Union, followed by the United States, and other countries.

Haring, Stock, and Okun (1984) examined gender and social class as predictors of SWB of US adults, and found a mean correlation between income and SWB of M(*r*) = .17 (*SD*(*r*) = .12; controlling for gender: M(*r*) = .08, *SD*(*r*) = .16). Subgroup analyses revealed modest gender differences with a higher mean effect for male samples.

Addressing determinants of well-being among international immigrants, Bak-Klimek, Karatzias, Elliott, and Maclean (2014) reported a non-significant mean correlation with income of M(*r*) = .215 (95% CI [-.070, .500]). While sampling type (probability vs. nonprobability) was a significant moderator of the income-SWB association, it was not affected by SWB components.

Taking the curvilinear relationship between income and SWB into account, Cummins (2000) explored the association for samples with average versus low income. The mean effect was M(*r*) = .257 (*SD*(*r*) = .125) for low income samples and M(*r*) = .135 (*SD*(*r*) = .071) for average income samples, with a significant mean difference between both groups ($t(31) = 3.398$, $p < .01$).

Howell and Howell (2008) addressed the relationship between economic status and SWB in developing countries. The mean correlation with SWB was M(*r*) = .267 (95% CI [.257, .278]) for wealth and M(*r*) = .165 (95% CI [.159, .172]) for income (household income: M(*r*) = .180, *SE*(*r*) = .004; per capita income: M(*r*) = .180, *SE*(*r*) = .012; personal income: M(*r*) = .070, *SE*(*r*) = .010). The mean effect was significantly stronger for samples from low-income developing countries compared to samples from high-income developing countries, for less educated samples, when SWB was measured as quality of life and life or domain satisfaction instead of happiness, and for samples including a larger proportion of female participants.

Tan, Kraus, Carpenter, and Adler (2020) finally examined the relationship between socioeconomic status (SES) and SWB. They reported a “bare-bones” mean correlation between income and SWB of M(*r*) = .225 (*SD*(*r*) = .095), and a population correlation of $\rho = .234$ (*SD*(ρ) = .087) after correction for measurement unreliability. Moderator analyses applying metaregression revealed an increase of the income-SWB association for decreasing levels of national wealth and higher population density. No significant moderating effects were found for different indicators of income inequality, culture, and social mobility.

Existing meta-analytic findings support the assumption of a statistically significant, but small relationship between income and SWB, ranging between $r = .1$ and .3. There is empirical evidence for moderating effects of assessed SWB components (Howell & Howell, 2008; Pinquart & Sörensen,

2000), national wealth (Howell & Howell, 2008; Tan et al., 2020), population density (Tan et al., 2020), and the participants' gender (Haring et al., 1984; Howell & Howell, 2008; Pinquart & Sörensen, 2000), age (Pinquart & Sörensen, 2000; Topa et al., 2011), education (Howell & Howell, 2008), and income level (Cummins, 2000; Howell & Howell, 2008). Yet, previous meta-analyses focused on subgroups of the population or countries, limiting the generalizability of their findings. While most of the previous meta-analyses confirmed the importance of economic conditions for the income-SWB association, like the level of individual or national wealth, they hardly took the distribution of incomes within a society into account. The most recent meta-analysis by Tan et al. (2020) valuably complemented this gap, but left a range of questions unanswered, for example, the explicit role of income inequality in developed versus developing countries or for both distinct SWB components.

The current study

The current meta-analysis integrated the findings from existing research on the relationship between income and SWB to determine the overall mean effect and examine the particular role of macroeconomic indicators as national wealth and income inequality for the strength of that relationship. The effects on the two distinct SWB components, CWB and AWB, were systematically investigated, as well as specific economic conditions on the country level. Going further, we analyzed the potential moderating effects of the macroeconomic variables for each of the resulting subgroups (i.e., CWB vs. AWB, developed economies vs. economies in transition and developing economies), complementing previous research particularly with regard to the studies by Howell and Howell (2008) and Tan et al. (2020). To yield maximum generalizability of our findings, and to study the fundamental effects of national economic conditions, we included samples from all available countries. Finally, we examined different sample characteristics and their effects on the income-SWB association as described in the following section.

Moderator hypotheses

We examined different moderating variables regarding the SWB concept, the economic conditions of the countries the data were derived from, and macroeconomic variables as well as the specific characteristics of the included samples as described below.

SWB components. People tend to consider their objective circumstances, including their income level, when evaluating their lives, whereas these circumstances are less relevant for their affective experiences (Diener et al., 2010; Diener et al., 2013; Kahneman et al., 2004). Thus, we assumed that

the SWB components moderate the income-SWB association. Although previous meta-analyses reported contradictory findings when analyzing the relation between income and the cognitive versus affective component of SWB (Howell & Howell, 2008; Pinquart & Sörensen, 2000), we expected a stronger relationship between income and CWB compared to AWB and reassessed the potentially differential effect of income on both SWB components.

National economic situation and national wealth. The income-SWB relationship is stronger in developing countries compared to developed ones (Arthaud-Day & Near, 2005; Diener & Biswas-Diener, 2002; Diener & Oishi, 2000; Veenhoven, 1991). With their meta-analysis, Howell and Howell (2008) were the first to analyze the relationship between economic status (including income) and SWB as well as different moderating variables especially within developing countries. We expected to confirm a stronger income-SWB association within developing countries as compared to developed ones. Hence, examining the average income-SWB association and the effect of moderating variables in developing as well as developed countries complemented previous findings. Moreover, as national wealth moderates the income-SWB association (Howell & Howell, 2008; Schyns, 2002; Tan et al., 2020), we studied this moderating effect within both, developed and developing countries.

Income inequality. Increased levels of income inequality are associated with lower individual SWB (Alesina et al., 2004; Ferrer-i-Carbonell & Ramos, 2014; Oishi et al., 2011). The underlying social comparison effect might as well be applied to the income-SWB association: Higher levels of income inequality might cause social comparison processes and increase the role of income for people's SWB. Although Tan et al. (2020) did not find empirical evidence for this assumption, theoretical considerations led us to expect a moderating effect of income inequality on the association between income and SWB.

Gender. Diener and Biswas-Diener (2002) described differential effects of income on SWB for men and women, which can be explained by different socially defined gender roles (Zyphur, Li, Zhang, Arvey, & Barsky, 2015). While Haring et al. (1984) and Pinquart and Sörensen (2000) found stronger effects for male samples, Howell and Howell (2008) reported stronger effects for female samples. The current study examined potential gender differences regarding the income-SWB association.

Age. The income-SWB association varies across different points in people's life course (F. Cheung & Lucas, 2015). Different life stages (e.g., gain independence, start work life, set up a family, go to retirement) are associated with specific liberties and obligations, and are highly correlated with age. For example, existing meta-analyses reported a stronger relationship between income and SWB for younger samples as compared to older ones (Pinquart & Sörensen, 2000; Topa et al., 2011). We therefore included age as a potential moderator of the income-SWB relation.

Educational attainment. Education is highly correlated with income (Turner, Tamura, Mulholland, & Baier, 2007), and also effects SWB, because SWB increases with higher income (Michalos, 2008). The moderating effect of education on the income-SWB relation was studied by Howell and Howell (2008). They found a stronger association between income and SWB for less well educated samples within developing countries. We examined the moderating effect of education not only within developing countries but also within developed ones.

Year of data collection. To capture economic trends that increased over time and affected the income-SWB relation that were not described by the potential moderating variables illustrated above, we included the year of data collection as a separate moderator of the income-SWB relation.

Method

Literature search

Three strategies were applied to identify suitable primary studies on the relationship between income and SWB for the current meta-analysis: (1) Studies were identified searching the electronic databases PsycINFO, PsycARTICLES, ScienceDirect, and MEDLINE, using different search terms for SWB (i.e., *subjective well-being*, *happiness*, *life satisfaction*, *positive affect*, *negative affect*) and income (i.e., *income*, *wealth*, *money*, *assets*, *poverty*). The literature search was conducted in March 2014 and yielded 3,985 hits overall. (2) Suitable primary studies from the bibliographies of the previous meta-analyses and reviews were added, resulting in 19 additional primary studies. (3) To reduce publication bias, we sent requests for unpublished data to the Society for Personality and Social Psychology (SPSP) listserv, the International Society for the Study of Individual Differences (ISSID) listserv, and the German Psychological Society (DGPs) listserv. We also sent personal requests to 24 experts in the field. We received six additional datasets, including two unpublished studies. The final body of literature comprised 4,011 studies in total that were evaluated according to the inclusion criteria. Figure 1 shows the process of literature search for the current study.

--- FIGURE 1 ---

Inclusion criteria

Primary studies that met the following set of criteria were eligible for the meta-analysis:

1. SWB was defined according to Diener (1984) and assessed as overall SWB, life satisfaction, quality of life (when clear reference to SWB was indicated), domain satisfaction (when composite score of different life domains reflected overall life satisfaction), happiness, positive affect, negative affect, or affect balance. Studies assessing different concepts (e.g., psychological well-being, Ryff, 1989; mental health, Vaillant, 2003), general health, or clinical aspects (e.g., depressive symptoms) were not included.
2. SWB was measured by standardized and validated scales which showed sufficient face validity. Studies with author-created measures were included, if considerable similarity to well-known standardized scales was evident.
3. Studies measured objective income or wealth (e.g., household income, per capita household income, or personal income). Socioeconomic status, material wealth, expenditures or monthly spending were not included in the current analysis.
4. Publications focused on adults and non-clinical samples.
5. Studies reported sample sizes and zero-order correlations between income and SWB or data that could be converted to a zero-order correlation.
6. Data were conducted within single nations and in cross-sectional design to allow for the assignment of country- and year-dependent macroeconomic measures.
7. Collection of data on income and SWB did not exceed a period of two years to allow for the assignment of year-dependent macroeconomic measures.
8. Publications reported quantitative research. Theoretical publications, qualitative and experimental research were not included.
9. Publications were in English or German language.

After excluding all ineligible studies, a total of 135 primary studies remained for the current meta-analysis.

Coding

The studies selected for the meta-analysis were coded by four coders, including the first author of this study. The coding process was based on a standardized coding scheme covering the information described in the following sections. All coders were trained for the coding process and the use of the standardized coding manual by the first author.

Bibliographic information

First, we documented bibliographic information about each primary study including a consecutive study ID number, the name(s) of the author(s), and title and year of the publication. Moreover, we added a description specific for each sample as well as a consecutive sample ID number, and included a number for each effect size reported for the sample (for all coded information see Appendix 1).

Study characteristics

Regarding study characteristics, we first documented the income measure (e.g. household or personal income, wealth). Moreover, we recorded the particular SWB scales applied for each primary study and coded the assessed SWB component (i.e., CWB, AWB). Information on reliability of the scales was derived either directly from the studies or from primary literature about the scales the authors referred to. If information on reliability was provided neither for the particular sample nor from suitable references, we obtained the reliability coefficients from other primary studies included our dataset using the identical SWB scale. If different reliability coefficients were reported for a scale, we selected the highest one pursuing a conservative approach. No reliability coefficient was included for single-item measures.

The sample size and mean age were documented for each sample. Gender was coded in percent males. The level of educational attainment was coded according to the International Standard Classification of Education (ISCED 2011; UNESCO Institute of Statistics, 2012), a reference classification for international comparison of educational systems, providing standardized information on educational levels ranging from 0 (Less than primary education) to 8 (Doctoral or equivalent level). We assigned the corresponding ISCED level for each sample based on information about the specific population it was derived from (e.g., college students), or the reported share of different educational qualifications within a sample. The year of data collection was extracted from the primary studies or substituted using the average time interval between collection and publication within our dataset (i.e., 3 years), if information was not reported. For studies that collected data over a period of two years, we assigned the final one as the year of data collection. Finally, we documented the country the study was conducted in.

Effect size

As effect sizes describing the relationship between income and SWB, we documented the Pearson product-moment correlations reported for each sample. If no zero-order correlations were provided, we computed them using all available information (e.g., *F*-values, *t*-values, point-biserial correlation, Spearman rank-order correlation coefficient, χ^2-values or R^2; Cooper, Hedges, & Valentine, 2009). For some effect sizes we found an inverse polarity due to the applied SWB scale or measured SWB component (i.e., lower values indicated higher SWB) and reversed the algebraic sign.

Most of the studies provided multiple effect sizes. As the meta-analytic procedure applied for the current study as described below accounted for dependencies within samples, all available effect sizes were included in the analyses (Van den Noortgate, López-López, Marín-Martínez, & Sánchez-Meca, 2013). However, the model applied for the meta-analysis did not allow for effect sizes being obtained over various years. Three studies (Abele, Hagmaier, & Spurk, 2016; Judge & Watanabe, 1993; Lucas & Schimmack, 2009) were based on longitudinal survey data and reported multiple effect sizes for several consecutive waves of the surveys. According to the meta-analytical model only one survey wave could be considered for the analysis. As two of the studies were based on the identical sample in both waves, we chose the first wave of each survey. The sample of the third study was based on a longitudinal sample, including additional participants at each wave. We decided to include the effect sizes related to the wave comprising the largest sample size to obtain maximum information for our meta-analysis.

Independence of the included samples is an essential precondition for meta-analyses and samples should not be included in the dataset more than once. So after the coding of all study-related information was finished, the dataset was checked for duplicate studies. Some primary studies were based on the same samples and hence, the same effect sizes were reported in multiple publications. To avoid including non-independent samples, we selected only one of the available sources for the meta-analysis, preferring the most extensive one.

Macroeconomic variables

For each sample, we included macroeconomic indicators for national wealth and income inequality. As a measure of national wealth, we employed the national gross domestic product (GDP), reflecting the total value of all goods and services produced in a country. For our study, we included GDP per capita in current US dollars (all data from the World Bank), averaged across the last five years

preceding the data collection for each sample to account for the progress of economic variables over time. Data were available for 173 samples. GDP was log-transformed for the analyses.

We included the Gini coefficient as an indicator of income inequality. The Gini coefficient measures the deviation of the income distribution within a particular country from a perfectly equal distribution, ranging between 0 for perfect equality and 100 for perfect inequality (all data from UNU-WIDER, OECD, World Bank, and German Socio-Economic Panel). Data were available for 151 samples.

Furthermore, we considered the national economic situation of each country included in the dataset and assigned all samples to the categories *Developed economies* or *Economies in transition and developing economies* based on the economic conditions of their country (United Nations, 2020). Data were available for all 185 samples.

Interrater agreement

For evaluation of the coding, 80 studies were double-coded by one of the coders. The interrater agreement was 99% on average, ranging between 100% for the coding of effect sizes, sample sizes, income measures, SWB scales, age, gender, educational attainment, and country, 97.5% for coding of reliability of the SWB scale and year of data collection, and 95% for the coding of SWB components. Disagreements between the codings were solved by discussion.

Meta-analytic procedure

Multilevel meta-analytic approach

For the current study we applied a three-level variance-known random effects meta-analysis as described in M. W.-L. Cheung (2015). At Level 1 we included all effect sizes weighted by the sample size, at Level 2 we considered the multiple outcomes per sample, and at Level 3 the samples. This allowed us to account for sampling variation for each effect size at Level 1, within-sample variation due to the application of different SWB or income measures at Level 2, and between-sample variation at Level 3. Computations were performed using the software Mplus 7.3 (Muthén & Muthén, 1998-2012) applying robust maximum-likelihood estimation and full information maximum-likelihood. Reliability was included as a control variable at Level 2. Effect sizes and reliability coefficients were Fisher-transformed and all variables were standardized for the analyses.

Moderator analyses

Beyond the estimation of the mean population effect, we were interested in the effect of potential moderator variables. Continuous moderator variables were included in the model as predictor variables. Sample characteristics (i.e., gender, age, educational attainment, and year of data collection) as well as macroeconomic variables (i.e., GDP, Gini) were included at Level 3 of the multilevel model.

Moreover, we conducted separate analyses for categorical moderator variables such as the SWB components (CWB vs. AWB) and the national economic situation (developed economies vs. economies in transition and developing economies). As many samples provided effect sizes corresponding to multiple moderator subgroups (i.e., correlations between income and different measures for CWB and AWB) we needed to relax the assumption of independence and assigned all available effect sizes to their respective subgroup. For each moderator subgroup we estimated the mean effect size and examined the pattern of effects arising from the moderator variables included in the model. Non-overlapping confidence intervals for the estimated mean effects indicated statistically significant differences between the moderator subgroups.

Analysis of publication bias

Publication bias may affect meta-analytical findings and limit their validity. This can be caused especially by deploying a biased subset of all relevant primary studies for the meta-analysis, or by including studies with predominantly significant results, as these are more likely to be published, and thus more readily available for meta-analyses (Borenstein, Hedges, Higgins, & Rothstein, 2009). To test potential publication bias for the main meta-analysis and to confirm the robustness of our findings, we first computed the fail-safe *N* based on all included effect sizes, yielding an estimate of the number of unidentified studies that would be needed to include in the meta-analysis to decrease its results to a non-significant level (Rosenthal, 1979). Furthermore, we observed the funnel plot, which shows all included effect sizes against their corresponding standard errors (Light & Pillemer, 1984; Vevea & Hedges, 1995). In the absence of publication bias, the plot would be funnel shaped and the effect sizes would spread symmetrically around the mean effect size. As recommended by Fernández-Castilla, Declercq, Jamshidi, Beretvas, Onghena, and Van den Noortgate (2020) for three-level meta-analyses with multiple outcomes per sample, we analyzed a funnel plot of all effect sizes as well as a funnel plot of the sample mean effects.

Sensitivity analyses

For further corroboration of the robustness of our meta-analytical findings we studied the impact of extreme sample sizes, outliers among the included effect sizes and overrepresented countries on our results.

Since some of the studies obtained by the literature search were based on extremely large samples, we excluded the 5% largest samples from the dataset and examined the resulting mean effect. Analogously, we analyzed the impact of outliers regarding the magnitude of the effect sizes by removing the highest 5% and the lowest 5% of the Fisher-transformed effect sizes from the dataset. Finally, as overrepresented countries may affect the mean effect and variance components as well as distort the effects of macroeconomic variables, we examined whether the dataset for the meta-analysis was imbalanced because some countries may have contributed a disproportional share of data. We found a predominant amount of US as well as German samples in our dataset providing 27.0% and 29.6% of the effect sizes, respectively (see Table 1). Therefore, we examined the meta-analytical results for the remaining dataset after excluding all samples from the United States and Germany.

--- TABLE 1 ---

Results

Descriptive findings

Employing the search strategy as described above yielded 135 primary studies that matched the inclusion criteria and were included in the meta-analysis. The primary studies provided 185 independent samples with k = 385 effect sizes that were coded for the meta-analysis. The overall sample included a total of N = 209,632 participants from 34 countries (countries are listed in Table 1). Data for the primary studies were conducted between 1973 and 2013. While 16 samples consisted completely of female participants, 10 samples consisted completely of male participants; the share of male participants across the overall sample was 35.9%. The average age of the samples was 41.16 years, with participants ranging between 18 and 81 years. Educational attainment ranged between primary education and doctoral or equivalent level, with the majority of the sample (39.7%) holding a Bachelor's degree or equivalent qualification (descriptive statistics are given in Table 2). The number of samples and effect sizes included in each meta-analytic analysis are given Table 3.

--- TABLE 2 ---

--- TABLE 3 ---

Main analysis

Population correlation

The estimated average effect was Fisher's z = 0.147 (*SE* = 0.008, $p \leq .001$, 95% CI [0.132, 0.162]; see Table 4) corresponding to a statistically significant mean population correlation between income and SWB of $\rho = .146$. We found significant heterogeneity between the true effects of the included samples ($Q(384) = 679.222$, $p \leq .001$). Both the between-sample variation ($\tau^2_{(3)} = 0.007$, $\chi^2(1) = 35.579$, $p \leq .001$) and the within-sample variation ($\tau^2_{(2)} = 0.003$, $\chi^2(1) = 34.653$, $p \leq .001$) were significant, supporting the three-level structure of the meta-analytic model. While the application of different measures for obtaining income and SWB within the samples accounted for 26.6% of the total variation ($I^2_2 = 0.266$, 95% CI [0.072, 0.460]), effects between samples accounted for 64.4% of the total variation ($I^2_3 = 0.644$, 95% CI [0.452, 0.837]), and within-sample known sampling variance accounted for 9.0% of the total variation.

Moderator results for the main meta-analysis

Regarding the observed sample characteristics, only age was clearly a valid moderator of the income-SWB association ($b = 0.019$, *SE* = 0.010, $p \leq .05$), meaning that the relation between income and SWB increased with the age of the samples. Apart from that, we found a weakly significant effect for the year of data collection *(*$b = 0.014$, *SE* = 0.008, $p = .085$), indicating that economic trends slightly increased the income-SWB correlation over time. Sample characteristics explained 14.3% of the heterogeneity variance at Level 3. While we did not find a moderating effect of GDP ($b = -0.003$, *SE* = 0.009, $p = .727$), the Gini did play a significant role for the income-SWB association ($b = 0.025$, *SE* = 0.009, $p \leq .01$) and explained additional 14.3% heterogeneity variance at Level 3. Rising income inequality was thus associated with an increase in the correlation between income and SWB. When we controlled for GDP, the results confirmed the clear moderating effect of income inequality (GDP: $b = 0.008$, *SE* = 0.010, $p = .448$; Gini: $b = 0.027$, *SE* = 0.010, $p \leq .01$). However, after including both macroeconomic indicators, the effect of the year of data collection disappeared, indicating that the underlying economic trends were completely covered by the macroeconomic variables GDP and Gini.

--- TABLE 4 ---

Moderator analyses

SWB components

For the moderator subgroup CWB, the estimated average effect was Fisher's z = 0.163 (SE = 0.012, $p \leq .001$, 95% CI [0.140, 0.186], 90% CI [0.143, 0.182]; see Table 5) with a mean population correlation between income and CWB of ρ = .162. None of the sample characteristics showed a moderating effect. Again, GDP did not affect the income-CWB association (b = 0.004, SE = 0.016, p = .812), while the Gini coefficient was a significant moderator (b = 0.037, SE = 0.012, $p \leq .01$), explaining additional 15.4% of the heterogeneity variance at Level 3. When controlling for GDP, the Gini coefficient again was a significant moderator (GDP: b = 0.015, SE = 0.016, p = .325; Gini: b = 0.041, SE = 0.013, $p \leq .01$).

The estimated average effect for the moderator subgroup AWB was Fisher's z = 0.127 (SE = 0.009, $p \leq .001$, 95% CI [0.110, 0.144], 90% CI [0.113, 0.141]) yielding a mean population correlation between income and AWB of ρ = .126. It was significantly moderated by the age of the samples (b = 0.027, SE = 0.010, $p \leq .01$), explaining 20.0% of the Level 3 heterogeneity variance. Again, we found no moderating effect of GDP (b = -0.012, SE = 0.010, p = .241). The Gini, however, showed a significant effect either as a single macroeconomic moderator (b = 0.020, SE = 0.008, $p \leq .05$) or with GDP controlled for (GDP: b = -0.004, SE = 0.011, p = .731; Gini: b = 0.018, SE = 0.009, $p \leq .05$). After including the macroeconomic variables, we found a significant moderating effect for gender (b = -0.017, SE = 0.008, $p \leq .05$). Yet, neither gender nor the Gini explained additional Level 3 heterogeneity variance beyond the average age of the samples.

Considering the 90% CIs for both subgroups which did not overlap, we found a weakly moderating effect for the observed SWB components, indicating a stronger relevance of income for CWB than for AWB. Moreover, income inequality was a significant moderator of the income-CWB association, while its effect was not practically relevant for the income-AWB relation. Interestingly, the average age of the samples affected the magnitude of the relationship of income with AWB but not with CWB. The effect of the gender distribution of the samples on the income-AWB association was not practically relevant.

--- TABLE 5 ---

National economic situation

We found an average effect for samples from developed economies of Fisher's z = 0.145 (SE = 0.007, $p \leq .001$, 95% CI [0.131, 0.159]; see Table 6) with a mean population correlation between income and SWB of ρ = .144. Regarding the sample characteristics, only gender showed a statistically weakly significant moderating effect (b = 0.013, SE = 0.007, p = .080) without increasing the amount of explained variance. None of the macroeconomic variables played a role for the income-SWB association – neither as single moderators (GDP: b = -0.013, SE = 0.010, p = .167; Gini: b = 0.002, SE = 0.007, p = .824) nor when considered simultaneously in the model (GDP: b = -0.016, SE = 0.010, p = .112; Gini: b = 0.006, SE = 0.007, p = .429).

For samples from economies in transition and developing economies, the average effect was Fisher's z = 0.143 (SE = 0. 018, $p \leq .001$, 95% CI [0.108, 0.178]) with a mean population correlation between income and SWB of ρ = .142. Age significantly moderated the income-SWB relation (b = 0.070, SE = 0.021, $p \leq .001$), explaining the entire Level 3 heterogeneity variance. As no residual heterogeneity variance was left after the inclusion of the sample characteristics, we did not examine further moderator variables.

Comparing developed economies to economies in transition and developing economies, we did not find significant variation between the estimated average effects. However, while age moderated the income-SWB relationship for economies in transition and developing economies, the effect of gender found for developed economies was not practically relevant. For samples from developed countries neither of the macroeconomic variables played a statistically significant role for the income-SWB association.

--- TABLE 6 ---

SWB components and national economic situation

Examining the income-CWB association in developed economies, the estimated average effect was Fisher's z = 0.162 (SE = 0.011, $p \leq .001$, 95% CI [0.141, 0.184], 90% CI [0.144, 0.180]; see Table 7) corresponding to a mean population correlation of ρ = .161. None of the sample characteristics or macroeconomic variables were significant moderators.

For the income-CWB association in economies in transition and developing economies, the average effect was Fisher's z = 0.153 (SE = 0.029, $p \leq .001$, 95% CI [0.097, 0.209], 90% CI [0.106, 0.200]) yielding a mean population correlation of ρ = .152. Age was a significant moderator (b = 0.097,

SE = 0.028, $p \leq .001$), explaining 44.0% heterogeneity variance at Level 3. Again, GDP did not affect the income-CWB relationship, but the Gini coefficient proved to be a significant moderator (*b* = 0.092, *SE* = 0.031, $p \leq .01$) explaining the entire residual heterogeneity variance at Level 3.

The average effect for the income-AWB relation in developed countries was Fisher's *z* = 0.128 (*SE* = 0.009, $p \leq .001$, 95% CI [0.111, 0.144], 90% CI [0.113, 0.142]) with a mean population correlation of $\rho = .127$. None of the sample characteristics showed a moderating effect. Despite a significant negative moderating effect of GDP on the income-AWB relation (*b* = -0.020, *SE* = 0.009, $p \leq .05$), no additional Level 3 heterogeneity variance was explained. Income inequality was not a significant moderator for this subgroup, neither as a single moderator (Gini: *b* = -0.005, *SE* = 0.009, $p = .563$) nor when considered together with GDP (GDP: *b* = -0.020, *SE* = 0.009, $p \leq .05$; Gini: *b* = -0.001, *SE* = 0.008, $p = .899$).

Examining the income-AWB association in economies in transition and developing economies, the average effect was Fisher's *z* = 0.129 (*SE* = 0.020, $p \leq .001$, 95% CI [0.090, 0.168], 90% CI [0.097, 0.162]) yielding a mean population correlation $\rho = .128$. As there was no significant Level 3 heterogeneity variance for this subgroup, we did not analyze any moderator variables.

Examining the interaction between SWB components and national economic situation, we found a weakly significant moderator effect of the SWB component for developed economies due to the non-overlapping 90% CIs of both subgroups, indicating a stronger relationship between income and CWB than between income and AWB for wealthier economies. Macroeconomic variables were not practically relevant as moderators within developed economies, regardless of the assessed SWB component. By contrast, income inequality was a strong moderator for the income-CWB relation within less wealthy economies, as was the average age of the samples. Hence, for poorer economies, income was stronger related to CWB with rising income inequality and people's age.

A summary of the results of all moderator analyses can be found in Table 8.

--- TABLE 7 ---

--- TABLE 8 ---

Publication Bias

Estimation of the fail-safe *N* resulted in additional 726,104 null findings that would be needed to decrease the effects of the current meta-analysis to a non-significant level. As this number of unidentified effect sizes clearly exceeded the number of coefficients included in our study, we

assume our meta-analytic results to be highly robust against file-drawer bias. The funnel plots of all effect sizes as well as of the sample mean effects are given in Figure 2. Effect sizes were distributed symmetrically around their mean in both plots, again indicating the robustness of the meta-analytic findings against publication bias.

--- FIGURE 2 ---

Sensitivity analyses

We examined the robustness of our meta-analytical findings regarding the potential impact of extreme sample sizes and outliers among the included effect sizes and overrepresented countries, and compared the results to those of the main meta-analysis. Overall, the sensitivity analyses yielded a comparable magnitude of estimated average effects and confirmed the effect pattern of continuous moderating variables. The sensitivity analysis regarding outliers among the effect sizes yielded a comparable average correlation between income and SWB and a moderating effect of income inequality, which remained statistically significant at the 10% level even though we restricted the range of the dependent variable. Overall, the sensitivity analyses corroborated the meta-analytic results of our study. For detailed results, see Table 9.

--- TABLE 9 ---

Discussion

The purpose of the present study was to estimate the overall average relation between income and SWB and to investigate the particular role of national wealth and income inequality and different sample characteristics as moderating variables. The two separate SWB components (i.e., CWB vs. AWB), as well as the national economic situation of the included countries (i.e., developed economies vs. economies in transition and developing economies) were explicitly taken into account to examine potential differential effects between these subgroups.

Based on 135 studies providing 185 samples and 385 effect sizes, we found an overall average correlation between income and SWB of ρ = .146, which is consistent with previous research reporting a significant, but small effect (e.g., Arthaud-Day & Near, 2005; Myers, 2000; Tan et al., 2020). Hence, approximately 2% of the variance of SWB can be attributed to differences in people's incomes. This indicates that despite the common believe in the substantial role income plays for people's happiness, its effect is rather limited. According to Lyubomirsky, Sheldon, and Schkade

(2005), happiness is largely genetically determined (approx. 50%) or caused by activities people engage in (e.g., exercising, striving to achieve one's goals; approx. 40%), while only about 10% of the SWB variance can be attributed to circumstantial factors like people's income, marital status, health, or religious affiliation. This explains the typically small correlation between income and SWB as found in the current study and previous literature. Nevertheless, our finding confirms the assumption that people who achieve higher incomes are happier than those achieving lower incomes (Diener & Oishi, 2000; Diener, Sandvik, Seidlitz, & Diener, 1993; Sacks, Stevenson, & Wolfers, 2012). Regarding macroeconomic indicators, we did not find evidence for national wealth to moderate the income-SWB correlation as opposed to previous literature (Schyns, 2002; Tan et al., 2020). Instead, we found a stronger relation between income and SWB, when income inequality increased. Contrasting previous findings by Tan et al. (2020) who did not find a significant effect of income inequality, this supports the assumption that rising income inequality enhances social comparison and thereby increases the role of people's income for their SWB (F. Cheung & Lucas, 2016; Hagerty, 2000). Our results clearly demonstrate that not national wealth, but the distribution of incomes within a nation plays a key role for the income-SWB relation. Contributing to the discussion raised by Richard Easterlin who posited that relative income determines SWB, we found that inequality increases the relation between income and CWB in particular, and above all, in developing countries and countries in transition (Easterlin, 1974; Sacks et al., 2012). Furthermore, the effect of income on SWB depends on people's age, as we found evidence for an increase in the income-SWB association with progressing age of the samples. This contrasts previous findings indicating a weaker relation between income and SWB for older samples (F. Cheung & Lucas, 2015; Pinquart & Sörensen, 2000; Topa et al., 2011). Moreover, the disappearance of the effect of the year of data collection after the inclusion of income inequality and national wealth indicates that both macroeconomic variables entirely capture potential economic trends affecting the income-SWB relationship over time.

Our results revealed a weak moderating effect of the SWB components, with a stronger correlation between income and CWB than between income and AWB as described by previous studies (e.g., Diener et al., 2010; Kahneman et al., 2004). Income inequality was a substantial moderator of the relation between income and CWB, but not for AWB. This can be explained by increased income inequality enhancing social comparison processes that affect the cognitive evaluation mechanism associated with people's CWB. Again, we did not find a moderating effect of national wealth for either SWB component. However, the role of income for AWB increased with the mean age of the samples, while its role for CWB was not affected by people's age. Income seems to be equally important for people's evaluation of their lives regardless of their particular age, as it defines living conditions and personal chances over the entire life course. However, especially in later life, higher

income contributes to people's AWB for example as it offers more opportunities to participate in social life and thereby improves positive and attenuates negative feelings.

Our analyses found no evidence for a moderating effect of the national economic situation on the average income-SWB relation. As previous research described a stronger income-SWB association for poorer countries (Arthaud-Day & Near, 2005; Howell & Howell, 2008, Veenhoven, 1991), this result is rather surprising. We found no moderating effect of both macroeconomic indicators on the income-SWB association for developed economies. In other words, for generally affluent countries, neither their level of national wealth nor the distribution of incomes within the country are relevant for the relation between income and SWB. For economies in transition and developing economies, the mean age of the samples strongly moderated the income-SWB relation. These countries typically lack of well-developed health and welfare systems, which makes income more relevant especially for people of increasing age as they need to cover their living expenses and health expenditures without sufficient social security benefits. As age explained the entire heterogeneity variance of the income-SWB correlation for poorer countries, we assume that there are no additional factors affecting this relationship beyond this demographic variable.

As we found differential effects for the SWB components as well as for the levels of national economic situation, it was straightforward to examine the interaction between both moderator variables. We found a tendentially higher association between income and CWB than between income and AWB for developed countries, again supporting previous research suggesting income to be more relevant for people's life satisfaction than for their emotional condition (Diener et al., 2010; Diener et al., 2013; Kahneman et al., 2004). Whereas Howell and Howell (2008) reported a stronger effect of income on quality of life and life or domain satisfaction as compared to happiness for developing countries, we did not find a significant moderating effect of the SWB component for economies in transition and developing economies. Our results indicate that for poorer countries, income is equally important for both, people's cognitive evaluation of their lives and their AWB. Interestingly, while income inequality crucially affected the income-CWB relation for poorer countries, neither of the macroeconomic indicators was of practical relevance as a moderator within the affluent countries. This finding is highly relevant for the understanding of the results regarding the main meta-analysis and the moderator analysis for CWB as described above: While we found a significant moderating effect of income inequality for both, the more detailed analyses based on the combined subgroups (i.e., SWB components and national economic situation) showed that this effect exclusively appeared within poor countries. Although samples and effect sizes from developing economies and economies in transition were practically underrepresented in the main meta-analysis, the effect of income inequality spilled over to the overall sample. Hence we can deduce that rising

income inequality enhances social comparison in particular for the poor, increasing the meaning of their income for their satisfaction with life, and that the effect is so powerful that it even prevails within a dataset including only a minor share of samples from poor countries.

Regarding the sample specific characteristics, only the mean age of the samples repeatedly significantly moderated the relation between income and SWB. While increasing age was in general associated with a higher income-AWB relation, it also increased the income-CWB relation specifically for economies in transition and developing economies. We did not find clear moderating effects of the gender distribution and the educational level of the samples, contradicting previous findings (Haring et al., 1984; Howell & Howell, 2008; Pinquart & Sörensen, 2000). As the weakly statistically significant effect of the year of data collection found for the main analysis was completely borne by income inequality and national wealth, it can be assumed that there are no additional economic trends affecting the income-SWB association over time that are not covered in the analysis.

The analyses of publication bias indicate robustness of the meta-analytic findings against bias due to selective reporting and publication procedures preferring significant outcomes. The estimated fail-safe *N* indicates that an extensive number of insignificant studies would be needed to decrease the average effect of the main meta-analysis to a non-significant level. Moreover, the funnel plots showed symmetrical distributions of the effect sizes around their means, indicating the absence of distortion due to publication bias.

Apart from that, sensitivity analyses support the robustness of our findings with respect to a potential effect of outliers regarding sample sizes or effect sizes, and overrepresented countries. The magnitude and pattern of effects are comparable to the main meta-analysis confirming the independence of our findings from bias due to extreme sample sizes and effect sizes, as well as countries providing a large share of effect sizes.

Strengths and limitations

The current study integrates the extensive literature on the relationship between income and SWB. To deal with the complex and nested structure of the included data, we applied a three-level variance-known random effects meta-analysis, allowing us to take the different sources of heterogeneity at each level of the model into account. Our study includes comprehensive moderator analyses and is the first to demonstrate that not national wealth, but income inequality significantly affects the income-SWB relation, and that this effect is primarily due to developing countries and countries in transition.

Besides these strengths, there are several limitations of the current study. We did not find a moderating effect of the national economic situation on the average income-SWB relation. Due to the limited amount of available data, we decided to include both, economies in transition as well as developing economies into one subgroup. Observing these separately would have offered the possibility to detect a potential moderating effect between the extreme groups (i.e., developed vs. developing economies). Yet, to base the analyses on such a small number of effect sizes would have led to insufficient statistical power to detect small effects in the data and hence, raised difficulties for complex statistical modelling.

Moreover, due to the limited amount of available data we restricted the multilevel model applied for the current study to the three-level structure as described above. Future research might further investigate potential heterogeneity between countries and its effect on the income-SWB relation.

Conclusion

The current meta-analysis confirms the strength of the income-SWB association as described by prior research. Furthermore, it shows a tendency towards a stronger relationship between income and CWB than between income and AWB. Compared to the previous literature, national wealth is not a relevant moderator of the income-SWB relation, but the distribution of incomes within the nations clearly affects the strength of the relationship between income and SWB as well as CWB, but not AWB. Remarkably, income inequality is a significant moderator of the relation between income and CWB in economies in transition and developing economies, but not in developed economies. In the analysis based on all countries, the moderating role of income inequality is therefore presumably driven by this strong effect within economies in transition and developing economies. However, we find no significant difference in the average income-SWB association between developed economies versus economies in transition and developing economies. While we observe a significant moderating effect of age, the evidence for gender and the year of data collection as moderators is less clear, and we find no evidence for a moderating effect of educational attainment.

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Table 1

List of countries included in the analyses

Country	Number of samples	Number of effect sizes
Australia[a]	2	5
Belarus[b]	1	1
Belgium[a]	1	2
Brazil[b]	1	1
Canada[a]	7	15
China[b]	10	17
Croatia[a]	3	5
Estonia[a]	1	1
Germany[a]	16	114
Ghana[b]	1	2
Hong Kong SAR[b]	5	6
India[b]	7	19
Iran (Islamic Republic of)[b]	2	2
Japan[a]	3	3
Latvia[a]	1	1
Lithuania[a]	2	4
Malaysia[b]	1	1
Mexico[b]	3	3
Netherlands[a]	3	4
New Zealand[a]	1	3
Nicaragua[b]	5	5
Pakistan[b]	1	2
Republic of Korea[b]	4	4
Russian Federation[b]	1	1
Singapore[b]	1	1
South Africa[b]	6	10
Spain[a]	4	6
Sweden[a]	2	8
Taiwan Province of China[b]	9	11
Thailand[b]	2	3
Turkey[b]	5	9
United Kingdom[a]	4	10
United States[a]	69	104
Venezuela (Bolivarian Republic of)[b]	1	2
Total	185	385

Note. [a]Developed economies. [b]Economies in transition and developing economies.

Table 2

Correlation table for all variables for the overall sample

	1	2	3	4	5	6	7	n[a]	M[b]	*SD*
1. Effect size r[c]								385	0.15	.13
2. Reliability[c]	-.071							242	1.22	.21
3. Gender[d]	.019	.050						349	35.90	21.86
4. Age[e]	.130*	-.019	.207**					303	41.16	13.71
5. Education[f]	-.025	.023	-.301**	-.677**				252	5	
6. Year[g]	.033	.071	-.198**	-.573**	.450**			385	2006	
7. GDP[h]	.006	-.089	-.324**	-.143*	.478**	.225**		371	9.71	1.29
8. Gini	.165**	.139*	.378**	.250**	-.453**	-.187**	-.645**	343	34.64	6.98

Note. [a]Number of effect sizes with available information. [b]Mean for continuous variables, median for categorical variables. [c]Fisher transformed. [d]Gender in % males. [e]Mean age. [f]ISCED level. [g]Year of data collection. [h]Five-year average GDP, log-transformed.

Table 3

Numbers of samples and effect sizes included in the analyses

Analysis	Number of samples	Number effect sizes
Main analysis	185	385
Moderator analysis: SWB components		
CWB	118	151
AWB	98	214
Moderator analysis: National economic situation		
Developed economies	119	285
Economies in transition and developing economies	66	100
Moderator analysis: SWB components and national economic situation		
CWB in developed economies	79	110
CWB in economies in transition and developing economies	39	41
AWB in developed economies	67	167
AWB in economies in transition and developing economies	31	47
Sensitivity analyses		
Sample size	175	368
Magnitude of effect sizes	169	347
Number of effect sizes – USA excluded	116	281
Number of effect sizes – Germany excluded	169	271
Number of effect sizes – USA and Germany excluded	100	167

Note. Numbers of samples and effect sizes included in the main meta-analysis and moderator subgroups.

Table 4

Results of the three-level meta-analysis models for the main meta-analysis

Level	Model 1	Model 2	Model 3	Model 4	Model 5
Level 2					
Reliability		0.000 (0.006)	0.000 (0.006)	-0.002 (0.006)	-0.002 (0.006)
(Residual) variance	0.003 (0.001) *	0.003 (0.001) *	0.003 (0.001) *	0.003 (0.001) *	0.003 (0.001) *
Level 3					
Mean effect (intercept[a])	0.147 (0.008) ***	0.144 (0.007) ***	0.144 (0.007) ***	0.141 (0.007) ***	0.141 (0.007) ***
Gender		0.003 (0.008)	0.003 (0.008)	0.001 (0.008)	0.002 (0.008)
Age		0.019 (0.010) *	0.020 (0.009) *	0.021 (0.010) *	0.019 (0.009) *
Education		0.000 (0.015)	0.002 (0.013)	0.008 (0.014)	0.005 (0.013)
Year		0.014 (0.008) †	0.014 (0.008) †	0.013 (0.008) †	0.013 (0.008)
log GDP			-0.003 (0.009)		0.008 (0.010)
Gini				0.025 (0.009) **	0.027 (0.010) **
(Residual) variance	0.007 (0.002) ***	0.006 (0.002) ***	0.006 (0.002) ***	0.005 (0.001) ***	0.005 (0.001) ***
R_2^2		0.0%	0.0%	0.0%	0.0%
R_3^2		14.3%	14.3%	28.6%	28.6%

Note. Regression coefficients with standard errors in parentheses. At Level 1, the intercept is fixed at 0.000, the variance is fixed at 1.000. R_2^2 = Explained variance at Level 2. R_3^2 = Explained variance at Level 3. [a]Intercept for mixed-effects models with moderator variables.

†$p \leq 0.10$. * $p \leq 0.05$. ** $p \leq 0.01$. *** $p \leq 0.001$.

Table 5

Results of the three-level meta-analysis models for the moderator analysis: SWB components

Level	CWB					AWB				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Level 2										
Reliability		-0.006 (0.012)	-0.005 (0.012)	-0.005 (0.011)	-0.005 (0.011)		0.014 (0.006) *	0.014 (0.006) *	0.013 (0.006) *	0.013 (0.006) *
(Residual) variance	0.000 (0.000) **	0.000 (0.000) **	0.000 (0.000) **	0.000 (0.000) **	0.000 (0.000) **	0.002 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Level 3										
Mean effect (intercept[a])	0.163 (0.012) ***	0.163 (0.011) ***	0.164 (0.011) ***	0.159 (0.010) ***	0.160 (0.010) ***	0.127 (0.009) ***	0.127 (0.008) ***	0.126 (0.008) ***	0.124 (0.008) ***	0.124 (0.008) ***
Gender		0.004 (0.014)	0.005 (0.014)	0.004 (0.013)	0.006 (0.013)		-0.013 (0.008)	-0.016 (0.009) †	-0.016 (0.008) *	-0.017 (0.008) *
Age		0.021 (0.017)	0.020 (0.017)	0.021 (0.017)	0.018 (0.017)		0.027 (0.010) **	0.028 (0.010) **	0.024 (0.010) *	0.025 (0.010) *
Education		0.014 (0.024)	0.013 (0.022)	0.020 (0.022)	0.018 (0.022)		-0.003 (0.014)	0.001 (0.012)	0.001 (0.013)	0.002 (0.011)
Year		0.016 (0.014)	0.016 (0.015)	0.015 (0.013)	0.013 (0.014)		0.013 (0.009)	0.013 (0.009)	0.012 (0.009)	0.012 (0.010)
log GDP			0.004 (0.016)		0.015 (0.016)			-0.012 (0.010)		-0.004 (0.011)
Gini				0.037 (0.012) **	0.041 (0.013) **				0.020 (0.008) *	0.018 (0.009) *
(Residual) variance	0.013 (0.003) ***	0.012 (0.003) ***	0.012 (0.003) ***	0.010 (0.002) ***	0.010 (0.002) ***	0.005 (0.002) **	0.004 (0.001) ***	0.004 (0.001) **	0.004 (0.001) ***	0.004 (0.001) **
R_2^2		0.0%	0.0%	0.0%	0.0%					
R_3^2		7.7%	7.7%	23.1%	23.1%		20.0%	20.0%	20.0%	20.0%

Note. Regression coefficients with standard errors in parentheses. At Level 1, the intercept is fixed at 0.000, the variance is fixed at 1.000. R_2^2 = Explained variance at Level 2. R_3^2 = Explained variance at Level 3. [a]Intercept for mixed-effects models with moderator variables.

†$p \leq 0.10$. * $p \leq 0.05$. ** $p \leq 0.01$. *** $p \leq 0.001$.

Table 6

Results of the three-level meta-analysis models for the moderator analysis: National economic situation

Level	Developed economies					Economies in transition and developing economies[b]	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2
Level 2							
Reliability		-0.004 (0.005)	-0.004 (0.005)	-0.004 (0.005)	-0.005 (0.005)		-0.004 (0.023)
(Residual) variance	0.002 (0.001) **	0.002 (0.001) **	0.002 (0.001) **	0.002 (0.001) **	0.002 (0.001) **	0.009 (0.007)	0.009 (0.007)
Level 3							
Mean effect (intercept[a])	0.145 (0.007) ***	0.145 (0.009) ***	0.144 (0.008) ***	0.144 (0.008) ***	0.143 (0.008) ***	0.143 (0.018) ***	0.141 (0.016) ***
Gender		0.013 (0.007) †	0.014 (0.008) †	0.013 (0.008) †	0.013 (0.008) †		-0.017 (0.017)
Age		0.003 (0.010)	0.005 (0.010)	0.003 (0.010)	0.005 (0.010)		0.070 (0.021) ***
Education		0.006 (0.014)	0.009 (0.013)	0.007 (0.014)	0.010 (0.013)		0.020 (0.029)
Year		0.006 (0.008)	0.016 (0.011)	0.006 (0.008)	0.018 (0.011)		0.012 (0.018)
log GDP			-0.013 (0.010)		-0.016 (0.010)		
Gini				0.002 (0.007)	0.006 (0.007)		
(Residual) variance	0.003 (0.001) **	0.003 (0.001) *	0.003 (0.001) *	0.003 (0.001) *	0.003 (0.001) *	0.010 (0.004) *	0.006 (0.004)
R_2^2		0.0%	0.0%	0.0%	0.0%		
R_3^2		0.0%	0.0%	0.0%	0.0%		40.0%

Note. Regression coefficients with standard errors in parentheses. At Level 1, the intercept is fixed at 0.000, the variance is fixed at 1.000. R_2^2 = Explained variance at Level 2. R_3^2 = Explained variance at Level 3. [a]Intercept for mixed-effects models with moderator variables. [b]Residual heterogeneity variance at Level 3 not significant after inclusion of sample characteristics; no further moderating variables investigated.

†$p \leq 0.10$. * $p \leq 0.05$. ** $p \leq 0.01$. *** $p \leq 0.001$.

Table 7

Results of the three-level meta-analysis models for the moderator analysis: SWB components and national economic situation

Level	CWB in developed economies					CWB in economies in transition and developing economies[b]			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4
Level 2									
Reliability		-0.014 (0.011)	-0.014 (0.011)	-0.015 (0.011)	-0.015 (0.011)		0.010 (0.034)	0.006 (0.033)	0.033 (0.257)
(Residual) variance	0.000 (0.000) **	0.000 (0.000) †	0.000 (0.000) *	0.000 (0.000) *	0.000 (0.000) *	0.002 (0.006)	0.001 (0.006)	0.002 (0.006)	0.000 (0.003)
Level 3									
Mean effect (intercept[a])	0.162 (0.011) ***	0.163 (0.012) ***	0.164 (0.012) ***	0.162 (0.012) ***	0.162 (0.012) ***	0.153 (0.029) ***	0.152 (0.026) ***	0.151 (0.026) ***	0.170 (0.054) **
Gender		0.019 (0.013)	0.019 (0.013)	0.019 (0.013)	0.019 (0.013)		-0.016 (0.029)	-0.017 (0.028)	0.016 (0.178)
Age		-0.012 (0.018)	-0.014 (0.019)	-0.013 (0.019)	-0.014 (0.019)		0.097 (0.028) ***	0.102 (0.035) **	0.105 (0.041) **
Education		0.003 (0.027)	0.000 (0.029)	0.003 (0.028)	0.002 (0.030)		0.053 (0.037)	0.057 (0.041)	0.091 (0.155)
Year		0.009 (0.012)	0.003 (0.016)	0.010 (0.012)	0.007 (0.017)		0.017 (0.035)	0.017 (0.035)	0.039 (0.089)
log GDP			0.009 (0.017)		0.003 (0.018)			0.015 (0.030)	
Gini				0.011 (0.011)	0.010 (0.012)				0.092 (0.031) **
(Residual) variance	0.007 (0.001) ***	0.006 (0.001) ***	0.006 (0.001) ***	0.006 (0.001) ***	0.006 (0.001) ***	0.025 (0.012) *	0.014 (0.008) †	0.013 (0.008) †	0.000 (0.038)
R_2^2		0.0%	0.0%	0.0%	0.0%				
R_3^2		14.3%	14.3%	14.3%	14.3%		44.0%	48.0%	100.0%

continued…

Level	AWB in developed economies					AWB in economies in transition and developing economies[c]
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1
Level 2						
Reliability		0.007 (0.005)	0.006 (0.005)	0.007 (0.005)	0.006 (0.005)	
(Residual) variance	0.001 (0.000) *	0.001 (0.000) †	0.001 (0.000) †	0.001 (0.000) †	0.001 (0.000) †	0.012 (0.010)
Level 3						
Mean effect (intercept[a])	0.128 (0.009) ***	0.127 (0.010) ***	0.126 (0.009) ***	0.128 (0.009) ***	0.127 (0.009) ***	0.129 (0.020) ***
Gender		-0.001 (0.009)	0.002 (0.009)	0.000 (0.009)	0.002 (0.009)	
Age		0.018 (0.013)	0.019 (0.012)	0.019 (0.013)	0.019 (0.012)	
Education		0.005 (0.009)	0.009 (0.008)	0.005 (0.009)	0.009 (0.008)	
Year		0.007 (0.011)	0.021 (0.013)	0.006 (0.011)	0.021 (0.013)	
log GDP			-0.020 (0.009) *		-0.020 (0.009) *	
Gini				-0.005 (0.009)	-0.001 (0.008)	
(Residual) variance	0.003 (0.001) ***	0.003 (0.001) ***	0.003 (0.001) ***	0.003 (0.001) ***	0.003 (0.001) ***	0.005 (0.005)
R_2^2		0.0%	0.0%	0.0%	0.0%	
R_3^2		0.0%	0.0%	0.0%	0.0%	

Note. Regression coefficients with standard errors in parentheses. At Level 1, the intercept is fixed at 0.000, the variance is fixed at 1.000. R_2^2 = Explained variance at Level 2. R_3^2 = Explained variance at Level 3. [a]Intercept for mixed-effects models with moderator variables. [b]Residual heterogeneity variance at Level 3 not significant after inclusion of sample characteristics; no further moderating variables investigated. [c]No significant heterogeneity variance at Level 3; no moderating variables investigated.

†$p \leq 0.10$. * $p \leq 0.05$. ** $p \leq 0.01$. *** $p \leq 0.001$.

Table 8

Summary of the results of all moderator analyses

Analysis	*ρ* (CI)	Moderator variables					
		Gender	Age	Education	Year	GDP	Gini
Main analysis	0.146 (95% CI [0.131, 0.161])		•				•
Moderator analysis: SWB components							
CWB	0.162 (90% CI [0.142, 0.180])						•
AWB	0.126 (90% CI [0.113, 0.140])	•[a]	•				•[a]
Moderator analysis: National economic situation							
Developed economies	0.144 (95% CI [0.130, 0.158])	(•)[a]					
Economies in transition and developing economies	0.142 (95% CI [0.108, 0.176])		•			*not analyzed*[b]	
Moderator analysis: SWB components and national economic situation							
CWB in developed economies	0.161 (90% CI [0.143, 0.178])						
CWB in economies in transition and developing economies	0.152 (90% CI [0.106, 0.197])		•				•
AWB in developed economies	0.127 (90% CI [0.113, 0.141])					•[a]	
AWB in economies in transition and developing economies	0.128 (90% CI [0.097, 0.161])	*not analyzed*[c]					

Note. Population correlations between income and SWB and significant moderator variables found for the full model of the main meta-analysis and for each moderator subgroup. *ρ* = Population correlation. CI = Confidence interval. (•) = $p \leq 0.10$. • = $p \leq 0.05$. [a]Significant moderator variable but no additional explained variance. [b]Residual heterogeneity variance at Level 3 not significant after inclusion of sample characteristics; no further moderating variables investigated. [c]No significant heterogeneity variance at Level 3; no moderating variables investigated.

Table 9

Results of the three-level meta-analysis models for the sensitivity analyses

Level	Sample size					Magnitude of effect sizes				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Level 2										
Reliability		0.001 (0.005)	0.001 (0.005)	0.000 (0.005)	0.000 (0.006)		-0.001 (0.004)	-0.001 (0.005)	-0.002 (0.005)	-0.002 (0.005)
(Residual) variance	0.003 (0.001) *	0.003 (0.001) *	0.003 (0.001) *	0.003 (0.001) †	0.003 (0.001) †	0.001 (0.000) **	0.001 (0.000) **	0.001 (0.000) **	0.001 (0.000) **	0.001 (0.000) **
Level 3										
Mean effect (intercept[a])	0.148 (0.008) ***	0.145 (0.008) ***	0.145 (0.008) ***	0.141 (0.007) ***	0.141 (0.008) ***	0.143 (0.006) ***	0.140 (0.006) ***	0.140 (0.006) ***	0.139 (0.006) ***	0.139 (0.006) ***
Gender		0.005 (0.008)	0.004 (0.009)	0.003 (0.008)	0.004 (0.008)		0.002 (0.006)	0.002 (0.006)	0.001 (0.006)	0.001 (0.006)
Age		0.020 (0.010) *	0.021 (0.010) *	0.022 (0.010) *	0.020 (0.010) *		0.016 (0.008) *	0.016 (0.008) *	0.016 (0.008) *	0.016 (0.008) *
Education		0.000 (0.016)	0.001 (0.014)	0.009 (0.015)	0.005 (0.013)		0.001 (0.009)	0.002 (0.009)	0.004 (0.009)	0.004 (0.008)
Year		0.016 (0.009) †	0.016 (0.009) †	0.017 (0.009) †	0.016 (0.009) †		0.007 (0.006)	0.008 (0.006)	0.007 (0.006)	0.007 (0.007)
log GDP			-0.001 (0.010)		0.010 (0.010)			-0.003 (0.006)		0.002 (0.007)
Gini				0.027 (0.009) **	0.031 (0.010) **				0.010 (0.006) †	0.011 (0.007) †
(Residual) variance	0.008 (0.002) ***	0.007 (0.002) ***	0.007 (0.002) ***	0.006 (0.001) ***	0.006 (0.001) ***	0.003 (0.001) ***	0.002 (0.001) ***	0.002 (0.001) **	0.002 (0.001) ***	0.002 (0.001) ***
R_2^2		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
R_3^2		12.5%	12.5%	25.0%	25.0%		33.3%	33.3%	33.3%	33.3%

continued…

Level	Number of effect sizes – USA excluded					Number of effect sizes – Germany excluded				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Level 2										
Reliability		0.007 (0.007)	0.007 (0.007)	0.006 (0.006)	0.006 (0.007)		-0.008 (0.011)	-0.008 (0.011)	-0.010 (0.010)	-0.009 (0.010)
(Residual) variance	0.003 (0.001) *	0.003 (0.001) †	0.003 (0.001) †	0.003 (0.001) †	0.003 (0.001) †	0.006 (0.003) *	0.006 (0.003) *	0.006 (0.003) *	0.006 (0.003) *	0.006 (0.003) *
Level 3										
Mean effect (intercept[a])	0.145 (0.010) ***	0.136 (0.010) ***	0.135 (0.009) ***	0.133 (0.009) ***	0.134 (0.009) ***	0.148 (0.009) ***	0.148 (0.008) ***	0.148 (0.008) ***	0.148 (0.008) ***	0.148 (0.008) ***
Gender		0.002 (0.010)	0.001 (0.010)	-0.002 (0.010)	-0.001 (0.010)		0.003 (0.010)	0.002 (0.010)	0.000 (0.010)	0.001 (0.010)
Age		0.043 (0.011) ***	0.044 (0.011) ***	0.046 (0.011) ***	0.045 (0.011) ***		0.020 (0.011) †	0.020 (0.011) †	0.022 (0.011) *	0.021 (0.011) *
Education		0.008 (0.018)	0.012 (0.016)	0.022 (0.016)	0.020 (0.015)		0.004 (0.016)	0.005 (0.014)	0.009 (0.015)	0.007 (0.014)
Year		0.013 (0.010)	0.014 (0.010)	0.010 (0.009)	0.008 (0.010)		0.016 (0.009) †	0.016 (0.009) †	0.014 (0.008) †	0.014 (0.009)
log GDP			-0.009 (0.011)		0.010 (0.012)			-0.003 (0.010)		0.007 (0.011)
Gini				0.033 (0.010) **	0.038 (0.012) **				0.026 (0.010) **	0.029 (0.010) **
(Residual) variance	0.008 (0.002) ***	0.006 (0.002) ***	0.006 (0.002) ***	0.005 (0.002) **	0.005 (0.002) **	0.006 (0.002) ***	0.005 (0.002) **	0.005 (0.002) **	0.004 (0.002) *	0.004 (0.002) *
R_2^2		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
R_3^2		25.0%	25.0%	37.5%	37.5%		16.7%	16.7%	33.3%	33.3%

continued…

Level	Number of effect sizes – USA and Germany excluded				
	Model 1	Model 2	Model 3	Model 4	Model 5
Level 2					
Reliability		0.007 (0.017)	0.007 (0.017)	0.004 (0.016)	0.004 (0.016)
(Residual) variance	0.007 (0.004) †	0.007 (0.004) †	0.007 (0.004) †	0.007 (0.004) †	0.007 (0.004) †
Level 3					
Mean effect (intercept[a])	0.146 (0.012) ***	0.145 (0.011) ***	0.145 (0.011) ***	0.146 (0.011) ***	0.146 (0.011) ***
Gender		0.005 (0.013)	0.003 (0.014)	-0.001 (0.013)	0.000 (0.013)
Age		0.050 (0.014) ***	0.052 (0.013) ***	0.055 (0.014) ***	0.055 (0.014) ***
Education		0.012 (0.021)	0.015 (0.019)	0.024 (0.019)	0.023 (0.018)
Year		0.014 (0.011)	0.015 (0.011)	0.010 (0.011)	0.009 (0.011)
log GDP			-0.010 (0.013)		0.007 (0.014)
Gini				0.041 (0.013) **	0.044 (0.014) **
(Residual) variance	0.007 (0.003) **	0.005 (0.003) *	0.005 (0.003) †	0.004 (0.003)	0.004 (0.003)
$\boldsymbol{R_2^2}$		0.0%	0.0%	0.0%	0.0%
$\boldsymbol{R_3^2}$		28.6%	28.6%	42.9%	42.9%

Note. Regression coefficients with standard errors in parentheses. At Level 1, the intercept is fixed at 0.000, the variance is fixed at 1.000. $\boldsymbol{R_2^2}$ = Explained variance at Level 2. $\boldsymbol{R_3^2}$ = Explained variance at Level 3. [a]Intercept for mixed-effects models with moderator variables.

†$p \leq 0.10$. * $p \leq 0.05$. ** $p \leq 0.01$. *** $p \leq 0.001$.

Figure 1: Flow chart of the literature search

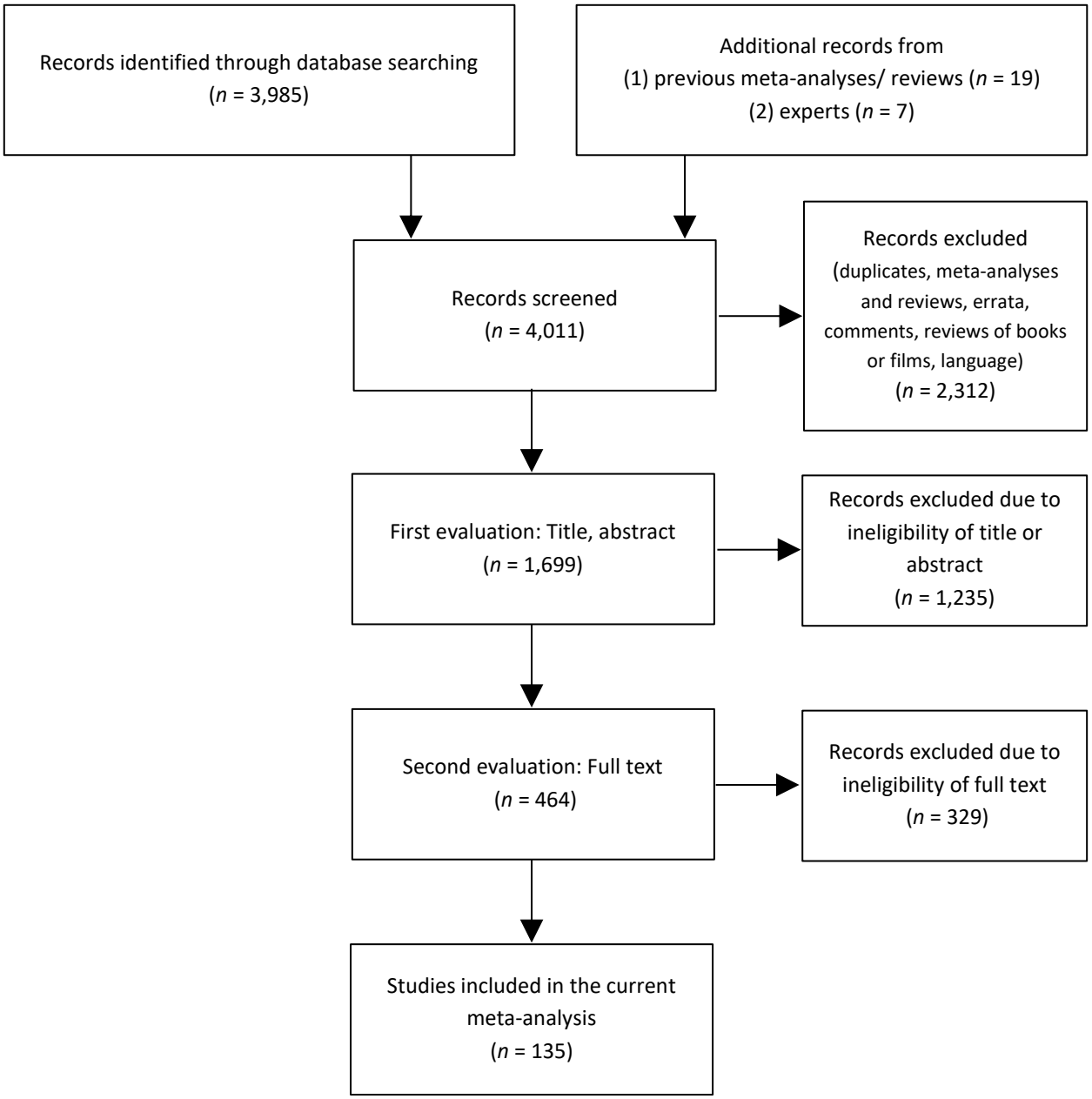
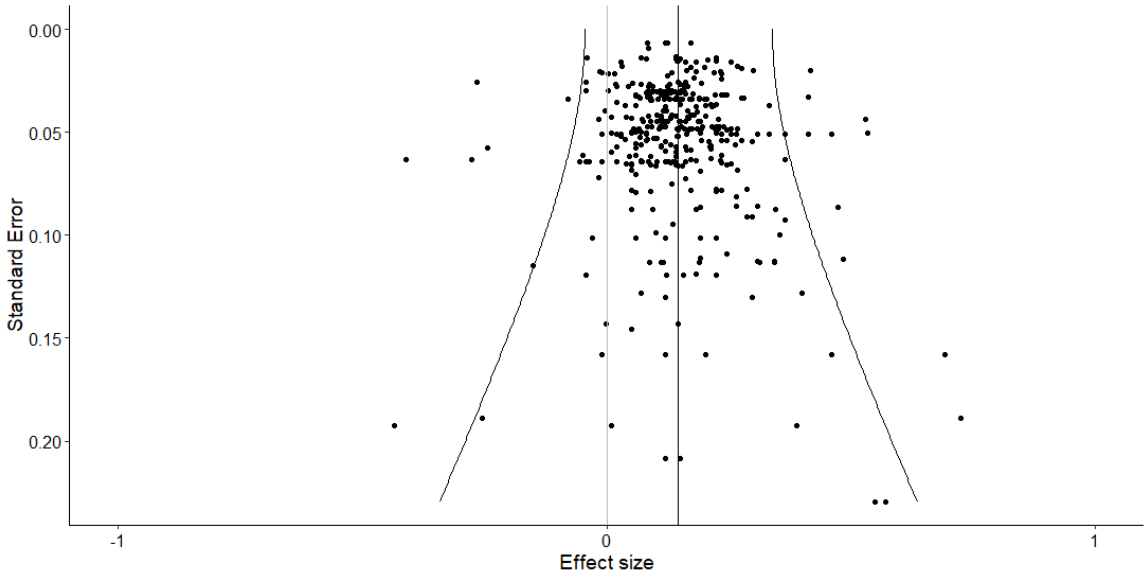
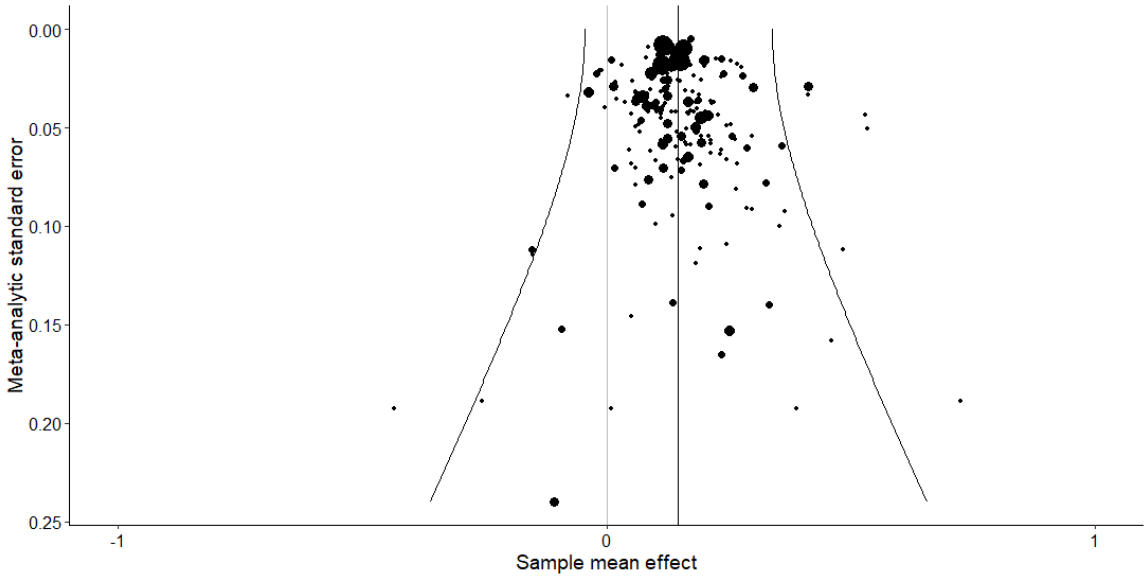


Figure 2: Funnel plots for the main meta-analysis

(a) Funnel plot of all effect sizes



(b) Funnel plot of sample mean effects



Note. Vertical lines represent the mean effects. Curved lines indicate the 95% CIs around the mean effects. Black circles represent the effect sizes included in each analysis. The size of the dots in 2 (b) is proportional to the number of effect sizes included for each sample.

Appendix 1

Overview of the characteristics of the included primary studies

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Abele, Hagmaier, & Spurk (2016)	Abele and Spurk's sample	Germany	Personal income	Satisfaction With Life Scale (Diener et al. 1985; German translation)	CWB	0.860	990	37.2	65.5	8	2006	32175.1	29.0	0.060
Addai, Opoku-Agyeman, & Amanfu (2013)	World Values Survey - Ghana sample 2005-2008	Ghana	Relative income	"In general, how satisfied are you with your life?"	CWB	n.a.	1533	33.9	50.6	2	2007	666.5	n.a.	-0.259
Addai, Opoku-Agyeman, & Amanfu (2013)	World Values Survey - Ghana sample 2005-2008	Ghana	Relative income	"Taking all things together, would you say you are happy or not happy?"	AWB	n.a.	1533	33.9	50.6	2	2007	666.5	n.a.	-0.042
Adelmann (1987)	Female sample	United States	Personal income	Composite SWB measure	SWB	n.a.	312	38.0	0.0	3	1976	7305.0	n.a.	0.110
Adelmann (1987)	Male sample	United States	Personal income	Composite SWB measure	SWB	n.a.	571	39.0	100.0	3	1976	7305.0	n.a.	0.200
Agrawal et al. (2011)	Bangalore male sample	India	Household income	Positive and Negative Affect Schedule - Revised (Barrett & Russell, 1998; Watson, Clark, & Tellegen, 1988; modification): Positive affect	AWB	0.800	498	37.0	100.0	7	2008	851.8	n.a.	0.102
Agrawal et al. (2011)	Bangalore male sample	India	Household income	Positive and Negative Affect Schedule - Revised (Barrett & Russell, 1998; Watson, Clark, & Tellegen, 1988; modification): Negative affect	AWB	0.900	498	37.0	100.0	7	2008	851.8	n.a.	0.147
Agrawal et al. (2011)	Bangalore male sample	India	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.800	498	37.0	100.0	7	2008	851.8	n.a.	0.124
Agrawal et al. (2011)	Bangalore female sample	India	Household income	Positive and Negative Affect Schedule - Revised (Barrett & Russell, 1998; Watson, Clark, & Tellegen, 1988; modification): Positive affect	AWB	0.800	423	37.0	0.0	7	2008	851.8	n.a.	0.058
Agrawal et al. (2011)	Bangalore female sample	India	Household income	Positive and Negative Affect Schedule - Revised (Barrett & Russell, 1998; Watson, Clark, & Tellegen, 1988; modification): Negative affect	AWB	0.900	423	37.0	0.0	7	2008	851.8	n.a.	0.167

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Agrawal et al. (2011)	Bangalore female sample	India	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.800	423	37.0	0.0	7	2008	851.8	n.a.	0.146
Aknin, Norton, & Dunn (2009)	Study 1 sample	United States	Household income	"How would you rate your life overall these days?"	CWB	n.a.	429	40.2	44.0	n.a.	2006	42102.0	38.4	0.250
Aknin, Norton, & Dunn (2009)	Study 2 sample	United States	Household income	"How would you rate your life overall these days?"	CWB	n.a.	315	52.8	55.0	n.a.	2006	42102.0	38.4	0.110
Ali et al. (2013)	Adult Psychiatric Morbidity Survey (APMS) sample	United Kingdom	Equivalized household income	"Taking all things together, how would you say you were these days – very happy, fairly happy or not too happy?" (Gallup, 1976)	AWB	n.a.	5534	n.a.	42.9	n.a.	2007	40378.3	34.1	0.141
Anonymous[g]	Anonymous sample A	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Positive affect	AWB	0.853	1046	34.6	19.5	6	2008	38564.9	28.7	0.125
Anonymous[g]	Anonymous sample A	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Joy	AWB	0.796	1046	34.6	19.5	6	2008	38564.9	28.7	0.080
Anonymous[g]	Anonymous sample A	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Activity/ interest	AWB	0.768	1046	34.6	19.5	6	2008	38564.9	28.7	0.150
Anonymous[g]	Anonymous sample A	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.884	1046	34.6	19.5	6	2008	38564.9	28.7	0.125
Anonymous[g]	Anonymous sample A	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Afraid	AWB	0.854	1046	34.6	19.5	6	2008	38564.9	28.7	0.149
Anonymous[g]	Anonymous sample A	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Upset	AWB	0.660	1046	34.6	19.5	6	2008	38564.9	28.7	0.083
Anonymous[g]	Anonymous sample A	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Positive affect	AWB	0.854	1059	34.6	19.5	6	2008	38564.9	28.7	0.126
Anonymous[g]	Anonymous sample A	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Joy	AWB	0.795	1059	34.6	19.5	6	2008	38564.9	28.7	0.089
Anonymous[g]	Anonymous sample A	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Activity/ interest	AWB	0.769	1059	34.6	19.5	6	2008	38564.9	28.7	0.142
Anonymous[g]	Anonymous sample A	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.884	1059	34.6	19.5	6	2008	38564.9	28.7	0.131

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Anonymous[g]	Anonymous sample A	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Afraid	AWB	0.854	1059	34.6	19.5	6	2008	38564.9	28.7	0.142
Anonymous[g]	Anonymous sample A	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Upset	AWB	0.663	1059	34.6	19.5	6	2008	38564.9	28.7	0.117
Anonymous[g]	Anonymous sample B	Germany	Household income	Temporal Satisfaction With Life Scale (Pavot, Diener, & Suh, 1998; German adaptation, Trautwein, 2004)	CWB	0.889	231	32.3	20.9	6	2009	40078.2	28.8	0.154
Anonymous[g]	Anonymous sample B	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Positive affect	AWB	0.862	873	32.3	20.9	6	2009	40078.2	28.8	0.150
Anonymous[g]	Anonymous sample B	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Joy	AWB	0.802	873	32.3	20.9	6	2009	40078.2	28.8	0.105
Anonymous[g]	Anonymous sample B	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Activity/ interest	AWB	0.767	873	32.3	20.9	6	2009	40078.2	28.8	0.172
Anonymous[g]	Anonymous sample B	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.885	873	32.3	20.9	6	2009	40078.2	28.8	0.129
Anonymous[g]	Anonymous sample B	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Afraid	AWB	0.848	873	32.3	20.9	6	2009	40078.2	28.8	0.153
Anonymous[g]	Anonymous sample B	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Upset	AWB	0.683	873	32.3	20.9	6	2009	40078.2	28.8	0.118
Anonymous[g]	Anonymous sample B	Germany	Personal income	Temporal Satisfaction With Life Scale (Pavot, Diener, & Suh, 1998; German adaptation, Trautwein, 2004)	CWB	0.891	232	32.3	20.9	6	2009	40078.2	28.8	0.141
Anonymous[g]	Anonymous sample B	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Positive affect	AWB	0.861	881	32.3	20.9	6	2009	40078.2	28.8	0.188
Anonymous[g]	Anonymous sample B	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Joy	AWB	0.799	881	32.3	20.9	6	2009	40078.2	28.8	0.144
Anonymous[g]	Anonymous sample B	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Activity/ interest	AWB	0.768	881	32.3	20.9	6	2009	40078.2	28.8	0.201
Anonymous[g]	Anonymous sample B	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.884	881	32.3	20.9	6	2009	40078.2	28.8	0.169

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Anonymous[g]	Anonymous sample B	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Afraid	AWB	0.847	881	32.3	20.9	6	2009	40078.2	28.8	0.197
Anonymous[g]	Anonymous sample B	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Upset	AWB	0.683	881	32.3	20.9	6	2009	40078.2	28.8	0.139
Anonymous[g]	Anonymous sample C	Germany	Household income	"How satisfied are you with your life?"	CWB	n.a.	644	31.1	21.2	6	2010	41496.5	28.6	0.165
Anonymous[g]	Anonymous sample C	Germany	Household income	Temporal Satisfaction With Life Scale (Pavot, Diener, & Suh, 1998; German adaptation, Trautwein, 2004)	CWB	0.895	523	31.1	21.2	6	2010	41496.5	28.6	0.073
Anonymous[g]	Anonymous sample C	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Positive affect	AWB	0.869	1106	31.1	21.2	6	2010	41496.5	28.6	0.135
Anonymous[g]	Anonymous sample C	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Joy	AWB	0.812	1106	31.1	21.2	6	2010	41496.5	28.6	0.094
Anonymous[g]	Anonymous sample C	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Activity/ interest	AWB	0.776	1106	31.1	21.2	6	2010	41496.5	28.6	0.157
Anonymous[g]	Anonymous sample C	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.888	1106	31.1	21.2	6	2010	41496.5	28.6	0.117
Anonymous[g]	Anonymous sample C	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Afraid	AWB	0.863	1106	31.1	21.2	6	2010	41496.5	28.6	0.139
Anonymous[g]	Anonymous sample C	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Upset	AWB	0.677	1106	31.1	21.2	6	2010	41496.5	28.6	0.102
Anonymous[g]	Anonymous sample C	Germany	Personal income	"How satisfied are you with your life?"	CWB	n.a.	647	31.1	21.2	6	2010	41496.5	28.6	0.122
Anonymous[g]	Anonymous sample C	Germany	Personal income	Temporal Satisfaction With Life Scale (Pavot, Diener, & Suh, 1998; German adaptation, Trautwein, 2004)	CWB	0.894	526	31.1	21.2	6	2010	41496.5	28.6	-0.017
Anonymous[g]	Anonymous sample C	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Positive affect	AWB	0.869	1111	31.1	21.2	6	2010	41496.5	28.6	0.132
Anonymous[g]	Anonymous sample C	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Joy	AWB	0.810	1111	31.1	21.2	6	2010	41496.5	28.6	0.094
Anonymous[g]	Anonymous sample C	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969):	AWB	0.776	1111	31.1	21.2	6	2010	41496.5	28.6	0.151

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
				Activity/ interest										
Anonymous[g]	Anonymous sample C	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.888	1111	31.1	21.2	6	2010	41496.5	28.6	0.109
Anonymous[g]	Anonymous sample C	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Afraid	AWB	0.863	1111	31.1	21.2	6	2010	41496.5	28.6	0.123
Anonymous[g]	Anonymous sample C	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Upset	AWB	0.681	1111	31.1	21.2	6	2010	41496.5	28.6	0.086
Anonymous[g]	Anonymous sample D	Germany	Household income	"How satisfied are you with your life?"	CWB	n.a.	501	31.7	23.7	6	2011	43394.2	29.0	0.186
Anonymous[g]	Anonymous sample D	Germany	Household income	Temporal Satisfaction With Life Scale (Pavot, Diener, & Suh, 1998; German adaptation, Trautwein, 2004)	CWB	0.879	372	31.7	23.7	6	2011	43394.2	29.0	0.146
Anonymous[g]	Anonymous sample D	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Positive affect	AWB	0.877	446	31.7	23.7	6	2011	43394.2	29.0	0.227
Anonymous[g]	Anonymous sample D	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Joy	AWB	0.836	446	31.7	23.7	6	2011	43394.2	29.0	0.193
Anonymous[g]	Anonymous sample D	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Activity/ interest	AWB	0.799	446	31.7	23.7	6	2011	43394.2	29.0	0.220
Anonymous[g]	Anonymous sample D	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.892	446	31.7	23.7	6	2011	43394.2	29.0	0.212
Anonymous[g]	Anonymous sample D	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Afraid	AWB	0.866	446	31.7	23.7	6	2011	43394.2	29.0	0.234
Anonymous[g]	Anonymous sample D	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Upset	AWB	0.672	446	31.7	23.7	6	2011	43394.2	29.0	0.151
Anonymous[g]	Anonymous sample D	Germany	Personal income	"How satisfied are you with your life?"	CWB	n.a.	502	31.7	23.7	6	2011	43394.2	29.0	0.111
Anonymous[g]	Anonymous sample D	Germany	Personal income	Temporal Satisfaction With Life Scale (Pavot, Diener, & Suh, 1998; German adaptation, Trautwein, 2004)	CWB	0.878	374	31.7	23.7	6	2011	43394.2	29.0	0.029
Anonymous[g]	Anonymous sample D	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Positive	AWB	0.877	446	31.7	23.7	6	2011	43394.2	29.0	0.116

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
				affect										
Anonymous[g]	Anonymous sample D	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Joy	AWB	0.837	446	31.7	23.7	6	2011	43394.2	29.0	0.092
Anonymous[g]	Anonymous sample D	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Activity/ interest	AWB	0.799	446	31.7	23.7	6	2011	43394.2	29.0	0.120
Anonymous[g]	Anonymous sample D	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.891	446	31.7	23.7	6	2011	43394.2	29.0	0.109
Anonymous[g]	Anonymous sample D	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Afraid	AWB	0.866	446	31.7	23.7	6	2011	43394.2	29.0	0.112
Anonymous[g]	Anonymous sample D	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Upset	AWB	0.671	446	31.7	23.7	6	2011	43394.2	29.0	0.083
Anonymous[g]	Anonymous sample E	Germany	Household income	"How satisfied are you with your life?"	CWB	n.a.	499	31.3	22.3	6	2012	43833.4	28.9	0.116
Anonymous[g]	Anonymous sample E	Germany	Household income	Temporal Satisfaction With Life Scale (Pavot, Diener, & Suh, 1998; German adaptation, Trautwein, 2004)	CWB	0.878	352	31.3	22.3	6	2012	43833.4	28.9	0.083
Anonymous[g]	Anonymous sample E	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Positive affect	AWB	0.882	433	31.3	22.3	6	2012	43833.4	28.9	0.221
Anonymous[g]	Anonymous sample E	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Joy	AWB	0.811	433	31.3	22.3	6	2012	43833.4	28.9	0.191
Anonymous[g]	Anonymous sample E	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Activity/ interest	AWB	0.806	433	31.3	22.3	6	2012	43833.4	28.9	0.218
Anonymous[g]	Anonymous sample E	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.884	433	31.3	22.3	6	2012	43833.4	28.9	0.225
Anonymous[g]	Anonymous sample E	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Afraid	AWB	0.857	433	31.3	22.3	6	2012	43833.4	28.9	0.261
Anonymous[g]	Anonymous sample E	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Upset	AWB	0.642	433	31.3	22.3	6	2012	43833.4	28.9	0.157
Anonymous[g]	Anonymous sample E	Germany	Personal income	"How satisfied are you with your life?"	CWB	n.a.	503	31.3	22.3	6	2012	43833.4	28.9	0.075

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Anonymous[g]	Anonymous sample E	Germany	Personal income	Temporal Satisfaction With Life Scale (Pavot, Diener, & Suh, 1998; German adaptation, Trautwein, 2004)	CWB	0.878	355	31.3	22.3	6	2012	43833.4	28.9	0.037
Anonymous[g]	Anonymous sample E	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Positive affect	AWB	0.881	435	31.3	22.3	6	2012	43833.4	28.9	0.184
Anonymous[g]	Anonymous sample E	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Joy	AWB	0.811	435	31.3	22.3	6	2012	43833.4	28.9	0.168
Anonymous[g]	Anonymous sample E	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Activity/ interest	AWB	0.806	435	31.3	22.3	6	2012	43833.4	28.9	0.172
Anonymous[g]	Anonymous sample E	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.883	435	31.3	22.3	6	2012	43833.4	28.9	0.107
Anonymous[g]	Anonymous sample E	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Afraid	AWB	0.858	435	31.3	22.3	6	2012	43833.4	28.9	0.143
Anonymous[g]	Anonymous sample E	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Upset	AWB	0.641	435	31.3	22.3	6	2012	43833.4	28.9	0.055
Anonymous[g]	Anonymous sample F	Germany	Household income	"How satisfied are you with your life?"	CWB	n.a.	52	30.7	14.2	6	2013	43813.7	28.8	0.145
Anonymous[g]	Anonymous sample F	Germany	Household income	Temporal Satisfaction With Life Scale (Pavot, Diener, & Suh, 1998; German adaptation, Trautwein, 2004)	CWB	0.861	22	30.7	14.2	6	2013	43813.7	28.8	0.500
Anonymous[g]	Anonymous sample F	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Positive affect	AWB	0.876	245	30.7	14.2	6	2013	43813.7	28.8	0.073
Anonymous[g]	Anonymous sample F	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Joy	AWB	0.836	245	30.7	14.2	6	2013	43813.7	28.8	0.021
Anonymous[g]	Anonymous sample F	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Activity/ interest	AWB	0.767	245	30.7	14.2	6	2013	43813.7	28.8	0.125
Anonymous[g]	Anonymous sample F	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.896	245	30.7	14.2	6	2013	43813.7	28.8	0.135
Anonymous[g]	Anonymous sample F	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Afraid	AWB	0.879	245	30.7	14.2	6	2013	43813.7	28.8	0.138

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Anonymous[g]	Anonymous sample F	Germany	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Upset	AWB	0.712	245	30.7	14.2	6	2013	43813.7	28.8	0.103
Anonymous[g]	Anonymous sample F	Germany	Personal income	"How satisfied are you with your life?"	CWB	n.a.	52	30.7	14.2	6	2013	43813.7	28.8	-0.002
Anonymous[g]	Anonymous sample F	Germany	Personal income	Temporal Satisfaction With Life Scale (Pavot, Diener, & Suh, 1998; German adaptation, Trautwein, 2004)	CWB	0.861	22	30.7	14.2	6	2013	43813.7	28.8	0.516
Anonymous[g]	Anonymous sample F	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Positive affect	AWB	0.876	245	30.7	14.2	6	2013	43813.7	28.8	0.120
Anonymous[g]	Anonymous sample F	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Joy	AWB	0.836	245	30.7	14.2	6	2013	43813.7	28.8	0.071
Anonymous[g]	Anonymous sample F	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Activity/ interest	AWB	0.767	245	30.7	14.2	6	2013	43813.7	28.8	0.160
Anonymous[g]	Anonymous sample F	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.896	245	30.7	14.2	6	2013	43813.7	28.8	0.126
Anonymous[g]	Anonymous sample F	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Afraid	AWB	0.879	245	30.7	14.2	6	2013	43813.7	28.8	0.125
Anonymous[g]	Anonymous sample F	Germany	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Upset	AWB	0.712	245	30.7	14.2	6	2013	43813.7	28.8	0.086
Anonymous[g]	Anonymous sample G	Germany	Household income	Items measuring life satisfaction	CWB	n.a.	2389	47.6	59.6	3	1996	28240.7	30.5	0.228
Anonymous[g]	Anonymous sample G	Germany	Household income	Items measuring negative affect	AWB	n.a.	2454	47.6	59.6	3	1996	28240.7	30.5	0.162
Anonymous[g]	Anonymous sample G	Germany	Household income	Items measuring life satisfaction	CWB	n.a.	2292	47.6	59.6	3	1996	28240.7	30.5	0.217
Anonymous[g]	Anonymous sample G	Germany	Household income	Items measuring negative affect	AWB	n.a.	2356	47.6	59.6	3	1996	28240.7	30.5	0.181
Ariyabuddhiphongs & Jaiwong (2010)	Thailand Buddhist sample	Thailand	Personal income	Satisfaction With Life Scale (Pavot & Diener, 1993; Thai version)	CWB	0.860	400	n.a.	47.0	n.a.	2007	3036.2	39.8	0.220
Ariyabuddhiphongs & Jaiwong (2010)	Thailand Buddhist sample	Thailand	Personal income	Domain satisfaction scale (Ariyabuddhipongs, 2009)	CWB	0.830	400	n.a.	47.0	n.a.	2007	3036.2	39.8	0.080
Aryee (1999)	Hong Kong Chinese sample	Hong Kong SAR	Personal income	Satisfaction With Life Scale (Diener, Emmons, Larsen, &	CWB	0.820	255	n.a.	46.7	6	1996	21838.0	n.a.	0.210

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
				Griffin, 1985)										
Barreat (2003)	US students sample	United States	Personal income	Extended Satisfaction with Life Scale (Alfonso, Allison, Rader, & Gorman, 1996)	SWB	0.880	232	20.1	44.0	n.a.	1999	31598.6	35.4	0.050
Barreat (2003)	US students sample	United States	Personal income	Happiness items	AWB	n.a.	232	20.1	44.0	n.a.	1999	31598.6	35.4	0.090
Barreat (2003)	Venezuela students sample	Venezuela (Bolivarian Republic of)	Personal income	Extended Satisfaction with Life Scale (Alfonso, Allison, Rader, & Gorman, 1996; Spanish translation)	SWB	0.880	306	22.8	24.0	n.a.	1999	3611.5	45.0	-0.240
Barreat (2003)	Venezuela students sample	Venezuela (Bolivarian Republic of)	Personal income	Happiness items	AWB	n.a.	306	22.8	24.0	n.a.	1999	3611.5	45.0	0.060
Bartram (2011)	World Values Survey 1995 - Immigrant sample	United States	Household income	"All things considered, how satisfied are you with your life as a whole these days?"	CWB	n.a.	120	41.2	49.7	n.a.	1995	26584.4	38.8	0.350
Bartram (2011)	World Values Survey 1995 - Native sample	United States	Household income	"All things considered, how satisfied are you with your life as a whole these days?"	CWB	n.a.	1414	48.9	49.7	n.a.	1995	26584.4	38.8	0.018
Beggs (2002)	Married American sample	United States	Household income	Three-step happiness scale from Gurin et al. (1960): "Taking all things together, how would you say things are these days? Would you say you're very happy, pretty happy or not too happy?"	AWB	n.a.	619	42.0	100.0	3	1996	27717.0	39.2	0.183
Bergman & Daukantaite (2006)	Individual Development and Adaptation longitudinal research programme (IDA) sample	Sweden	Personal income	E.g., "How satisfied are you with your life?"	CWB	0.780	271	43.0	0.0	4	1998	29658.1	24.2	-0.050
Bergman & Daukantaite (2006)	Individual Development and Adaptation longitudinal research programme (IDA) sample	Sweden	Personal income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988; Swedish translation): Positive affect	AWB	0.840	290	43.0	0.0	4	1998	29658.1	24.2	0.120
Bergman & Daukantaite (2006)	Individual Development and Adaptation longitudinal research programme (IDA) sample	Sweden	Personal income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988; Swedish translation): Negative affect	AWB	0.870	285	43.0	0.0	4	1998	29658.1	24.2	0.010

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Bergman & Daukantaite (2006)	Individual Development and Adaptation longitudinal research programme (IDA) sample	Sweden	Household income	E.g., "How satisfied are you with your life?"	CWB	0.780	254	43.0	0.0	4	1998	29658.1	24.2	0.170
Bergman & Daukantaite (2006)	Individual Development and Adaptation longitudinal research programme (IDA) sample	Sweden	Household income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988; Swedish translation): Positive affect	AWB	0.840	270	43.0	0.0	4	1998	29658.1	24.2	0.060
Bergman & Daukantaite (2006)	Individual Development and Adaptation longitudinal research programme (IDA) sample	Sweden	Household income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988; Swedish translation): Negative affect	AWB	0.870	264	43.0	0.0	4	1998	29658.1	24.2	0.140
Bergstad et al. (2012)	Swedish sample	Sweden	Household income	"Taken it all together, how happy are you?"	AWB	n.a.	1393	n.a.	n.a.	6	2007	44414.0	23.4	0.069
Bergstad et al. (2012)	Swedish sample	Sweden	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Pavot & Diener 1993); two affective variables	SWB	n.a.	1398	n.a.	n.a.	6	2007	44414.0	23.4	0.150
Binder & Coad (2011)	British Household Panel (BHPS) sample	United Kingdom	Equivalized household income	"How dissatisfied or satisfied are you with your life overall?"	CWB	n.a.	11591	56.5	46.7	n.a.	2006	36352.9	33.9	0.086
Biswas-Diener & Diener (2001)	Calcutta slum sample	India	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; adaptation)	CWB	0.800	83	35.4	35.0	n.a.	1998	397.8	n.a.	0.450
Blacklock, Rhodes, & Brown (2007)	Greater Victoria sample	Canada	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.900	341	n.a.	50.4	6	2004	26291.3	32.2	0.290
Botha (2013)	National Income Dynamics Survey (NIDS) sample	South Africa	Income	"How do you feel about your life as a whole right now?"	CWB	n.a.	2880	40.2	39.0	1	2008	5592.3	59.4	0.198
Bourque, Pushkar, Bonneville, & Béland (2005)	Aging in the Community Study - Male sample	Canada	Household income	Satisfaction with important life domains and general life satisfaction	CWB	0.700	419	72.8	100.0	n.a.	1995	20503.0	28.9	0.240
Bourque, Pushkar, Bonneville, & Béland (2005)	Aging in the Community Study - Female sample	Canada	Household income	Satisfaction with important life domains and general life satisfaction	CWB	0.700	539	73.8	0.0	n.a.	1995	20503.0	28.9	0.110
Bratten (2001)	National Survey of Families and Households - Elderly singles sample	United States	Personal income	Composite score of satisfactions with major life domains (Andrews & Whitey,	CWB	0.840	884	71.5	21.2	n.a.	1992	23651.7	38.1	-0.080

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
	(Sample A)			1976; Campbell, Converse, & Rogers, 1976)										
Brief, Brett, Raskas, & Stein (1997)	Workers sample	United States	Personal income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.870	168	38.6	n.a.	5	1994	25618.8	39.5	0.280
Brief, Brett, Raskas, & Stein (1997)	Workers sample	United States	Income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.870	168	38.6	n.a.	5	1994	25618.8	39.5	0.220
Broman (1988)	African American adults sample	United States	Household income	"How satisfied are you with your life as a whole these days?"	CWB	n.a.	286	41.5	0.0	4	1993	24648.0	39.5	0.140
Brunstein (1999)	Erlangen elderly sample	Germany	Personal income	Composite of the Satisfaction with Life Scale (Diener et al., 1985) and life domains (family, friendships, leisure, health, material life situation)	CWB	0.760	62	70.0	40.3	n.a.	1996	28240.7	30.5	0.290
Brunstein (1999)	Erlangen elderly sample	Germany	Personal income	Positive and negative affect adjectives	AWB	0.820	62	70.0	40.3	n.a.	1996	28240.7	30.5	0.120
Callard (1997)	Quality sample	United States	Income	Satisfaction With Life Scale (Pavot, Diener, Colvin, & Sandvik, 1991)	CWB	0.830	26	42.1	50.0	5	1994	25618.8	39.5	0.150
Callard (1997)	Quality sample	United States	Income	Satisfaction With Life Scale (Pavot, Diener, Colvin, & Sandvik, 1991)	CWB	0.830	26	42.1	50.0	5	1994	25618.8	39.5	0.120
Calsyn & Roades (1993)	St. Louis Area Agency on Aging sample	United States	Personal income	Positive and Negative Affect Scale (Bradburn, 1969)	AWB	0.730	722	73.6	22.5	3	1990	21515.2	38.1	0.180
Chan & Lee (2006)	Beijing sample	China	Personal income	Extent to which respondent is generally happy with recent life	AWB	n.a.	265	n.a.	49.6	n.a.	2000	827.1	39.0	0.090
Chan & Lee (2006)	Hong Kong sample	China	Personal income	Extent to which respondent is generally happy with recent life	AWB	n.a.	213	n.a.	49.5	n.a.	2000	827.1	39.0	0.190
Chang (2013)	Taiwan Social Change Survey (TSCS) sample	Taiwan Province of China	Personal income	‘‘Taken all together, are you satisfied with your life at present?’’	CWB	n.a.	1502	41.3	55.7	3	2007	n.a.	31.0	0.145
Cheung & Leung (2004)	Beijing inhabitants sample	China	Income	Life satisfaction item	CWB	n.a.	732	46.6	49.8	n.a.	2000	827.1	39.0	0.216
Cho et al. (2009)	Korean rural poor sample	Republic of Korea	Household income	Satisfaction with individual life items	CWB	n.a.	369	n.a.	n.a.	n.a.	2005	14568.6	n.a.	0.067

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Cohen, Panter, Turan, Morse, & Kim (2014)	Work Experiences and Character Traits (WECT) Project sample	United States	Personal income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.870	1492	39.3	50.3	n.a.	2012	49003.0	38.9	0.160
Cohen, Panter, Turan, Morse, & Kim (2014)	Work Experiences and Character Traits (WECT) Project sample	United States	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Positive affect	AWB	0.844	1314	39.3	50.3	n.a.	2012	49003.0	38.9	0.094
Cohen, Panter, Turan, Morse, & Kim (2014)	Work Experiences and Character Traits (WECT) Project sample	United States	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.864	1314	39.3	50.3	n.a.	2012	49003.0	38.9	0.020
Cohen, Panter, Turan, Morse, & Kim (2014)	Work Experiences and Character Traits (WECT) Project sample	United States	Personal income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.870	1492	39.3	50.3	n.a.	2012	49003.0	38.9	0.146
Cohen, Panter, Turan, Morse, & Kim (2014)	Work Experiences and Character Traits (WECT) Project sample	United States	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Positive affect	AWB	0.844	1314	39.3	50.3	n.a.	2012	49003.0	38.9	0.085
Cohen, Panter, Turan, Morse, & Kim (2014)	Work Experiences and Character Traits (WECT) Project sample	United States	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.864	1314	39.3	50.3	n.a.	2012	49003.0	38.9	0.045
Coke (1992)	Male African American elderly sample	United States	Household income	Satisfaction With Life Scale (Diener, 1984)	CWB	0.800	84	72.2	100.0	2	1989	20378.2	38.7	0.190
Coke (1992)	Female African American elderly sample	United States	Household income	Satisfaction With Life Scale (Diener, 1984)	CWB	0.800	79	72.2	0.0	2	1989	20378.2	38.7	-0.150
Conner, Dorfman, & Tompkins (1985)	Retired professors sample	United States	Personal income	Self-report assessment of life satisfaction (Adams, 1969)	CWB	0.820	87	n.a.	73.3	8	1982	12662.5	35.9	0.240
Cox (2012)	Female sex workers sample	Nicaragua	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Spanish translation)	CWB	0.870	31	29.0	0.0	n.a.	2008	1276.0	n.a.	-0.250
Cox (2012)	Dump dwellers sample	Nicaragua	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Spanish translation)	CWB	0.870	30	35.0	50.0	n.a.	2008	1276.0	n.a.	-0.410
Cox (2012)	Urban poor sample	Nicaragua	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Spanish translation)	CWB	0.870	30	29.0	40.0	n.a.	2008	1276.0	n.a.	0.370
Cox (2012)	Rural peasants samle	Nicaragua	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Spanish	CWB	0.870	30	36.0	43.0	n.a.	2008	1276.0	n.a.	0.010

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
				translation)										
Cox (2012)	University students sample	Nicaragua	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Spanish translation)	CWB	0.870	30	18.0	40.0	n.a.	2008	1276.0	n.a.	0.010
Cramm, Møller, & Nieboer (2010)	Rhini sample	South Africa	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.880	1011	30.0	27.0	3	2007	5189.9	n.a.	0.174
Cuellar, Bastida, & Braccio (2004)	Mexican immigrants sample	United States	Income	Index of life satisfaction	CWB	n.a.	343	59.9	25.8	n.a.	1996	27717.0	39.2	0.192
Damann (2008)	Multiracial sample	United States	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.910	268	32.6	14.2	5	2004	38697.7	37.2	0.230
Daukantaite & Zukauskiene (2006)	Lithuanian sample	Lithuania	Personal income	"How satisfied are you with your life? How meaningful is your life? Think about your situation during the last half year. Have the positive or the negative things outweighted?"	CWB	0.780	308	42.4	0.0	5	2003	3918.7	31.8	0.021
Daukantaite & Zukauskiene (2006)	Lithuanian sample	Lithuania	Personal income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988; Lithuanian translation): Positive affect	AWB	0.880	308	42.4	0.0	5	2003	3918.7	31.8	0.141
Daukantaite & Zukauskiene (2006)	Lithuanian sample	Lithuania	Personal income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988; Lithuanian translation): Negative affect	AWB	0.890	308	42.4	0.0	5	2003	3918.7	31.8	0.209
Delbosc & Currie (2011)	Victorian Integrated Survey of Travel and Activity (VISTA) follow-on sample	Australia	Household income	Personal Well-Being Index (International Well-Being Group, 2005)	CWB	0.840	984	n.a.	n.a.	n.a.	2008	38218.9	33.6	0.235
Delbosc & Currie (2011)	Victorian Integrated Survey of Travel and Activity (VISTA) follow-on sample	Australia	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.820	984	n.a.	n.a.	n.a.	2008	38218.9	33.6	0.219
Delbosc & Currie (2011)	Victorian Integrated Survey of Travel and Activity (VISTA) follow-on sample	Australia	Household income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Positive affect	AWB	0.900	984	n.a.	n.a.	n.a.	2008	38218.9	33.6	0.088

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Delbosc & Currie (2011)	Victorian Integrated Survey of Travel and Activity (VISTA) follow-on sample	Australia	Household income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Negative affect	AWB	0.900	984	n.a.	n.a.	n.a.	2008	38218.9	33.6	0.122
DeVoe & Pfeffer (2009)	General Social Survey 2002 sample (Study 1)	United States	Household income	"If you were to consider your life in general these days, how happy or unhappy would you say you are, on the whole?"	AWB	n.a.	583	40.4	50.0	n.a.	2002	35891.9	37.6	0.170
DeVoe & Pfeffer (2009)	National Survey of Families and Households 1987-1988 sample (Study 2)	United States	Household income	"Taking things all together, how would you say things are these days?"	CWB	n.a.	4875	37.7	46.0	n.a.	1988	19220.6	38.4	0.080
Dulin (2000)	Low income elderly sample	United States	Personal income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Positive affect	AWB	0.750	100	72.3	27.3	4	1999	31598.6	35.4	-0.030
Dulin (2000)	Low income elderly sample	United States	Personal income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Negative affect	AWB	0.850	100	72.3	27.3	4	1999	31598.6	35.4	0.060
Durak, Senol-Durak, & Gencoz (2010)	University students sample (Study 1)	Turkey	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.810	547	20.7	36.7	7	2007	6919.3	40.6	0.130
Durak, Senol-Durak, & Gencoz (2010)	University students sample (Study 1)	Turkey	Household income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Positive affect	AWB	0.850	547	20.7	36.7	7	2007	6919.3	40.6	0.040
Durak, Senol-Durak, & Gencoz (2010)	University students sample (Study 1)	Turkey	Household income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Negative affect	AWB	0.820	547	20.7	36.7	7	2007	6919.3	40.6	0.010
Durak, Senol-Durak, & Gencoz (2010)	Correctional officers sample (Study 2)	Turkey	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.820	166	37.2	83.7	n.a.	2007	6919.3	40.6	0.230
Durak, Senol-Durak, & Gencoz (2010)	Correctional officers sample (Study 2)	Turkey	Household income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Positive affect	AWB	0.860	166	37.2	83.7	n.a.	2007	6919.3	40.6	0.050
Durak, Senol-Durak, & Gencoz (2010)	Correctional officers sample (Study 2)	Turkey	Household income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Negative affect	AWB	0.860	166	37.2	83.7	n.a.	2007	6919.3	40.6	0.170
Durak, Senol-Durak, & Gencoz (2010)	Elderly adults sample (Study 3)	Turkey	Personal income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.890	123	68.2	44.7	n.a.	2007	6919.3	40.6	0.290

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Evans, Kantrowitz, & Eshelman (2002)	Elederly Tompkins County sample	United States	Income	Positive affect scale (Mroczek & Kolarz, 1998)	AWB	0.950	497	72.5	38.0	n.a.	1998	30229.8	35.7	0.110
Flores (2008)	Elderly Latino sample	United States	Personal income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.850	162	70.7	27.2	n.a.	2005	40269.3	38.0	0.060
Franc, Prizmic-Larsen, & Lipovčan (2012)	Croatia sample	Croatia	Equivalized household income	"All things considered, how satisfied are you with your life as a whole nowadays?"	CWB	n.a.	3975	47.1	49.3	4	2008	12078.8	28.0	0.250
Fuentes & Rojas (2001)	Mexico sample	Mexico	Household income	Fordyce's (1977) scale; Delighted-Terrible Scale (Andrews & Whitey, 1976)	AWB	n.a.	339	n.a.	n.a.	4	1998	4681.9	53.4	0.206
Goldschmidt (2003)	Bank customers sample	United States	Personal income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988)	AWB	0.860	165	55.4	38.2	6	2000	33132.2	39.4	0.090
Goldschmidt (2003)	Bank customers sample	United States	Personal income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988)	AWB	0.840	165	55.4	38.2	6	2000	33132.2	39.4	0.220
Guardiola, González-Gómez, García-Rubio, & Lendechy-Grajales (2013)	Maya sample	Mexico	Household income	"In general terms, how happy do you feel with your life?"	AWB	n.a.	373	n.a.	n.a.	n.a.	2008	8494.8	45.2	0.143
Guardiola & Guillen-Royo (2014)	Granada sample	Spain	Household income	"Are you satisfied with your life in general?"	CWB	n.a.	907	52.4	42.0	n.a.	2012	31826.0	33.5	0.068
Heidemeier & Staudinger (2012)	German national survey sample (Study 1)	Germany	Household income	"How satisfied are you currently with your… (different life domains)" (life domains aggregated into an overall measure of life satisfaction)	CWB	0.800	760	45.0	n.a.	n.a.	2003	25953.4	31.4	0.220
Heidemeier & Staudinger (2012)	German national survey sample (Study 1)	Germany	Household income	"Overall, how satisfied are you with your life at present?"	CWB	n.a.	760	45.0	n.a.	n.a.	2003	25953.4	31.4	0.150
Herrero, Fuente, & Gracia (2011)	Latin American immigrants sample	Spain	Household income	"Taking all things together, how happy would you say you are?"	AWB	n.a.	359	34.1	44.0	3	2008	29640.0	31.7	0.096
Herrero, Fuente, & Gracia (2011)	Latin American immigrants sample	Spain	Household income	"All things considered, how satisfied are you with your life as a whole nowadays?"	CWB	n.a.	361	34.1	44.0	3	2008	29640.0	31.7	0.103
Hirosaki et al. (2011)	T town sample	Japan	Income	"How would you rate your level of subjective happiness?"	AWB	n.a.	103	81.0	36.4	n.a.	2006	34245.0	32.9	0.340
Howell, Howell, & Schwabe (2006)	Jah Hut sample	Malaysia	Household savings	Satisfaction With Life Scale (Diener, Emmons, Larsen, &	CWB	0.640	307	42.0	100.0	1	2003	3980.7	n.a.	0.160

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
				Griffin, 1983; Malay translation)										
Howell, Howell, & Schwabe (2006)	Non-employed students sample	United States	Income-wealth composite	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.820	82	22.7	16.0	5	2010	47655.1	37.3	0.300
Howell, Howell, & Schwabe (2006)	Non-employed students sample	United States	Debt	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.820	82	22.7	16.0	5	2010	47655.1	37.3	0.330
Howell, Howell, & Schwabe (2006)	Older than typical college sample	United States	Income-wealth composite	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.820	139	28.7	43.0	5	2010	47655.1	37.3	0.300
Howell, Howell, & Schwabe (2006)	Older than typical college sample	United States	Debt	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.820	139	28.7	43.0	5	2010	47655.1	37.3	0.260
Howell, Howell, & Schwabe (2006)	Adults snowball sampling sample	United States	Income-wealth composite	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.820	137	50.0	44.0	n.a.	2010	47655.1	37.3	0.440
Howell, Howell, & Schwabe (2006)	Adults snowball sampling sample	United States	Debt	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.820	137	50.0	44.0	n.a.	2010	47655.1	37.3	0.190
Huang (2013)	Elder Chinese sample	China	Personal income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Chinese version, Shek, 1998)	CWB	0.930	532	72.8	46.1	1	2009	2747.5	49.0	0.485
Ibrahim & Chung (2003)	Jurong West sample	Singapore	Household income	Questions regarding respondents' satisfaction with life	CWB	n.a.	295	n.a.	48.0	4	2000	24012.4	n.a.	0.161
Ip & Cheung (2013)	Taiwan sample	Taiwan Province of China	Personal income	"On the whole, how satisfied are you with your life and your current condition?"	CWB	n.a.	1101	n.a.	48.6	n.a.	2007	n.a.	31.0	0.121
Ip & Cheung (2013)	Taiwan sample	Taiwan Province of China	Personal income	Life satisfaction by specific domains	CWB	0.850	1101	n.a.	48.6	n.a.	2007	n.a.	31.0	0.106
Islam, Wills Herrera, & Hamilton (2009)	Belo Horizonte sample	Brazil	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Brazilian translation)	CWB	0.788	577	n.a.	n.a.	n.a.	2007	4884.5	53.0	0.133
Israëls (1984)	Example 1 sample	Netherlands	Income	Questions on life satisfaction	CWB	n.a.	4108	n.a.	n.a.	n.a.	1977	7150.5	23.5	0.143

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Israëls (1984)	Example 1 sample	Netherlands	Income	Questions on happiness	AWB	n.a.	4108	n.a.	n.a.	n.a.	1977	7150.5	23.5	0.144
Jackowska, Dockray, Hendrickx, & Steptoe (2011)	University College London sample	United Kingdom	Personal income	Subjective Happiness Scale (Lyubomirsky & Lepper, 1999)	AWB	0.900	195	33.8	0.0	n.a.	2008	42902.3	34.2	-0.016
Jackowska, Dockray, Hendrickx, & Steptoe (2011)	University College London sample	United Kingdom	Personal income	Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988): Negative affect	AWB	0.860	194	33.8	0.0	n.a.	2008	42902.3	34.2	0.160
Jacob & Brinkerhoff (1999)	Countryside sample	United States	Household income	Respondents assessed their current happiness levels from "very happy" to "not happpy at all"	AWB	n.a.	565	n.a.	n.a.	6	1996	27717.0	39.2	0.110
Jacob & Brinkerhoff (1999)	Countryside sample	United States	Household income	Life satisfaction scale	CWB	0.660	537	n.a.	n.a.	6	1996	27717.0	39.2	0.130
Johnson & Krueger (2006)	Survey of Midlife Development in the United States (MIDUS) - Twin sample	United States	Equivalized household income	Participants' satisfaction with their lives and themselves, and the degree to which they feel their lives are the best possible overall	CWB	0.620	719	n.a.	43.1	4	2003	37237.5	37.4	0.120
Jorgensen, Jamieson, & Martin (2010)	City of Greater Bendigo sample	Australia	Household income	"Thinking about your own life and personal cicumstances, how satisfied are you with your life as a whole?"	CWB	n.a.	1003	n.a.	43.0	n.a.	2008	38218.9	33.6	0.120
Judge & Watanabe (1993)	Quality of Employment Survey (QES) sample	United States	Personal income	Semantic differential scale measuring overall life satisfaction and general questions about respondents' lives (e.g., "In general, how satisfied are you with the ways you're spending your life these days?")	CWB	0.890	804	36.0	0.7	n.a.	1973	5750.7	n.a.	0.020
Jung et al. (2007)	Korean sample	Republic of Korea	Household income	"Taking all factors into consideration, how satisfied are you currently with your life?"	CWB	n.a.	392	n.a.	47.4	4	2004	13226.6	31.6	0.163
Kahneman, Krueger, Schkade, Schwarz, & Stone (2006)	Columbus sample	United States	Household income	Life satisfaction question	CWB	n.a.	740	n.a.	0.0	n.a.	2005	40269.3	38.0	0.320
Kahneman, Krueger, Schkade, Schwarz, &	Columbus sample	United States	Household income	"We would like to know how you feel and what mood you	AWB	n.a.	740	n.a.	0.0	n.a.	2005	40269.3	38.0	0.200

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	n[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	r[f]
Stone (2006)				are in when you are at home. When you are at home, what percentage of the time are you in a bad mood, a little low or irritable, in a mildly pleasant mood, in a very good mood."										
Kahneman, Krueger, Schkade, Schwarz, & Stone (2006)	Columbus sample	United States	Household income	Participants' duration-weighted average rating of the feeling "happy" over episodes of the day	AWB	n.a.	740	n.a.	0.0	n.a.	2005	40269.3	38.0	0.060
Kasser & Sheldon (2009)	Study 2 sample	United States	Household income	Summary SWB variable	SWB	0.820	73	43.3	37.2	n.a.	2007	44081.1	37.8	0.156
Kasser & Sheldon (2009)	Study 2 sample	United States	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.820	73	43.3	37.2	n.a.	2007	44081.1	37.8	0.221
Kasser & Sheldon (2009)	Study 2 sample	United States	Household income	Pleasant emotions (Diener & Emmons, 1984)	AWB	0.890	73	43.3	37.2	n.a.	2007	44081.1	37.8	-0.043
Kasser & Sheldon (2009)	Study 2 sample	United States	Household income	Unpleasant Emotions (Diener & Emmons, 1984)	AWB	0.840	73	43.3	37.2	n.a.	2007	44081.1	37.8	0.121
Kasser & Sheldon (2009)	Study 4 sample	United States	Household income	Summary SWB variable	SWB	0.820	134	43.3	36.0	n.a.	2004	38697.7	37.2	0.181
Kasser & Sheldon (2009)	Study 4 sample	United States	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.820	134	43.3	36.0	n.a.	2004	38697.7	37.2	0.332
Kasser & Sheldon (2009)	Study 4 sample	United States	Household income	Pleasant emotions (Diener & Emmons, 1984)	AWB	0.890	134	43.3	36.0	n.a.	2004	38697.7	37.2	0.051
Kasser & Sheldon (2009)	Study 4 sample	United States	Household income	Unpleasant Emotions (Diener & Emmons, 1984)	AWB	0.840	134	43.3	36.0	n.a.	2004	38697.7	37.2	0.093
Kibour (2003)	Ethiopian immigrants sample	United States	Personal income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Amharic translation)	CWB	0.710	43	36.0	40.8	n.a.	2001	34573.3	36.0	0.430
Kousha & Mohseni (2000)	Theran 1995 sample	Iran (Islamic Republic of)	Income	Questions on happiness (e.g., "In general, how happy are you these days?")	AWB	n.a.	544	32.8	51.3	4	1995	1296.6	n.a.	0.050
Kousha & Mohseni (2000)	Theran 1997 sample	Iran (Islamic Republic of)	Income	"In general, how happy are you these days?"	AWB	n.a.	1055	32.9	41.8	4	1997	1535.7	n.a.	0.090
Tong & Yuen (2008)	Quality of Life Household	China	Personal	Life satisfaction item	CWB	n.a.	1387	n.a.	46.6	3	2005	1341.6	42.5	0.128

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
	Survey 2005 sample		income											
Tong & Yuen (2008)	Quality of Life Household Survey 2005 sample	China	Personal income	Happiness item	AWB	n.a.	1385	n.a.	46.6	3	2005	1341.6	42.5	0.087
La Barbera & Gürhan (1997)	Total sample	United States	Personal income	Index of General Affect (Campbell, Converse, & Rogers, 1976): General affect	AWB	0.880	241	n.a.	46.1	5	1994	25618.8	39.5	0.230
La Barbera & Gürhan (1997)	Total sample	United States	Personal income	Index of General Affect (Campbell, Converse, & Rogers, 1976): Negative affect	AWB	0.450	241	n.a.	46.1	5	1994	25618.8	39.5	0.130
Lam (2004)	Vietnamese refugees sample	United States	Income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Vietnamese translation)	CWB	0.610	232	n.a.	51.3	4	2001	34573.3	36.0	0.240
Lam (2004)	Antalya sample	Turkey	Income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Turkish version, Köker, 1991)	CWB	0.900	397	45.7	43.8	n.a.	2012	10069.6	40.2	0.488
Lee, Law, & Tam (1999)	Hong Kong family sample	Hong Kong SAR	Household income	General Contentment Scale (Hudson, 1982)	CWB	0.900	408	n.a.	33.0	n.a.	1996	21838.0	n.a.	0.060
Leonard (1981)	National Opinion research Center (NORC) 1973 sample	United States	Income	Life satisfaction index (self constructed by author)	CWB	n.a.	320	n.a.	n.a.	n.a.	1973	5750.7	n.a.	0.257
Lever, Piñol, & Uralde (2005)	Mexico City sample	Mexico	Household income	Life Satisfaction Index (Palomar, 2000)	SWB	0.790	918	36.0	50.3	n.a.	2002	6277.3	51.2	0.390
Li, Bai, & Wang (2013)	Full-time workers sample	China	Personal income	Scale for Positive and Negative Experience (P; Diener, Wirtz, Tov, Kim-Prieto, Choi, Oishi, & Biswas-Diener, 2009)	AWB	0.920	21322	n.a.	67.1	5	2011	4000.8	47.7	0.124
Li, Bai, & Wang (2013)	Full-time workers sample	China	Personal income	Scale for Positive and Negative Experience (B; Diener, Wirtz, Tov, Kim-Prieto, Choi, Oishi, & Biswas-Diener, 2009)	AWB	0.920	21322	n.a.	67.1	5	2011	4000.8	47.7	0.120
Li, Bai, & Wang (2013)	Full-time workers sample	China	Personal income	Scale for Positive and Negative Experience (N; Diener, Wirtz, Tov, Kim-Prieto, Choi, Oishi, & Biswas-Diener, 2009)	AWB	0.910	21322	n.a.	67.1	5	2011	4000.8	47.7	0.084
Liang, Yamashita, & Brown (2013)	Chinese AsiaBarometer sample	China	Household income	Happiness question	AWB	n.a.	1998	40.8	50.8	n.a.	2006	1548.6	48.7	0.123

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Liang, Yamashita, & Brown (2013)	Japanese AsiaBarometer sample	Japan	Household income	Happiness question	AWB	n.a.	1003	44.7	50.0	n.a.	2006	34245.0	32.9	0.110
Liang, Yamashita, & Brown (2013)	South Korean AsiaBarometer sample	Republic of Korea	Household income	Happiness question	AWB	n.a.	1023	42.0	50.0	n.a.	2006	16500.9	30.6	0.160
Liao (2013)	Sample A	Taiwan Province of China	Personal income	Subjective quality-of-life items (e.g., general happiness, satisfaction with different aspects of life)	SWB	n.a.	567	48.0	44.5	4	2011	n.a.	34.2	0.140
Liao (2013)	Sample B	Taiwan Province of China	Personal income	Subjective quality-of-life items (e.g., general happiness, satisfaction with different aspects of life)	SWB	n.a.	555	48.0	46.4	4	2011	n.a.	34.2	0.165
Liao (2013)	Sample C	Taiwan Province of China	Personal income	Subjective quality-of-life items (e.g., general happiness, satisfaction with different aspects of life)	SWB	n.a.	577	48.0	48.9	3	2011	n.a.	34.2	0.103
Liao (2013)	Sample D	Taiwan Province of China	Personal income	Subjective quality-of-life items (e.g., general happiness, satisfaction with different aspects of life)	SWB	n.a.	538	48.0	44.3	4	2011	n.a.	34.2	0.166
Liao (2013)	Sample E	Taiwan Province of China	Personal income	Subjective quality-of-life items (e.g., general happiness, satisfaction with different aspects of life)	SWB	n.a.	570	48.0	43.7	4	2011	n.a.	34.2	0.086
Liao (2013)	Sample F	Taiwan Province of China	Personal income	Subjective quality-of-life items (e.g., general happiness, satisfaction with different aspects of life)	SWB	n.a.	573	48.0	46.7	4	2011	n.a.	34.2	0.177
Liao, Fu, & Yi (2005)	Taiwan Social Trend Surveys sample	Taiwan Province of China	Personal income	"Taking all things together, would you say you have a happy life these days?"	AWB	n.a.	1147	42.1	49.8	3	2000	n.a.	31.2	-0.043
Liao, Fu, & Yi (2005)	Taiwan Social Trend Surveys sample	Taiwan Province of China	Personal income	Personal life satisfaction measure	CWB	n.a.	1142	42.1	49.8	3	2000	n.a.	31.2	0.002
Liao, Fu, & Yi (2005)	Hong Kong Social Trend Survey sample	Hong Kong SAR	Personal income	"Taking all things together, would you say you have a happy life these days?"	AWB	n.a.	896	40.8	48.9	3	2000	25761.1	n.a.	0.089
Liao, Fu, & Yi (2005)	Hong Kong Social Trend Survey sample	Hong Kong SAR	Personal income	Personal life satisfaction measure	CWB	n.a.	909	40.8	48.9	3	2000	25761.1	n.a.	0.140

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Lipovcan, Brkljačić, & Šakić (2007)	Croatian sample	Croatia	Equivalized household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.820	896	44.6	47.3	n.a.	2005	7739.0	30.0	0.270
Lipovcan, Brkljačić, & Šakić (2007)	Croatian sample	Croatia	Equivalized household income	"In general, how happy or unhappy do you usually feel?" (Fordyce, 1988)	AWB	n.a.	896	44.6	47.3	n.a.	2005	7739.0	30.0	0.273
Lipovčan, Brkljačić, & Tadić (2013)	Croatian adults sample	Croatia	Income	"Taking all things together, how happy would you say you are?"	AWB	n.a.	4724	39.8	44.0	3	2010	13694.1	31.5	0.150
Lipovčan, Brkljačić, & Tadić (2013)	Croatian adults sample	Croatia	Income	"How satisfied are you with your life as a whole?"	CWB	n.a.	4724	39.8	44.0	3	2010	13694.1	31.5	0.140
Locker (2009)	Canadian Community Health Survey 2003 (CCHS) sample	Canada	Household income	Life satisfaction item	CWB	n.a.	2754	n.a.	n.a.	n.a.	2003	24347.3	31.6	0.270
Lowry (1984)	New York senior citizens sample	United States	Income	Life satisfaction in the present	CWB	n.a.	231	73.5	37.2	1	1982	12662.5	35.9	0.144
Lubin, Zuckerman, Breytspraak, & Bull (1988)	Gallup sample	United States	Income	Positive affect scale from the Revised Multiple Affect Adjective Check List (Zuckerman & Lubin, 1985)	AWB	0.740	1439	n.a.	49.4	3	1985	15879.5	38.1	0.054
Lucas & Schimmack (2009)	German Socio-Economic Panel 2006 (SOEP) sample	Germany	Household income	"How satisfied are you with your life, all things considered?"	CWB	0.600	21135	n.a.	n.a.	n.a.	2006	32175.1	29.0	0.170
Lucas & Schimmack (2009)	German Socio-Economic Panel 2006 (SOEP) sample	Germany	Household income	"How satisfied are you with your life, all things considered?"	CWB	0.600	21135	n.a.	n.a.	n.a.	2006	32175.1	29.0	0.170
MacLeod & Conway (2005)	Egham North sample	United Kingdom	Personal income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Positive affect	AWB	0.900	81	48.0	47.6	n.a.	2002	26727.8	33.5	0.115
MacLeod & Conway (2005)	Egham North sample	United Kingdom	Personal income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Negative affect	AWB	0.900	81	48.0	47.6	n.a.	2002	26727.8	33.5	0.187
MacLeod & Conway (2005)	Egham North sample	United Kingdom	Personal income	Temporal Satisfaction With Life Scale (Pavot, Diener, & Suh, 1998)	CWB	0.910	81	48.0	47.6	n.a.	2002	26727.8	33.5	0.087
MacLeod & Conway (2005)	Egham North sample	United Kingdom	Household income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Positive affect	AWB	0.900	81	48.0	47.6	n.a.	2002	26727.8	33.5	0.304
MacLeod & Conway	Egham North sample	United	Household	Positive and Negative Affect	AWB	0.900	81	48.0	47.6	n.a.	2002	26727.8	33.5	0.110

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
(2005)		Kingdom	income	Schedule (Watson, Clark, & Tellegen, 1988): Negative affect										
MacLeod & Conway (2005)	Egham North sample	United Kingdom	Household income	Temporal Satisfaction With Life Scale (Pavot, Diener, & Suh, 1998)	CWB	0.910	81	48.0	47.6	n.a.	2002	26727.8	33.5	0.331
Mancini (1980)	High-rise public housing sample	United States	Personal income	Self-Anchoring Striving Scale (Cantril, 1965)	CWB	n.a.	74	n.a.	21.6	1	1978	8746.5	n.a.	0.180
Marshall (2001)	Elderly sample	United States	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.870	105	72.2	50.2	5	1999	31598.6	35.4	0.100
Meadow, Mentzer, Rahtz, & Sirgy (1992)	Study 1 sample	United States	Income	Delighted-Terrible Scale (Andrews & Whitney, 1976)	AWB	n.a.	752	70.5	40.1	4	1989	20378.2	38.7	0.210
Meadow, Mentzer, Rahtz, & Sirgy (1992)	Study 2 sample	United States	Income	Delighted-Terrible Scale (Andrews & Whitney, 1976)	AWB	n.a.	529	72.9	63.5	5	1989	20378.2	38.7	0.225
Meddin & Vaux (1988)	Rural elderly persons sample	United States	Income	Positive and Negative Affect Scale (Bradburn, 1969): Positive affect	AWB	0.844	100	70.0	31.0	n.a.	1985	15879.5	38.1	0.120
Meddin & Vaux (1988)	Rural elderly persons sample	United States	Income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.864	100	70.0	31.0	n.a.	1985	15879.5	38.1	0.190
Meddin & Vaux (1988)	Rural elderly persons sample	United States	Income	Low spirits item	AWB	n.a.	100	70.0	31.0	n.a.	1985	15879.5	38.1	0.220
Meddin & Vaux (1988)	Rural elderly persons sample	United States	Income	Overall satisfaction with life item	CWB	n.a.	100	70.0	31.0	n.a.	1985	15879.5	38.1	0.190
Michalos & Kahlke (2010)	British Columbia sample	Canada	Household income	Satisfation with life as a whole	CWB	n.a.	504	n.a.	34.3	5	2007	36091.3	31.9	0.090
Michalos & Kahlke (2010)	British Columbia sample	Canada	Household income	Happiness with life as a whole	AWB	n.a.	504	n.a.	34.3	5	2007	36091.3	31.9	0.110
Michalos & Kahlke (2010)	British Columbia sample	Canada	Household income	Satisfaction with overall quality of life	CWB	n.a.	504	n.a.	34.3	5	2007	36091.3	31.9	0.160
Michalos & Kahlke (2010)	British Columbia sample	Canada	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.820	504	n.a.	34.3	5	2007	36091.3	31.9	0.150
Michalos & Kahlke (2010)	British Columbia sample	Canada	Household income	Contentment with Life Assessment Scale (Lavallee, Hatch, Michalos, & McKinley, 2007)	CWB	0.720	504	n.a.	34.3	5	2007	36091.3	31.9	0.120

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Michalos & Kahlke (2010)	British Columbia sample	Canada	Household income	Subjective Well-Being Index (Michalos, Thommasen, Read, Anderson, & Zumbo, 2005)	SWB	0.860	504	n.a.	34.3	5	2007	36091.3	31.9	0.190
Miret et al. (2012)	Set A sample	India	Household income	Day reconstruction method: Positive affect	AWB	n.a.	389	58.0	57.4	1	2005	573.8	48.0	0.030
Miret et al. (2012)	Set A sample	India	Household income	Day reconstruction method: Negative affect	AWB	n.a.	389	58.0	57.4	1	2005	573.8	48.0	0.020
Miret et al. (2012)	Set A sample	India	Household income	Day reconstruction method: Net affect	AWB	n.a.	389	58.0	57.4	1	2005	573.8	48.0	-0.010
Miret et al. (2012)	Set B sample	India	Household income	Day reconstruction method: Positive affect	AWB	n.a.	389	59.0	56.7	1	2005	573.8	48.0	0.260
Miret et al. (2012)	Set B sample	India	Household income	Day reconstruction method: Negative affect	AWB	n.a.	389	59.0	56.7	1	2005	573.8	48.0	0.080
Miret et al. (2012)	Set B sample	India	Household income	Day reconstruction method: Net affect	AWB	n.a.	389	59.0	56.7	1	2005	573.8	48.0	0.230
Miret et al. (2012)	Set C sample	India	Household income	Day reconstruction method: Positive affect	AWB	n.a.	389	55.0	40.0	1	2005	573.8	48.0	0.390
Miret et al. (2012)	Set C sample	India	Household income	Day reconstruction method: Negative affect	AWB	n.a.	389	55.0	40.0	1	2005	573.8	48.0	0.350
Miret et al. (2012)	Set C sample	India	Household income	Day reconstruction method: Net affect	AWB	n.a.	389	55.0	40.0	1	2005	573.8	48.0	0.430
Miret et al. (2012)	Set D sample	India	Household income	Day reconstruction method: Positive affect	AWB	n.a.	388	56.0	33.3	1	2005	573.8	48.0	0.250
Miret et al. (2012)	Set D sample	India	Household income	Day reconstruction method: Negative affect	AWB	n.a.	388	56.0	33.3	1	2005	573.8	48.0	0.300
Miret et al. (2012)	Set D sample	India	Household income	Day reconstruction method: Net affect	AWB	n.a.	388	56.0	33.3	1	2005	573.8	48.0	0.320
Møller (1988)	KwaZulu sample	South Africa	Income	"Taking all things together, how satisfied are you with your life as a whole these days? On the whole, would you say you are very satisfied, satisfied, dissatisfied, or very dissatisfied?"	CWB	n.a.	252	n.a.	100.0	n.a.	1984	2888.8	n.a.	-0.270
Møller (1988)	KwaZulu sample	South Africa	Income	"Taking all things together in your life, how would you say things are these days? Would you say you are very happy,	AWB	n.a.	252	n.a.	100.0	n.a.	1984	2888.8	n.a.	-0.390

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
				fairly happy, fairly unhappy, or very unhappy these days?"										
Møller (1988)	KwaZulu sample	South Africa	Income	Positive and Negative Affect Scale (Bradburn, 1969)	AWB	n.a.	252	n.a.	100.0	n.a.	1984	2888.8	n.a.	0.350
Møller, Dickow, & Harris (1999)	World Values Survey 1995 - South African sample	South Africa	Household income	"Taking all thing together, would you say you are "very happy", "quite happy", "not very happy", or "not happy at all"?"	AWB	n.a.	2457	n.a.	n.a.	n.a.	1995	3622.3	63.0	0.291
Møller, Dickow, & Harris (1999)	World Values Survey 1995 - South African sample	South Africa	Household income	Life-as-a-whole item	CWB	n.a.	2456	n.a.	n.a.	n.a.	1995	3622.3	63.0	0.395
Møller, Dickow, & Harris (1999)	South African Quality of Life Trends Study (MarkData) - 1996 sample	South Africa	Household income	"Taking all things together, would you say you are "very happy", "quite happy", "not very happy", or "not happy at all"?"	AWB	n.a.	2234	n.a.	n.a.	n.a.	1996	3691.2	n.a.	-0.009
Møller & Saris (2001)	South African Quality of Life Trends Study (MarkData) - 1995 sample	South Africa	Household income	"Taking all things together, how satisfied are you with your life as a whole these days?"	CWB	n.a.	2163	n.a.	n.a.	n.a.	1995	3622.3	63.0	0.230
Møller & Saris (2001)	South African Quality of Life Trends Study (MarkData) - 1995 sample	South Africa	Household income	"Taking all things together in your life, how would you say things are these days? Are you very happy, … or very unhappy?"	AWB	n.a.	2163	n.a.	n.a.	n.a.	1995	3622.3	63.0	0.230
Molnar (1985)	Farm operators sample	United States	Household income	Adaptation of the Self-Anchoring Striving Scale (Cantril, 1965)	CWB	n.a.	705	n.a.	n.a.	3	1981	11669.0	35.0	0.213
O'Bryant (1991)	Widows sample	United States	Personal income	Delighted-Terrible Scale (Andrews & Whitney, 1976)	AWB	n.a.	237	71.9	0.0	3	1988	19220.6	38.4	0.040
O'Bryant (1991)	Widows sample	United States	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Positive affect	AWB	0.844	237	71.9	0.0	3	1988	19220.6	38.4	0.050
O'Bryant (1991)	Widows sample	United States	Personal income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.864	237	71.9	0.0	3	1988	19220.6	38.4	0.250
Pavlova & Silbereisen (2012)	Jena Study on Social Change and Human	Germany	Personal income	"How satisfied are you at present with your life	CWB	n.a.	244	32.8	49.8	n.a.	2005	29623.0	29.7	-0.055

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
	Development - German unemployed sample			altogether?"										
Pavlova & Silbereisen (2012)	Jena Study on Social Change and Human Development - German unemployed sample	Germany	Personal income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Positive affect	AWB	0.900	245	32.8	49.8	n.a.	2005	29623.0	29.7	-0.011
Pavlova & Silbereisen (2012)	Jena Study on Social Change and Human Development - German unemployed sample	Germany	Personal income	"How satisfied are you at present with your life altogether?"	CWB	n.a.	244	32.8	49.8	n.a.	2005	29623.0	29.7	-0.043
Pavlova & Silbereisen (2012)	Jena Study on Social Change and Human Development - German unemployed sample	Germany	Personal income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Positive affect	AWB	0.900	245	32.8	49.8	n.a.	2005	29623.0	29.7	-0.037
Pavlova & Silbereisen (2012)	Jena Study on Social Change and Human Development - German employed sample	Germany	Personal income	"How satisfied are you at present with your life altogether?"	CWB	n.a.	1304	34.4	49.8	n.a.	2005	29623.0	29.7	0.165
Pavlova & Silbereisen (2012)	Jena Study on Social Change and Human Development - German employed sample	Germany	Personal income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Positive affect	AWB	0.900	1297	34.4	49.8	n.a.	2005	29623.0	29.7	0.123
Pavlova & Silbereisen (2012)	Jena Study on Social Change and Human Development - German employed sample	Germany	Personal income	"How satisfied are you at present with your life altogether?"	CWB	n.a.	1304	34.4	49.8	n.a.	2005	29623.0	29.7	0.158
Pavlova & Silbereisen (2012)	Jena Study on Social Change and Human Development - German employed sample	Germany	Personal income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Positive affect	AWB	0.900	1297	34.4	49.8	n.a.	2005	29623.0	29.7	0.124
Pichetpongsa (2004)	Bangkok sample	Thailand	Household income	"We would like to ask you about your satisfaction with your life in general. How happy are you at present with your life as a whole?"	AWB	n.a.	115	41.9	16.4	1	2002	1981.4	42.0	0.135
Prenda & Lachman (2001)	Survey of Midlife Development in the United States (MIDUS) - US sample	United States	Household income	Satisfaction with life overall, work, health, family	CWB	0.670	2971	46.9	49.0	5	1998	30229.8	35.7	0.170

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Prenda & Lachman (2001)	Survey of Midlife Development in the United States (MIDUS) - Boston sample	United States	Household income	Satisfaction with life overall, work, health, family	CWB	0.690	300	47.9	56.0	5	1998	30229.8	35.7	0.210
Quoidbach, Dunn, Petrides, & Mikolajczak (2010)	Study 1 sample	Belgium	Personal income	Subjective Happiness Scale (Lyubomirsky & Lepper, 1999)	AWB	0.840	341	37.9	34.0	n.a.	2009	42705.7	26.2	0.120
Quoidbach, Dunn, Petrides, & Mikolajczak (2010)	Study 1 sample	Belgium	Personal savings	Subjective Happiness Scale (Lyubomirsky & Lepper, 1999)	AWB	0.840	324	37.9	34.0	n.a.	2009	42705.7	26.2	0.060
Reed (2013)	General Social Survey sample	United States	Household income	"Taking all together, how would you say things are these days - would you say that you are very happy, pretty happy, or not too happy?"	AWB	n.a.	1705	56.6	45.8	4	2004	38697.7	37.2	0.230
Reed (2013)	Social Reality Research Center (CIRES) Social Survey sample	Spain	Household income	"Generally, in this moment, would you say that you feel very happy, pretty happy, not too happy, or not happy at all?"	AWB	n.a.	1188	44.8	n.a.	2	1993	13737.2	n.a.	0.125
Requena (1995)	NORC General Social Survey (GSS) sample	United States	Household income	"Taken all toghether, how would you say things are these days – would you say that you are very happy, pretty happy, or not too happy?"	AWB	n.a.	1419	45.7	n.a.	3	1985	15879.5	38.1	0.150
Riley & Eckenrode (1986)	Boston sample	United States	Household income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.810	314	34.7	0.0	3	1979	9637.1	34.3	0.210
Salazar (2013)	Foster Care graduate sample	United States	Personal income	"Taking all together, how would you say things are these days - would you say that you are very happy, pretty happy, or not too happy?"	AWB	n.a.	250	25.6	24.2	6	2010	47655.1	37.3	0.228
Sandel (2008)	Community college students sample	United States	Household income	Positive and Negative Affect Scale - Extended (PANAS-X; Watson & Clark, 1994): Positive affect	AWB	0.830	64	30.0	12.5	5	2004	38697.7	37.2	0.380
Sandel (2008)	Community college students sample	United States	Household income	Positive and Negative Affect Scale - Extended (PANAS-X; Watson & Clark, 1994): Negative affect	AWB	0.850	64	30.0	12.5	5	2004	38697.7	37.2	0.070

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Schneider (2012)	International Social Justice Project (ISJP) - German sample	Germany	Equivalized household income	"All things considered, how satisfied are you with your life as a whole?"	CWB	n.a.	2292	n.a.	48.6	4	2006	32175.1	29.0	0.133
Schnittker (2008)	Unrelated persons sample	United States	Income	Happiness (i.e., positive affect) items	AWB	0.910	3023	n.a.	n.a.	5	1996	27717.0	39.2	0.030
Schnittker (2008)	Ordinary siblings sample	United States	Income	Happiness (i.e., positive affect) items	AWB	0.910	2330	n.a.	n.a.	5	1996	27717.0	39.2	-0.014
Schnittker (2008)	Monozygotic twins sample	United States	Income	Happiness (i.e., positive affect) items	AWB	0.910	634	n.a.	n.a.	5	1996	27717.0	39.2	-0.004
Sekulova & van den Bergh (2013)	Barcelona income sample	Spain	Personal income	"Taking all things together, how satisfied do you feel with your life at present?"	CWB	n.a.	840	43.0	47.0	4	2011	32638.3	34.0	0.090
Sekulova & van den Bergh (2013)	Barcelona income sample	Spain	Personal income	"Taking all things together, how satisfied do you feel with your life at present?"	CWB	n.a.	840	43.0	47.0	4	2011	32638.3	34.0	0.092
Sengupta et al. (2012)	Quality of Life Survey (QoLS) sample	New Zealand	Household income	"Would you say that your overall quality of life is …"	CWB	n.a.	5197	49.5	47.2	4	2008	28655.9	33.0	0.220
Sengupta et al. (2012)	Quality of Life Survey (QoLS) sample	New Zealand	Household income	"In general how happy or unhappy would you say you are?"	AWB	n.a.	5197	49.5	47.2	4	2008	28655.9	33.0	0.070
Sengupta et al. (2012)	Quality of Life Survey (QoLS) sample	New Zealand	Household income	"At some time in their lives, most people experience stress. Can you tell me which statement best applies to how often, if ever, in the last 12 months you have experienced stress that has had a negative effect on you?"	AWB	n.a.	5197	49.5	47.2	4	2008	28655.9	33.0	-0.040
Shichman & Cooper (1984)	Shichman and Cooper's sample	United States	Personal income	"Overall, how satisfied are you with your life?"	CWB	n.a.	217	31.0	37.8	5	1981	11669.0	35.0	0.261
Silverman (1999)	Mothers sample	United States	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.830	124	63.7	0.0	4	1999	31598.6	35.4	0.280
Smith (2003)	World Values Survey - Belarus sample	Belarus	Household income	"Taking all things together, would you say you are not at all happy, not very happy, quite happy, very happy?"	AWB	n.a.	960	n.a.	46.3	n.a.	1990	1704.7	n.a.	0.059
Smith (2003)	World Values Survey - Estonia sample	Estonia	Household income	"Taking all things together, would you say you are not at all	AWB	n.a.	935	n.a.	44.7	n.a.	1990	n.a.	n.a.	0.066

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	n[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	r[f]
				happy, not very happy, quite happy, very happy?"										
Smith (2003)	World Values Survey - Latvia sample	Latvia	Household income	"Taking all things together, would you say you are not at all happy, not very happy, quite happy, very happy?"	AWB	n.a.	730	n.a.	39.7	n.a.	1990	n.a.	n.a.	0.038
Smith (2003)	World Values Survey - Lithuania sample	Lithuania	Household income	"Taking all things together, would you say you are not at all happy, not very happy, quite happy, very happy?"	AWB	n.a.	896	n.a.	46.5	n.a.	1990	n.a.	n.a.	0.187
Smith (2003)	World Values Survey - Moscow sample	Russian Federation	Household income	"Taking all things together, would you say you are not at all happy, not very happy, quite happy, very happy?"	AWB	n.a.	940	n.a.	44.6	n.a.	1990	3456.9	n.a.	0.082
Smith (2003)	World Values Survey - West Germany sample	Germany	Household income	"Taking all things together, would you say you are not at all happy, not very happy, quite happy, very happy?"	AWB	n.a.	1797	n.a.	48.2	n.a.	1997	28383.1	30.4	0.177
Snider (1980)	Edmonton sample	Canada	Income	"On the whole, how satisfied would you say you are with your life?"	CWB	n.a.	428	n.a.	58.6	2	1976	6855.4	30.4	0.065
Snow & Crapo (1982)	Veteran sample	United States	Household income	Positive and Negative Affect Scale (Bradburn, 1969)	AWB	0.820	205	71.2	100.0	n.a.	1979	9637.1	34.3	0.060
Sok (2010)	Korean elderly sample	Republic of Korea	Personal income	Standard life satisfaction instrument (Yun, 1982)	SWB	0.880	267	n.a.	37.1	2	2007	18563.4	31.2	0.047
Spurling (2002)	Midlife women sample	United States	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.870	154	50.0	0.0	6	1998	30229.8	35.7	0.258
Stevens (1995)	Widow sample	Netherlands	Income	Life satisfaction measure	CWB	n.a.	50	69.0	0.0	2	1992	20153.3	25.5	0.050
Stevens (1995)	Widower sample	Netherlands	Income	Life satisfaction measure	CWB	n.a.	31	68.0	100.0	4	1992	20153.3	25.5	0.620
Steverink, Westerhof, Bode, & Dittmann-Kohli (2001)	German Aging Survey sample	Germany	Equivalized household income	Satisfaction With Life Scale (Pavot & Diener, 1993)	CWB	0.860	4034	n.a.	51.2	n.a.	1996	28240.7	30.5	0.180
Steverink, Westerhof, Bode, & Dittmann-Kohli (2001)	German Aging Survey sample	Germany	Equivalized household income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Positive affect	AWB	0.870	4034	n.a.	51.2	n.a.	1996	28240.7	30.5	0.160

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Steverink, Westerhof, Bode, & Dittmann-Kohli (2001)	German Aging Survey sample	Germany	Equivalized household income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Negative affect	AWB	0.820	4034	n.a.	51.2	n.a.	1996	28240.7	30.5	0.030
Stull & Scarisbrick-Hauser (1989b)	Longitudinal Retirement History Study (RHS) 1979 sample	United States	Income	"Taking things altogether, would you say you're very happy, pretty happy, or not too happy these days?"	AWB	n.a.	4350	70.0	n.a.	n.a.	1979	9637.1	34.3	0.220
Stutsman, Okun, & Stock (1985)	Community Organization for Drug Abuse, Mental Health and Alcoholism Services (CODAMA) sample	United States	Income	Positive and Negative Affect Scale (Bradburn, 1969): Positive affect	AWB	0.844	247	73.0	42.0	n.a.	1980	10592.6	34.7	0.180
Stutsman, Okun, & Stock (1985)	Community Organization for Drug Abuse, Mental Health and Alcoholism Services (CODAMA) sample	United States	Income	Positive and Negative Affect Scale (Bradburn, 1969): Negative affect	AWB	0.864	247	73.0	42.0	n.a.	1980	10592.6	34.7	0.070
Suhail & Chaudhry (2004)	Lahore sample	Pakistan	Household income	Faces Scale (Andrews & Withey, 1976)	AWB	n.a.	973	n.a.	49.6	n.a.	2001	493.7	30.5	0.230
Suhail & Chaudhry (2004)	Lahore sample	Pakistan	Household income	Self-Anchoring Ladder (Cantril, 1967)	CWB	n.a.	973	n.a.	49.6	n.a.	2001	493.7	30.5	0.240
Tang (2005)	Chinese immigrant sample	Canada	Household income	Positive and Negative Affect Scale (Bradburn, 1969; Chinese adaption, Devins, Morton, Dion, Pelletier & Edwards, 1997): Positive affect	AWB	0.700	43	38.0	0.0	7	2003	24347.3	31.6	-0.010
Tang (2005)	Chinese immigrant sample	Canada	Household income	Positive and Negative Affect Scale (Bradburn, 1969; Chinese adaption, Devins, Morton, Dion, Pelletier & Edwards, 1997): Positive affect	AWB	0.720	43	38.0	0.0	7	2003	24347.3	31.6	0.120
Tang (2005)	Chinese immigrant sample	Canada	Household income	Positive and Negative Affect Scale (Bradburn, 1969; Chinese adaption, Devins, Morton, Dion, Pelletier & Edwards, 1997): Negative affect	AWB	0.790	43	38.0	0.0	7	2003	24347.3	31.6	0.200
Tang (2005)	Chinese immigrant sample	Canada	Household income	Positive and Negative Affect Scale (Bradburn, 1969; Chinese adaption, Devins, Morton, Dion, Pelletier & Edwards,	AWB	0.720	43	38.0	0.0	7	2003	24347.3	31.6	0.600

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
				1997): Negative affect										
Taylor, Chatters, Hardison, & Riley (2001)	National Survey of Black Americans (NSBA) sample	United States	Income	"Taking all things together, how would you say things are these days – would you say you're very happy, pretty happy, or not too happy these days?"	AWB	n.a.	2107	n.a.	n.a.	n.a.	1980	10592.6	34.7	0.016
Taylor, Chatters, Hardison, & Riley (2001)	National Survey of Black Americans (NSBA) sample	United States	Income	"In general, how satisfied are you with your life as a whole these days? Would you say that you are very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied?"	CWB	n.a.	2107	n.a.	n.a.	n.a.	1980	10592.6	34.7	0.003
Tiefenbach & Kohlbacher (2015)	National Survey on Lifestyle Preferences sample	Japan	Household income	"How happy are you currently?"	AWB	n.a.	3139	48.5	49.0	n.a.	2011	40067.0	n.a.	0.260
Toker (2012)	Turkish academics sample	Turkey	Income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Turkish version, Köker, 1991)	CWB	0.830	648	n.a.	49.4	7	2009	8632.1	41.5	0.115
Tonsing (2013)	Pakistani immigrants in Hong Kong sample	Hong Kong SAR	Personal income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Urdu translation)	CWB	0.890	229	30.6	45.0	4	2010	30716.2	n.a.	0.100
Tonsing (2013)	Nepalese immigrants in Hong Kong sample	Hong Kong SAR	Personal income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Nepali translation)	CWB	0.800	218	32.3	51.2	4	2010	30716.2	n.a.	0.050
Tran, Wright, & Chatters (1991)	National Survey of Black Americans (NSBA) sample	United States	Household income	"In general, how satisfied are you with your life as a whole these days?"	CWB	n.a.	407	67.0	36.8	2	1980	10592.6	34.7	0.070
Tran, Wright, & Chatters (1991)	National Survey of Black Americans (NSBA) sample	United States	Household income	"Taking all things together, how would you say things are these days – would you say you are very happy, pretty happy or not too happy these days?"	AWB	n.a.	407	67.0	36.8	2	1980	10592.6	34.7	0.050
Tye (2006)	Gay African American sample	United States	Personal income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.870	179	34.8	100.0	5	2005	40269.3	38.0	0.132

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Wang & VanderWeele (2011)	China General Social Survey (CGSS) 2003 sample	China	Personal income	"Overall, how do you feel about your own life?"	CWB	n.a.	4476	43.4	48.0	4	2003	1058.8	44.9	0.204
Willits & Crider (1988)	Pennsylvania sample	United States	Household income	Delighted-Terrible Scale (Andrews & Whitney, 1976)	AWB	n.a.	1484	n.a.	42.8	n.a	1984	14745.1	37.2	0.192
Yi & Bjorck (2014)	Protestant Korean American sample	United States	Personal income	Adaptation of the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Korean translation)	CWB	0.870	295	49.2	38.6	5	2010	47655.1	37.3	0.170
Zhang & Cao (2010)	College sample	China	Income composite	Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985); Positive and Negative Affect Scale (Bradburn, 1969)	SWB	0.855	319	20.9	54.9	5	2007	1854.9	48.4	0.130
Zhang & Cao (2010)	College sample	China	Income composite	Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985); Positive and Negative Affect Scale (Bradburn, 1969)	SWB	0.855	319	20.9	54.9	5	2007	1854.9	48.4	0.070
Zhang, Yang, & Wang (2009)	Beijing/ Xi'an sample	China	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.760	348	24.3	47.7	7	2006	1548.6	48.7	0.240
Zhang, Yang, & Wang (2009)	Beijing/ Xi'an sample	China	Household income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Positive affect	AWB	0.860	348	24.3	47.7	7	2006	1548.6	48.7	0.270
Zhang, Yang, & Wang (2009)	Beijing/ Xi'an sample	China	Household income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Negative affect	AWB	0.840	348	24.3	47.7	7	2006	1548.6	48.7	0.080
Zhang, Yang, & Wang (2009)	Beijing/ Xi'an sample	China	Household income	Chinese Happiness Inventory (Lu & Shih, 1997)	SWB	0.900	348	24.3	47.7	7	2006	1548.6	48.7	0.230
Zhang, Yang, & Wang (2009)	Los Angeles sample	United States	Household income	Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	CWB	0.880	394	20.6	18.8	7	2006	42102.0	38.4	0.190
Zhang, Yang, & Wang (2009)	Los Angeles sample	United States	Household income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Positive affect	AWB	0.810	394	20.6	18.8	7	2006	42102.0	38.4	0.050
Zhang, Yang, & Wang (2009)	Los Angeles sample	United States	Household income	Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988): Negative affect	AWB	0.830	394	20.6	18.8	7	2006	42102.0	38.4	0.080

Study	Description of the sample	Country	Income measure	SWB Scale	SWB component	Reliability[a]	*n*[b]	Mean age	Gender[c]	ISCED level	Year[d]	GDP[e]	Gini	*r*[f]
Zhang, Yang, & Wang (2009)	Los Angeles sample	United States	Household income	Chinese Happiness Inventory (Lu & Shih, 1997)	SWB	0.910	394	20.6	18.8	7	2006	42102.0	38.4	0.010

Note. n.a. = not available. [a]Reliability of the SWB scale. [b]Sample size. [c]Gender in % males. [d]Year of data collection. [e]Five-year average GDP. [f]Correlation between income and SWB scale within the primary study. [g]Datasets provided by experts.